**16th Annual Conference of the**

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**Business Transformation in Uncertain Global Environments**

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# EuroMed Academy of Business

CONFERENCE READINGS

BOOK PROCEEDINGS

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## Business Transformation in Uncertain Global Environments

# FOREWORD

The Annual Conference of the EuroMed Academy of Business aims to provide a unique international forum for the exchange of cutting-edge information. This is achieved through multidisciplinary presentations that focus on examining and building new theories and business models for success through management innovation.

The conference has established itself as one of the major conferences of its kind in the EuroMed region. This is evident in terms of its size, the quality of its content, and the standing of its attendees. Many of the papers presented significantly contribute to the business knowledge base.

The conference attracts hundreds of leading scholars from top universities, as well as principal executives and politicians from around the world. Participation includes presidents, prime ministers, ministers, company CEOs, presidents of chambers of commerce, mayors, and other leading figures.

This year, the conference attracted over 200 people from more than 30 different countries. Academics, practitioners, researchers, and doctoral students from around the world submitted original papers for conference presentations and publication in this Book of Proceedings. All papers and abstracts underwent a double-blind review process. The result of these efforts produced empirical, conceptual, and methodological papers and abstracts involving all functional areas of business.

# ACKNOWLEDGEMENT

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# GREEN BONDS AND BANKS: EVIDENCE FROM THE PRIMARY MARKET

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## ABSTRACT

This study examines the pricing of green bonds in the banking system. The paper aims to investigate the existence of the so-called *greenium* and, thus, whether investors are willing to pay more, receiving lower returns, for investments with a positive environmental impact.

Focusing on the primary market, we found no statistically significant differences in the yield to maturity between green and ordinary bonds.

Results are consistent with recent studies related to green bonds which show that the issuance of green bonds is not motivated by differences in pricing in the primary market. Results are inconsistent with evidence about the investors' willingness to pay more for instruments that provide non-pecuniary benefits.

This study focuses on *greenium* exclusively in the banking system, which has not been deeply investigated but plays a crucial role in climate transition. Furthermore, this study includes the period with the largest number of issuances ensuring a more accurate analysis and more robust results given the young age of the instrument.

*Keywords: Green Bonds, Banking, Greenium, Environmental, Green Finance, Sustainable Finance.*

## 1. INTRODUCTION

The purpose of this study is to examine the presence of the green premium, commonly referred to as *greenium*. The issue of whether investors are willing to pay more for green bonds, compared to ordinary ones, is still open.

Sustainability has become one of the most relevant topics that involve individuals, companies and policy-makers around the world.

In recent years, Environmental, Social, and Governance (ESG) investments have rapidly grown. According to the European Commission, Sustainable Finance has a key role in achieving the Paris climate agreement goals, channelling financial flows towards low-carbon and climate-resilient development.

Within sustainable finance, Green Bonds (GBs) have become very popular and represent a central instrument for sustainability's goals, particularly financially supporting the transition to a low-carbon economy (Sartzetakis, 2021)

The International Capital Market Association (ICMA 2021) defines Green Bonds as *"any type of bond instrument where the proceeds or an equivalent amount will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible Green Projects"*.

Green bonds are fixed-income securities whose purpose, unlike traditional fixed-income bonds, is to support specific projects with a positive environmental benefit. According to the Green Bond Principle (GBP), issuers have to disclose transparent and accurate information. Relevant information is related to the projects to finance, the management of proceeds and reporting.

Initially, the new bonds were issued by supranational financial institutions, such as the World Bank or the European Investment Bank. Later, municipalities, State Agencies and Corporate companies gradually started to use this new instrument. The first green bond was issued in 2007 by the European Investment Bank (EIB). However, only since 2016 the number of issuances, and their total amount, has gradually grown. In the thirteen years since the market inception, the Climate Bonds Initiative have calculated an average annual growth rate of approximately 95%. From 2007 to June 2023 the cumulative issuances reach about 2.3 trillion dollars.

Compared to traditional bond issuances, GBs issuers face several limitations in terms of investment policy, due to the condition of investing in green projects. Furthermore, disclosure obligations and monitoring activities may increase the overall costs.

The reasons that may lead stakeholders to prefer green bonds are therefore extremely relevant.

Flammer (2021) identified three potential reasons for issuing this new financial instrument:

1) the first is that green bonds represent a strong market signal regarding the companies' attention towards environmental issues;

2) the second refers to the *greenwashing* practice. The lack of efficiency controls in the green market, allows companies to issue green bonds even if they do not implement actions with positive environmental impact;

3) The third reason to issue green bonds is related to the *cost of capital* and it is the core of this study. In order to achieve sustainability goals, the investor should accept to reduce their yields and, consequently, for issuers green bonds may represent a cheaper source of financing compared to traditional bonds. This phenomenon is called *greenium*.

From an investors' perspective, it is not clear whether they are willing to receive a lower return to finance projects with a potential positive environmental impact.

For these reasons, we investigate the existence of *greenium*. We focus on the primary market, examining the differences in yield-to-maturity between green and non-green bonds in the banking system.

Banks issued 26% of the total amount issued in the green bonds market. Moreover, banks are only the ones that can issue green bonds to finance their projects, like other companies, or can use the proceeds of green bonds for lending,

Banks, due to their relevant role in the intermediation system, are and will be fundamental players in the achievement of sustainable goals and assistance to the real economy (Panetta 2021).

The number of studies that focus on green bonds in the banking system is very limited and does not consider a large number of issuances in the last few years.

Even though the interest of academia in green bonds is increasing, the literature regarding this specific asset is still in the first stages. Previous studies investigate the green bond in the US municipal market, others focus on the corporate green bond or the whole financial sector. Existing literature lacks contributions specifically focused on the banking industry.

Our paper aims to fill this gap and extend the literature regarding this financial instrument.

Our study contributes to the literature in several ways. First, we extend the growing literature that studies the green bond markets and sustainability in the banking industry.

Moreover, this paper contributes to the recent literature on impact investing that refers to the new instruments that aim to generate a social and environmental positive impact.

We also contribute to the literature that studies investors' preference towards ESG (Dimson et al. 2015; Dyck et al. 2019).

We believe our results have significant managerial implications. Because of the lack of empirical evidence about potential *greenium* in the banking industry, our study can help to understand the importance and motivations of issuing green bonds, beyond the positive externalities to finance green projects.

## 2. LITERATURE REVIEW

The literature on banking and ESG is still not widespread. Scholars have mainly focused on CSR, specifically, the social dimension of ESG within CSR and the creation of value for a company with only a timid interest in environmental issues (Galletta et al. 2022).

Recent studies suggest that people value sustainability (Hartzmark and Sussman 2019). The positive market reaction to green bond issuances (Flammer 2021; Tang and Zhang 2020) confirms the investors' interest towards environmentally friendly instruments.

The *greenium* presupposes investors' willingness to accept lower returns in exchange for a positive environmental impact. Despite the impact of non-pecuniary benefits in investments is not something new (i.e. Andreoni 1989), recent studies based on socially responsible investments (SRI) show that investors are willing to forgo financial performance. In accordance with their social preferences, they pay higher management fees for SRI funds (Riedl Smeets 2017).

Bedendo et al. (2022) analyzed the characteristics of banks that issue green bonds in order to understand which banks are more likely to use this instrument and if the issuance leads to an improvement in a bank's environmental footprint.

The existence of *greenium* is currently opaque and the previous studies, analyzing different markets and using different methodologies, show opposite results.

Karpf and Mandel (2018) focus on green bonds in the US American municipal bonds market and investigate the yield term structures of green and standard bonds from issuers. Using secondary market yields, they find on average a green bond discount of approximately eight basis points.

US municipal bonds, issued from 2010 through 2016, were also analyzed by Baker *et al*. (2018) who have found opposite results according to which green municipal bonds are issued at a premium to otherwise similar ordinary bonds. Baker *et al.* (2018) explain that their results are more accurate as compared to the Karpf and Mandel (2018) study since many municipal bonds included by Karpf and Mandel (2018) in their sample, were taxable and the US municipals market is highly sensitive to tax features.

Zerbib (2019) expand the analysis and investigate green bonds' pricing outside the US municipal bonds market. The author has examined a sample of 110 green bonds issued from July 2013 to December 2017. For each bond were selected a counterfactual conventional bond in order to estimate the yield differential. The results show on average a premium of two basis points.

Ehlers and Packer (2017), analyzing 21 bonds, labelled as green, between 2014 and 2017, found that investors are willing to pay a premium of 18 basis points for green bonds. Same results, even though with a different magnitude, were found by Hachenberg and Schiereck (2018) which focus on secondary markets and investigate daily data of a sample of 63 green bonds in different sectors from October 1, 2015, to March 31, 2016. They found a premium of 1 base point.

Even though these results seem to be consistent with the existence of *greenium*, subsequential studies revisit previous literature questioning their results. Larcker and Watts (2020) whose study is close to Karpf and Mandel (2017) and Backer (2018, state that prior results are biased by the methodical design.

Larcker and Watts (2020) found opposite results and show that, in the US municipal market, the *greenium* is zero. Similar results are those obtained by Flammer (2021) who, examining 152 corporate

green bonds from 2010 to 2018, finds no pricing difference between corporate green bonds and non-green bonds. Hence, it strengthened the idea that the new instrument may not be considered a cheaper source of debt financing. Nevertheless, Fatica et al. (2021), using a large sample of bonds issued worldwide from 2007 to 2018, find a premium for green bonds issued by supranational institutions and corporates but no yield differences in the case of issuances by financial institutions. Moreover, the European Securities and Markets Authority (ESMA) Report on Trends, Risks and Vulnerabilities (ESMA 2022) show evidence of the existence of a *greenium* for investment rate bonds with a residual maturity of more than ten years.

We are therefore faced with a phenomenon on which the literature has produced mixed results and deserves further analysis to clarify the reasons behind the spread of this financial instrument. Moreover, previous studies do not cover the last years, which represent the green bond boom period.

## 3. DATA AND METHODOLOGY

We construct the data set from the Refinitiv Eikon database. The data collection process can be divided into two steps.

First, we selected all green bonds issued by Banks. We restrict the sample to bonds with non-missing in the Price at Issuance. Due to the several numbers of missing information for the Yield to Maturity at the issuance, we decided to calculate this variable. We thus restrict the sample to bonds with non-missing information in the Price at Issuance, in order to be able to calculate the Yield to Maturity. The decision to not extract the dependent variable directly from the database, allows us to have a larger number of observations. We randomly compare the results of our Yield-to-maturity calculation with the ones provided by Rifinitiv Eikon. We verified that there are no differences in the formula we apply. Furthermore, we keep just the Zero-Coupon bond and the Plain Vanilla Fixed Coupon.

A total of 1,149 green bonds have been included in the sample issued by 280 different banks.

In the second step, we extracted the traditional bonds (or brown bonds or non-green) issued by the same banks, to create the control sample. The number of brown bonds is 200,530.

The initial sample includes 201,679 bonds and covers the period from 2013 to March 2023. For each bond, we selected a set of variables.

The descriptive statistics of our sample are summarized in Table 1. The table is divided into Panel A, Panel B and Panel C, which report the descriptive statistics of the total sample, green bonds, and non-green bonds, respectively.

Table 2 shows the total number of issuances, and the total amount has constantly grown. Our sample covers just the first three months of 2023.

**Panel A: Green and Non-Green Bonds**

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Yield | 202,349 | 0.0482 | 0.0627 | -0.0050 | 0.3171 |
| Coupon | 202,349 | 4.15 | 5.260 | 0.0000 | 23.4000 |
| Amount (Log) | 196,967 | 26,93 | 121.53 | 0.086 | 1,000 |
| Maturity (Years) | 202,349 | 2.649 | 4.653 | 0.005 | 1010.671 |
| Call | 202,349 | 0.1352 | 0.3421 | 0 | 1. |
| Put | 202,349 | 0.0001 | 0.0111 | 0 | 1 |
| Rating | 10,188 | 4.5678 | 2.8209 | 1. | 18 |
| Bank Size | 38,243 | 27.3192 | 0.7827 | 21.6479 | 29.3795 |

**Panel B: Green Bonds**

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Yield | 1,149 | 0.0198 | 0.0215 | -0.0033 | 0.1752 |
| Coupon | 1,049 | 1.9437 | 2.1255 | 0 | 17.5200 |
| Amount (Mln USD) | 1,149 | 256.73 | 292.87 | 0,0863 | 1,000 |
| Maturity (Years) | 1,149 | 5.9485 | 3.9927 | 1 | 34.0247 |
| Call | 1,149 | 0.0722 | 0.2589 | 0 | 1 |
| Put | 1,149 | 0 | 0 | 0 | 0 |
| Rating | 511 | 4.1350 | 2.9624 | 1 | 17 |
| Bank Size | 315 | 27.0539 | 1.4298 | 22.9015 | 29.3796 |

**Panel C: Non-Green Bonds**

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Yield | 201,200 | 0.0483 | 0.0628 | -0.0050 | 0.3171 |
| Coupon | 201,200 | 4.1582 | 5.2698 | 0.0000 | 23.4000 |
| Amount (Mln USD) | 195,818 | 25.58 | 118.49 | 0.0863 | 1,000 |
| Maturity (Years) | 201,200 | 2.6298 | 4.6497 | 0.0055 | 1,011 |
| Call | 201,200 | 0.1358 | 0.3425 | 0.0000 | 1.0000 |
| Put | 201,200 | 0.0001 | 0.0111 | 1.0000 | 0.0001 |
| Rating | 9,607 | 4.5748 | 2.818 | 1 | 18.0000 |
| Bank Size | 37.3284 | 27.321 | 0.7748 | 21.3796 | 29.3796 |

Table 1: This table shows the summary statistics for the overall sample (Panel A), green bonds (A) and Non-green bonds (Panel C). Yield is the Yield to maturity at Issue. Coupon is the annual interest rate for Plain vanilla fixed coupon bonds. Amount the log of issuance amount. Rating is the credit rating at the issuance level. The variable assumes values from 1 (top rating) to 19 (worst rating). Maturity is the maturity of the green bond (in years). Call is a dummy variable that is equal to one if the bond is callable. Put is a dummy that is equal to one if the bond is puttable. Bank size is the log of the Total Assets in the issuance year.

*Yield, Coupon, and Amount have been winsorised at 1% and 99%.*

| Year | Obs | $ Amount (Mean) | $ Amount (Std. dev.) | $ Amount Min | $ Amount Max |
|---|---|---|---|---|---|
| 2013 | 4 | 174,000,000 | 219,000,000 | 41,200,000 | 500,000,000 |
| 2014 | 14 | 69,000,000 | 103,000,000 | 1,450,692 | 372,000,000 |
| 2015 | 22 | 352,000,000 | 267,000,000 | 3,041,140 | 800,000,000 |
| 2016 | 44 | 450,000,000 | 356,000,000 | 790,696 | 1,000,000,000 |
| 2017 | 73 | 264,000,000 | 274,000,000 | 340,089 | 1,000,000,000 |
| 2018 | 91 | 306,000,000 | 302,000,000 | 361,344 | 1,000,000,000 |
| 2019 | 109 | 306,000,000 | 310,000,000 | 307,048 | 1,000,000,000 |
| 2020 | 183 | 112,000,000 | 198,000,000 | 168,000 | 1,000,000,000 |
| 2021 | 291 | 192,000,000 | 253,000,000 | 86,343 | 1,000,000,000 |
| 2022 | 301 | 330,000,000 | 311,000,000 | 107,359 | 1,000,000,000 |
| 2023 (March) | 17 | 577,000,000 | 285,000,000 | 6,441,569 | 1,000,000,000 |

Table 2: This table reports the number of green bond years and the total issuance amount. The variable amount has been winsorised at 1% and 99%.

Following Backer *et al.* (2018) and Fatica *et al.* (2021), we performed a set of regressions with different specifications.

Our econometric model is:

$$Yield_{b,i,t} = \beta_0 + \beta_1 \, Green_{b,i,t} + \beta_2 \, Coupon_{b,i,t} + \beta_3 \, Amount_{b,i,t} + \beta_4 Maturity_{b,i,t} + \beta_5 \, Call_{b,i,t} + \beta_6 \, Country_{b,i,t} \, \delta + \phi + \varepsilon$$

Where our dependent variable *Yield* is the yield-to-maturity at issuance of bond $b$ issued by the bank $i$ at time $t$, expressed as a percentage. *Green*, our main variable, is a dummy variable equal to 1 if the bond is labelled green. According to previous studies (i.e. Gu et al. 2017; Fatica 2021) we control for several variables. *Coupon* is the annual interest rate. *Amount* is the issuance amount in USD Million. Maturity is the number of years to maturity. *Call* is a dummy variable that is equal to one if the bond is callable. Coupon Type is a dummy variable equal to 1 if the bond is Plain vanilla fixed coupon and zero if the bond is Zero Coupon.

To also capture time-varying unobservable factors we introduce in our regression time fixed effect. We also introduce the issuer fixed effect to capture firm-specific characteristics and currency fixed effects.

## 4. RESULTS

Table 2 reports the baseline results. Column (1) shows that controlling for coupon, amount issue and maturity, the coefficient for the green variable is negative. This result suggests the existence of *greenium*. However, the coefficient is not statistically significant. Column (2) shows the results

introducing controlling also for callable option, which can influence the yield to maturity at issuance. The coefficient for the green variable remains negative increasing also the magnitude of *greenium* but it is not significant.

In the last specification we also control for coupon type, and we introduce currency fixed effect, bank fixed effect and time fixed effect. Again, the coefficient remains negative even though not statical significant.

All the specifications present no evidence of *greenium*.


## 5. CONCLUSION REMARKS

Green bonds are relatively new instruments that have rapidly grown in the last few years, becoming one of the most important instruments to finance environmentally friendly projects. Banks are the most important issuers both in terms of numbers and amount issued. In this paper, we investigate whether the issuance of green bonds in the banking system is motivated by the opportunity to issue bonds with a higher price (that means lower interest) compared to ordinary bonds. From a different perspective, we investigate whether investors are willing to receive less interest when they invest in bonds with a positive environmental impact.

According to our results, there is no evidence of the presence of *greenium*. All the specifications show a negative coefficient of our main variable, which can suggest a lower interest for green bonds compared to ordinary bonds. Furthermore, the coefficient is not significant.

Our evidence is in line with recent evidence (i.e. Flammer 2021, Fatica *et al.* 2021) and is inconsistent with the *cost of capital* as the reason to issue green bonds. Our results are also inconsistent with the literature that finds evidence about the investors' willingness to pay more for instruments that provide non-pecuniary benefits.

Our study presents limitations. The analysis could be improved using matching approaches, in order to check the robustness of our results.

The green market is growing rapidly, and it is less explored. Future research should investigate how the regulatory intervention affects the market. The introduction of new legislation about green criteria is unexplored. Moreover, future research should focus on the secondary market to analyse whether green bonds are riskier than traditional ones.

|  | (1) | (2) | (3) |
|---|---|---|---|
|  | Yield at Issue | Yield at Issue | Yield at Issue |
| Green | -0.024 | -0.049 | -0.046 |
|  | (0.087) | (0.101) | (0.126) |
| Coupon | 0.956*** | 0.958*** | 1.009*** |
|  | (0.019) | (0.019) | (0.022) |
| Amount | -0.162*** | - 0.165** | -0.072 |
|  | (0.064) | (0.064) | (0.049) |
| Maturity | - 0.016 | -0.012 | -0.016 |
|  | (0.010) | (0.218) | (0.013) |
| Call |  | -0.375* | -0.226** |
|  |  | (0.218) | (0.101) |
| Coupon Type |  |  | -2.024*** |
|  |  |  | (0.517) |
| _cons | -0.974*** | 1.012*** | 2.251*** |
|  | (0.334) | (0.341) | (0.572) |
| Observations | 196,967 | 196,967 | 196,967 |
| R-Square | 0,673 | 0.674 | 0,724 |
| Issuer FE | No | No | Yes |
| Time FE | No | No | Yes |
| Currency | No | No | Yes |

Table 2: Yield is the Yield to maturity at Issue (%). Coupon is the annual interest rate. Amount is the Log of issuance amount. Maturity is the maturity of the green bond (in years). Call is a dummy variable that is equal to one if the bond is callable. Coupon type is a dummy variable equal to 1 if the bond is Plain vanilla fixed coupon and zero if the bond is Zero Coupon. $*$, $**$, and $***$ denotes significance the 10%, 5%, and 1% level, respectively.

## REFERENCES

Andreoni, J. (1989), "Giving with impure altruism: Applications to charity and Ricardian equivalence", Journal of Political Economy, 97(6), 1447-1458.

Baker, M., Bergstresser, D., Serafeim, G., and Wurgler, J. (2018). "Financing the response to climate change: The pricing and ownership of US green bonds", (No. w25194), National Bureau of Economic Research.

Bedendo, M., Nocera, G., and Siming, L. (2022), "Greening the Financial Sector: Evidence from Bank Green Bonds", Journal of Business Ethics, 1-21.

Dimson, E., Karakaş, O., and Li, X. (2015). "Active ownership", The Review of Financial Studies, 28(12), 3225-3268.

Dyck, A., Lins, K. V., Roth, L., and Wagner, H. F. (2019), "Do institutional investors drive corporate social responsibility? International evidence", Journal of Financial Economics, 131(3), 693-714.

Ehlers, T., and Packer, F. (2017), "Green bond finance and certification", BIS Quarterly Review September.

European Securities and Market Authority, ESMA (2022) Reports on Trends Risk and Vulnerability, N.1. Available at: https://www.esma.europa.eu/sites/default/files/library/esma50-165-2058_trv_1-22_risk_monitor.pdf.

Fatica, S., Panzica, R., and Rancan, M. (2021). "The pricing of green bonds: are financial institutions special?", Journal of Financial Stability, 54, 100873.

Flammer, C. (2021). "Corporate green bonds", Journal of Financial Economics, 142(2), 499-516.

Galletta, S., Mazzù, S., and Naciti, V. (2022), "A bibliometric analysis of ESG performance in the banking industry: From the current status to future directions", Research in International Business and Finance, 62, 101684.

Hachenberg, B., and Schiereck, D. (2018), "Are green bonds priced differently from conventional bonds?", Journal of Asset Management, 19, 371-383.

Hartzmark, S. M., and Sussman, A. B. (2019), "Do investors value sustainability? A natural experiment examining ranking and fund flows", The Journal of Finance, 74(6), 2789-2837.

Karpf, A., and Mandel, A. (2017), "Does it pay to be green?", Available at SSRN 2923484.

Larcker, D. F., and Watts, E. M. (2020), "Where's the greenium?", Journal of Accounting and Economics, 69(2-3), 101312.

Panetta, F. (2021). "A global accord for sustainable finance", The ECB Blog, Frankfurt am Main, 11 May 2021

Riedl, A., and Smeets, P. (2017), "Why do investors hold socially responsible mutual funds?", The Journal of Finance, 72(6), 2505-2550.

Sartzetakis, E. S. (2021), "Green bonds as an instrument to finance low carbon transition", Economic Change and Restructuring, 54(3), 755-779.

Tang, D. Y., and Zhang, Y. (2020), "Do shareholders benefit from green bonds?" Journal of Corporate Finance, 61, 101427.

Zerbib, O. D. (2019), "The effect of pro-environmental preferences on bond prices: Evidence from green bonds", Journal of Banking and Finance, 98, 39-60.

International Capital Market Association (2021), "Green Bond Principles Voluntary Process Guidelines for Issuing Green Bonds", June 2021. Available at: https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles_June-2022-280622.pdf

# APPLICATIONS OF TPB AND TAM THEORETICAL BACKGROUNDS FOR ONLINE PURCHASING RESEARCH DURING COVID-19 PANDEMIC

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## ABSTRACT

Studies that analyse online shopping behaviour most typically are based either on the Theory of Planned Behaviour (TPB) or the Technology Acceptance Model (TAM). However, the COVID-19 pandemic has drastically changed the habits of consumers by revealing additional situational and long-term dispositional factors significantly affecting their online purchasing behaviour. Using a systematic literature review, this study aims to expand the knowledge of the factors that emerged in the TPB and TAM models during COVID-19. The study is based on two separate systematic analyses for TPB and TAM using Web of Science and Scopus databases. They include 962 articles (TAM - 551, TPB - 411) published between 2020 and 2022. Based on PRISMA steps, 35 articles (TAM - 20, TPB - 15) are included in the final analysis. The findings reveal three groups of factors (contextual, personal characteristics, and online shopping related) that are important for online shopping during the pandemic. Based on these findings, theoretical contributions and future research directions are provided.

*Keywords: TAM, TPB, COVID-19, online purchasing.*

## INTRODUCTION

The dynamic growth of e-commerce in consumer goods made it the leading form of retail sales. It has achieved an 18% share of the total global retail sales in 2020 and is forecasted to have over a 1% annual growth rate, achieving nearly a 22% share of total global retail sales by 2024 (International Trade Administration, n.d.). The COVID-19 pandemic combined with widespread stay-at-home orders has further accelerated the growth and adoption of e-commerce among consumers worldwide (Pham et al., 2020). In 2021, retail e-commerce sales amounted to approximately 4.9 trillion U.S. dollars worldwide with the forecast to reach 7.4 trillion dollars by 2025 (Asendia, 2022). Therefore, it is not surprising that the growing scale of e-commerce has strengthened the need to analyse the factors influencing consumers to purchase online. Most of the studies that analyse online shopping behavior are based on the Theory of Planned Behaviour (TPB) or the Technology Acceptance Model (TAM) (e.g., Primabudi and Samopa, 2017; Sajid et al., 2022). These theoretical models explain rational aspects of consumer

considerations, such as perceived usefulness, and perceived ease of use as well as subjective norms (the consumer's attitudes towards behavior, social pressures from society to conform to societal norms or the consumer's perceived control over behavior). Many studies, including systematic literature reviews, have revealed factors related to these models and their influence on online purchasing behavior (e.g., Domina et al., 2012; Faqih, 2016).

Due to COVID-19, consumers have suddenly been forced to change their habits and choose online channels for their shopping much more frequently (Pantano et al., 2020; Seth, 2020). Though online purchasing behavior can continue to be analysed based on the TPB and TAM, these two theoretical backgrounds had to include additional situational and dispositional factors that have emerged due to COVID-19. Despite of the interest in behavioral changes during Covid-19, these factors remain under-researched and the amendments of TPB and TAM models during the pandemic present a significant research gap. Although the pandemic has generated a new wave of research addressing online shopping behavior, studies have addressed the effects of COVID-19 on consumers' online shopping behavior from their own perspective, without an attempt to classify the newly occurring factors and without the aim of conceptualizations of their importance to the two grounding models. Therefore, this study through a systematic literature review aims to expand the knowledge of the factors that emerged in the TPB and TAM models during COVID-19.

The paper is structured as follows: the literature review presenting the relevant research for the phenomenon under consideration, research methodology, results and discussion, and conclusions.

## LITERATURE REVIEW

*Use of TPB to explain online purchasing behaviour*

The TPB assumes that behavioral intentions and subsequent behaviors are predetermined by behavioral, normative, and control beliefs (Ajzen, 2012). These three main types of antecedents appear in the form of attitudes, subjective norms, and perceived behavioural control (PBC). Attitude toward behavior refers to how an individual generally evaluates a behavior under consideration while the subjective norm is the perceived opinion of other people in relation to that behaviour (Ajzen, 1991, p. 188). Perceived behavioural control can be conceptualised as the individuals' perception of how easy or difficult is to generate considered behaviour (Posthuma and Dworkin, 2000). In addition, the mentioned three determinants of behavioural intention may be impacted by predictors that are included in broader sets of beliefs (Lee et al., 2010). Analysis of former studies confirms that TPB was often used to explain online purchasing behaviour (e.g., Bhati et al. 2022; Primabudi and Samopa, 2017). However, the content of attitudes, subjective norms, and perceived behavioural control may take specific forms that are corresponding to the online purchase situation. Consumers may associate online

purchasing behaviour with obstacles and difficulties of searching for goods online, since this may require specific experience, knowledge, skills, and even resources.; this would predetermine specific levels of perceived behavioural control (Nguyen et al., 2022). Also, as consumers may perceive difficulties and risks of online purchasing, it is expected that they will use their cognitive resources to form beliefs, which lead to the development of attitudes toward the behaviour in question (Hansen, 2008). Furthermore, to mitigate the perceived risk, they may seek normative guidance from others that are relevant to them (Giang et al., 2022).

COVID-19 has significantly changed the buying behaviour of most consumers. It was happening because restrictions and social distancing practices in many instances have left online purchasing as the only available option. In other cases, consumers themselves have chosen online purchasing as a safer option due to fear of being infected, the uncertainty of the future, more general pandemic concerns, etc. (Shaw et al., 2022; Hansson et al., 2022). Performed studies identified several factors that were specific to COVID-19 and could affect online purchasing behaviour (e.g., Toska et al., 2022; Giang et al., 2022). However, they are fragmented, often related to the specific countries and the particular restrictions implemented in them during COVID-19.  Therefore, a deeper and more comprehensive analysis of the factors that supplemented the TPB for a better explanation of consumer behaviour during the pandemic is needed. Based on that, the following research question is developed:

*RQ1: What factors emerged in the TPB during COVID-19 to better explain consumers' online purchasing behaviour?*

*TAM use for explaining online purchasing behaviour*

Introduced by Davis (1986), the technology acceptance model (TAM) has become one of the most popular theoretical approaches used to explain the process of technology adoption on the individual level (Widyanto et al, 2022). Originated from the theory of planned behaviour (TPB) and theory of reasoned action (TRA), TAM suggests that two mediating variables of perceived ease of use and perceived usefulness of a system, in combination with multiple external variables (system characteristics) are impacting the attitude towards the system use and the actual system use (Davis, 1986). Although the TAM was followingly extended and further developed into other theories such as the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012), the technology acceptance model remains the most prominent and widely used theoretical background for describing the individual acceptance of information systems (Al-Qaysi, 2020).

Purchasing online is one technology-related behaviour that is frequently investigated by employing the technology acceptance model (Vahdat et al., 2021). TAM has been employed to explore broad online purchasing-related topics, such as purchasing online with mobile devices (Vahdad et al., 2021), as well

as more specific and significantly more narrow topics, such as online purchasing of telemedicine services (Kamal et al., 2020), mobility services (Min et al., 2021), online streaming (Camilleri and Falzon, 2021), groceries (Shukla and Sharma, 2018). The use of TAM has reached a new significance during the COVID-19 pandemic, as the multiple restrictions on traditional brick-and-mortar businesses forced consumers to migrate online (Seetharaman, 2020). Thus, multiple researchers investigate the adoption of online purchasing during the pandemic, by employing the TAM (Smaldone et al., 2021; Nguyen et al., 2021), however comprehensive analysis of the factors that supplemented the TAM for a better explanation of online consumer behaviour during the pandemic is needed. Therefore, the following research question is developed:

*RQ2: What factors emerged in the TAM during COVID-19 to better explain consumers' online purchasing behaviour?*

## METHODOLOGY

*Selection of articles: databases and keywords*

To achieve the goal of this study, two systematic literature reviews were performed: one concentrating on TPB developments during Covid 19, another - on TAM. The systematic literature review was chosen as being one of the most suitable research methods, which helps to identify the relevant literature distinguishing the potential research gaps that need to be further researched to contribute towards a systematic development of new knowledge in the field (Tranfield et al., 2003). This study is based on the transparent and replicable protocol of a systematic literature review (Pickering & Byrne, 2014; Tranfield et al., 2003).

The articles for both systematic literature reviews were selected from November to December 2022 from multiple electronic databases, more specifically Web of Science and Scopus, due to their largest coverage and frequent use by solid systematic reviews (Mariani et al., 2021; Taufik et al., 2021; Sepulcri et al., 2020). Consistent with previous systematic reviews in marketing and consumer behavior, the search was limited to peer-reviewed journal articles and conference proceedings, refusing book chapters, books, theses, and other nonrefereed publications. The reason for this was that peer-reviewed journals shape the ongoing research on both the theoretical and empirical levels by publishing articles with only validated knowledge (Furrer et al., 2008).

When conducting a systematic literature review, the first step is determining the keywords that allow identifying the papers (Aveyard, 2010). To address it, the most frequently used keywords in peer-reviewed literature have been under investigation. As such, for the TAM systematic literature review, the following research chain was used: ("tam*" OR "technology acceptance model") AND ("purchase" OR "purchasing" OR "buy" OR "buying") AND ("virtual" OR "web" OR "e" OR "internet" OR "electronic"

OR "online") AND ("covid" OR "coronavirus"). Keywords "tam", "technology acceptance model", "covid" and "coronavirus" were searched in the full article text, while the remaining keywords – were only in the title, abstract, and keywords of the article. While for the TPB systematic literature review the following: ("tpb*" OR "theory of planned behavior" OR "theory of planned behaviour") AND ("purchase" OR "purchasing" OR "buy" OR "buying") AND ("virtual" OR "web" OR "e " OR "internet" OR "electronic" OR "online") AND ("covid" OR "coronavirus"). Like in the case with TAM, keywords "tpb", "theory of planned behavior" as well as "covid" and "coronavirus" were searched in the full text, while the remaining keywords were searched only in the title, abstract and article keywords.

*Inclusion and exclusion criteria*

The inclusion of articles in both systematic reviews was restricted to the period between 2020 and 2022 to reflect the period of the COVID-19 pandemic. As discussed above, only peer-reviewed articles and conference proceedings were included in the research. Books, theses, and other nonrefereed publications were excluded from the further analysis.

*Screening of articles*

*TPB systematic literature review*

The initial search resulted in a total of 411 documents (Web of Science – 23, Scopus – 388). First, duplicates were removed, after which the number of research papers narrowed to 393. In the next step, the titles and abstracts of the remaining articles were screened by two experts individually to identify the research that investigated the online purchasing behaviour (more specifically purchase intentions) of products in the context of TPB. The articles which received a positive assessment from at least one expert were selected for further analysis, resulting in a total number of 195 articles. Lastly, full articles were read and assessed by two experts. It was found that 58 articles analysed not online shopping or not from an online shop, in 26 articles dependent variable was not the intention to purchase online, 10 articles analysed not purchasing products but specifically services, in 73 articles no TPB model was used, in 9 articles data was collected during COVID-19 but it was not analysed or mentioned, 4 articles were based on qualitative research (see Figure 1). The final list included 15 articles.
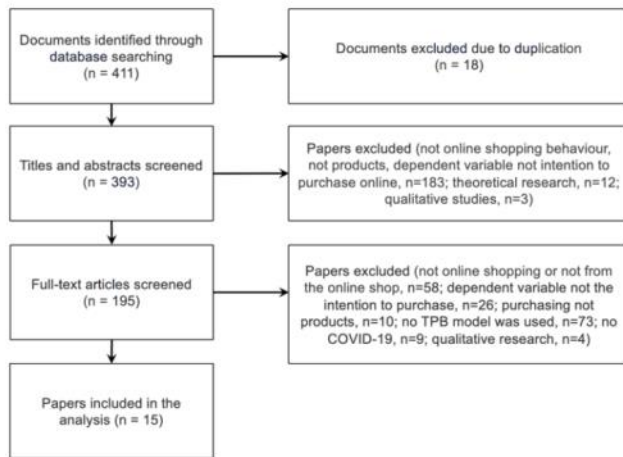
*Figure 1. PRISMA flow chart.*

*TAM systematic literature review*

The initial search resulted in a total of 551 documents (Web of Science – 26, Scopus – 525). First, duplicates were removed, after which the number of research papers narrowed to 524. In the next step, the titles and abstracts of the remaining articles were screened by two experts individually to identify the research that investigated the online purchasing behaviour (more specifically purchase intentions) of products in the context of TAM. The articles which received a positive assessment from at least one expert were selected for further analysis, resulting in a total number of 326 articles. Lastly, full articles were read and assessed by two experts. As a result, 16 articles were theoretical, 5 articles used qualitative methodology, 97 articles analysed not online shopping or not from an online shop, in 34 articles dependent variable was not the intention to purchase online, 31 articles analysed not purchasing products but specifically services, in 123 articles no TAM model was used (see Figure 2). The final list included 20 articles.
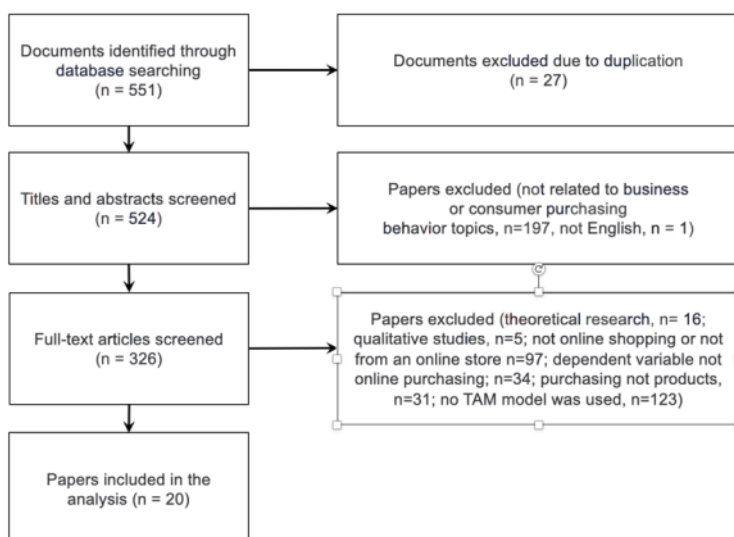


*Figure 2. PRISMA flow chart.*

## RESULTS AND DISCUSSION

*TPB factors explaining COVID-19's impact on online purchasing behaviour*

The analysis of former studies that used the TPB model to explain online purchasing behaviour during the COVID-19 pandemic, distinguished different factors inherent in this period. Some of the articles focused on the impact of situational (contextual) factors (6) while others revealed specific personal characteristics (3), or factors related to consumers' online purchasing behaviour (3); only a few of them (3) distinguished the factors that can be attributed to several of the three previously mentioned groups. Among the contextual factors, 5 articles distinguished the impact of COVID-19 on online purchasing behaviour. However, it is important to highlight that in analysed studies this impact was differently named and/or included different aspects. Two of the studies called it just an impact of COVID-19 while other studies named it a pandemic concern or pandemic fear, one study even highlighted the risks related to COVID-19. However, all the studies equally incorporated the aspect of being infected with this novel virus and the actions that can lead to this, while defining this impact. Another important contextual factor that became important during this period is social isolation or social distancing practices which are closely related to the before-mentioned impact of COVID-19. Although social isolation has been analysed previously, only in a different context, describing it "as the unbiased physical separation of an individual from others or a situation in which an individual maintains a complete or near-complete lack of communication due to emergencies that occur in any location" (Eccles, 1987), during the COVID-19, due to the severe restrictions on people movement, it became an important factor promoting online shopping behaviour. It was revealed as having an impact directly on online purchasing behaviour or exerting moderating impact. Additionally, access and picking up the goods as well as information overload was indicated as having a direct or indirect impact on online purchasing behaviour. The access factor was related to the individuals' possibilities to safely receive the delivered goods as well as internet connection capabilities (Trude et al., 2021), the latter being a mandatory condition to perform online purchases. While picking up the products was described as a way of delivering the goods to the final consumer (in-store pick-up or home delivery). Finally, information overload during the pandemic via social media and the internet aroused excessive reactions and unusual buying behaviours in consumers (e.g., Bermes, 2021), and had an indirect, through attitude, impact on online purchasing behaviour.

While specifying personal characteristics, health consciousness was found as the most frequently considered and important personal characteristic, followed by internet familiarity, personal innovativeness, and information search anxiety. The distinguished characteristics allow us to classify them into two broader groups: health and IT literacy related. First, COVID-19 has expedited the trend of keeping oneself healthy, avoiding sickness, and strengthening the immune system. Second, health

concerns together with strict restrictions implemented by the governments moved most of the purchases to the online environment. Consequently, purchasing online was not limited to those groups of people who had already done so in the past and therefore had the necessary skills and knowledge, but also included individuals who started purchasing online because of the necessity, sometimes even having no skills and experience in doing so. Therefore, some individuals continued to improve their skills while purchasing online and satisfied their need for innovativeness while others faced information overload which as a result increased their anxiety.

The group of factors related to the consumers' online purchasing behaviour included factors such as the perceived risk and benefits of online purchasing behaviour, trust in online shopping, and hedonic motivation. Part of the mentioned factors, more specifically perceived risks, and benefits as well as trust in online shopping, arose due to the need to fit the TPB model to the online context which became the main and essentially the only way to purchase goods during COVID-19. Research on online purchasing behaviour before COVID-19 has revealed the negative impact of perceived risks (e.g., Chang and Chen, 2008) and the positive impact of perceived benefits (e.g., Yew and Kamarulzaman, 2020) and trust in online shopping (e.g., Rehman et al., 2019) on intention to purchase online. Hedonic motivation also was revealed as a factor positively influencing the intention to purchase online (e.g., Lim, 2017) before COVID-19, however during the pandemic it gained even greater importance because the closure of restaurants, bars, and cinemas during the shutdown has limited opportunities to engage in leisure activities and engagement in online purchasing suggested a possibility to compensate hedonic consumers' needs fully or at least partly.

*TAM factors explaining COVID-19's impact on online purchasing behaviour*

The analysis of previous studies that used the TAM model to explain online purchasing behaviour during the COVID-19 pandemic also revealed several factors inherent in this period. Some of the articles focused on the impact of situational (contextual) factors (5) while others revealed specific personal characteristics (2) or factors related to consumers' online purchasing behaviour (4); and two articles distinguished the factors that can be attributed to several of the three previously mentioned groups. Several studies (7), although based on the TAM, did not distinguish the factors that can be specific to COVID-19.

Among the contextual factors, 6 articles distinguished the impact of COVID-19 itself on online purchasing behaviour. Similar to the case of the TPB, this impact was differently named or even different aspects of it have been measured. One study called it just an impact of COVID-19, another – measured it through the aspect of perceived severity of its impact, one more study named it a fear of COVID-19, some (2) even highlighted the risks related to COVID-19, and one named it among the other situational factors.

Social isolation intention was another important contextual factor that had a direct impact on the intention to purchase online. In addition, the specific type of risk - perceived health risk, indicating customers' perceived risk to their physical health due to uncontrolled events such as a pandemic (Warganegara and Hendijani, 2022), was distinguished as a direct predictor of online purchasing behaviour.

Among the personal characteristics, personal innovativeness, internet familiarity, and personal awareness of security were proved as having an impact on online purchasing behaviour. All these characteristics are related to personal IT literacy which became irreplaceable since most of the purchases during the pandemic were placed online.

The last group of factors, related to the consumers' online purchasing behaviour, involved the same factors as indicated in the studies using the TPB to explain online purchasing behaviour: perceived risks and benefits of online purchasing behaviour, trust in online shopping, and hedonic motivation.

## CONCLUSIONS

The COVID-19 pandemic period has triggered amendments to the two theoretical models under consideration in studies on online purchasing. There are factors that are used to amend both models in a similar way. These include specific contextual factors (impact of COVID-19, social isolation practices), personal characteristics (personal innovativeness and internet familiarity) as well as online purchasing-related factors (perceived risks and benefits, trust in online shopping, and hedonic motivation). The set of these characteristics perfectly reflects the fact that most of the purchases during the COVID-19 were moved to the online environment. Specific amendments of TPB include personal characteristics like health consciousness and information search anxiety, as well as contextual factors such as access and picking up the goods and information overload. This can be explained by the fact, that consumers' choice for online purchasing was driven by their subjective beliefs about their health, leading to the safer purchasing option at this time. However, at the same time, this new type of behaviour required new skills, experience, and even resources (like access to the internet). Therefore, consumers who had no previous experience often encountered information search anxiety.

Specific amendments of TAM include personal awareness of security and a specific type of risk – a perceived health risk. This can be explained based on the initial aim of the TAM to explain the process of technology adoption on the individual level. During the COVID-19 pandemic, online purchasing was not limited to those groups of people who had already done so in the past and therefore had the necessary skills and knowledge, but also included individuals who started purchasing online because of the necessity, often without the necessary knowledge and preparation for the technology use. Personal awareness of security is theorized to be the degree to which consumers accept that the

internet is secure for communicating personal and financial data for purposes of the transaction. Therefore, individuals who had no (or little) previous experience with online shopping, were more sensitive about providing their personal information but still choose online purchasing because of perceived higher health risk related to physical shopping.

We predict that factors like health consciousness and certain personal characteristics related to IT literacy (e.g., personal innovativeness, internet familiarity) as well as online purchasing-related factors may be used in the models even after the pandemics since they address newly disclosed aspects of online purchasing behaviour.

## LIMITATIONS AND FUTURE RESEARCH

The findings of the study disclosed novel aspects of the use of TAM and TPB during the COVID-19 pandemic. However, there are certain limitations of this study that offer directions for future research. First, the systematic literature review only includes articles and conference proceedings that are published in English. Future studies may seek to expand/confirm the results based on the primary data instead of using secondary data, which is inherent in systematic literature analysis. Also, as is evident with literature reviews, by the time of publication, it is common that some new articles that are relevant to the topic will keep being published. Therefore, periodical future systematic literature reviews on this topic are encouraged to map the accumulated and up-to-date knowledge. In addition, since this research was conducted on the Scopus and Web of Science databases, future studies may use a combination of different databases and keywords to search for new insights.

## FUNDING

## REFERENCES

Ajzen, I. (1991), „The theory of planned behavior", Organizational Behavior and Human Decision Processes", Vol. 50, No, 2, pp. 179-211.
Ajzen, I. (2012), „Martin Fishbein's legacy: the reasoned action approach", The Annals of the American Academy of Political and Social Science, Vol. 640, No.1, pp. 11-27.
Al-Qaysi, N., Mohamad-Nordin, N. and Al-Emran, M. (2020), „Employing the technology acceptance model in social media: A systematic review ", Education and Information Technologies, Vol. 25, pp. 4961-5002.
Asendia (2022), "E-commerce sales worldwide set to increase by 50% by 2025, reaching 7.5 trillion dollars", available at: https://www.asendia.com/asendia-insights/e-commerce-sales-worldwide-set-to-increase-by-50-by-2025 (accessed 3 February 2023).
Aveyard, H. (2007). Doing a Literature Review in Health and Social Care: A practical guide. Pennsylvania Plaza New York: McGrow Hill.

Aveyard, H. (2010). Doing a Literature Review in Health and Social Care: A practical guide. Pennsylvania Plaza New York: McGrow Hill.

Bermes A. (2021), "Information overload and fake news sharing: a transactional stress perspective exploring the mitigating role of consumers' resilience during COVID-19", Journal of Retailing and Consumer Studies, Vol. 61.

Bhati, N. S., Vijayvargy, L., and Pandey, A. (2022), "Role of E-Service Quality (E-SQ) on Customers' Online Buying Intention: An Extended Theory of Planned Behavior", IEEE Access, Vol. 10, pp. 77337-77350.

Camilleri, M. A., and Falzon, L. (2021), "Understanding motivations to use online streaming services: integrating the technology acceptance model (TAM) and the uses and gratifications theory (UGT)", Spanish Journal of Marketing-ESIC, Vol. 25, No. 2, pp. 217-238.

Chang, H. H., and Chen, S. W. (2008), "The impact of online store environment cues on purchase intention", Online Information Review, Vol. 32, No. 6, pp. 818-841.

Davis, F.D. (1986), A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results, Sloan School of Management, Massachusetts Institute of Technology.

Domina, T., Lee, S.-E., and MacGillivray, M. (2012), "Understanding factors affecting consumer intention to shop in a virtual world", Journal of Retailing and Consumer Services, Vol. 19, No. 6, pp. 613-620.

Eccles, J.S. (1987), "Gender Roles and Women's Achievement-Related Decisions", The Psychology of Women Quarterly, Vol. 11, pp. 135–172.

Faqih, K. M. S. (2016), "An empirical analysis of factors predicting the behavioral intention to adopt Internet shopping technology among non-shoppers in a developing country context: Does gender matter?", Journal of Retailing and Consumer Services, Vol. 30, pp. 140-164.

Furrer, O., Howard, T., and Goussevskaia, A. (2008), "The structure and evolution of the strategic management field: A content analysis of 26 years of strategic management research", International Journal of Management Reviews, Vol. 10, No. 1, pp. 1-23.

International Trade Administration (n.d.), "eCommerce Sales & Size Forecast", available at: https://www.trade.gov/ecommerce-sales-size-forecast (accessed 3 February 2023).

Hansen, T. (2008), „Consumer values, the theory of planned behaviour and online grocery shopping", International Journal of Consumer Studies, Vol. 32, pp. 128-137.

Hansson, L., Holmberg, U. and Post, A. (2022), „Reorganising grocery shopping practices – the case of elderly consumers", The International Review of Retail, Distribution and Consumer Research, Vol. 32, No. 4, pp. 351-369.

Giang, N. T. P., Han V.T.H., Anh D.T.N., and Duy N.B.P. (2022), „Factors Affecting the Intention to Buy Online During Covid-19: Electronic Devices in Southern Vietnam", Lecture Notes in Computer Science, pp. 18-34.

Kamal, S. A., Shafiq, M. and Kakria, P. (2020), „Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)", Technology in Society, Vol. 60.

Lee, J., Cerreto, F. A. and Lee, J (2010), „Theory of planned behavior and teachers' decisions regarding use of educational technology", Educational Technology & Society, Vol. 13, No. 1, pp. 152–164.

Lim, W.M. (2017), "Untangling the relationships between consumer characteristics, shopping values, and behavioral intention in online group buying", Journal of Strategic Marketing, Vol. 25, No. 7, pp. 547–566.

Mariani, M. M., Perez-Vega, R. and Wirtz, J. (2021), "AI in marketing, consumer research and psychology: A systematic literature review and research agenda", Psychology & Marketing, Vol. 39, No. 4, pp. 755-776.

Min, S., So, K. K. F. and Jeong, M. (2021), „Consumer adoption of the Uber mobile application: Insights from diffusion of innovation theory and technology acceptance model", Journal of Travel and Tourism Marketing, Vol. 36, No. 7, pp. 770-783.

Nguyen, C., Tran, D., Nguyen, A. and Nguyen, N. (2021), „The Effects of Perceived Risks on Food Purchase Intention: The Case Study of Online Shopping Channels during COVID-19 Pandemic in Vietnam"' Journal of Distribution Science, Vol. 19, No. 9, pp. 19-27.

Nguyen H.T., Hoang T.D.L., Nguyen H.K. (2022), "The shifting trend in online buyer's behaviour under the impact of COVID-19 pandemic in Vietnam", Transnational Marketing Journal, Vol. 10, No. 1, pp. 71-86.

Pantano, E., Pizzi, G., Scarpi, D. and Dennis, C. (2020), "Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak", Journal of Business Research, Vol. 116, pp. 209–213.

Pham, V. K., Thi, T. H. D. and Le, T. H. H. (2020), "A study on the COVID-19 awareness affecting the consumer perceived benefits of online shopping in Vietnam", Cogent Business & Management, Vol. 7, No. 1, pp. 1-16.

Pickering, C. and Byrne, J. (2014), "The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers", Higher Education Research & Development, Vol. 33, No. 3, pp. 534–548.

Posthuma, R.A. and Dworkin, J.B. (2000), „A behavioural theory of arbitrator acceptability", International Journal of Conflict Management, Vol. 11, pp. 249–266.

Primabudi, A. M. and Samopa, F. (2017), „Analysis of Factors Influencing Purchase Decision in Online Store. Case Study: Game Sales in Online Store", International Journal of Education and Research, Vol. 5, No. 7, pp. 277-288.

Rehman, S., Bhatti, A., Mohamed, R. and Ayoup, H. (2019), „The moderating role of trust and commitment between consumer purchase intention and online shopping behavior in the context of Pakistan". Journal of Global Entrepreneurship Research, Vol. 9, No. 1, pp. 1-25.

Taufik, D., Kunz, M. C. and Onwezen, M. C. (2021), "Changing consumer behaviour in virtual reality: A systematic literature review", Computers in Human Behavior Reports, Vol. 3.

Tranfield, D., Denyer, D. and Smart, P. (2003), "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", British Journal of Management, Vol. 14, No. 3, pp 207–222.

Toska A., Zeqiri J., Ramadani V. and Ribeiro-Navarrete S. (2022), „Covid-19 and consumers' online purchase intention among an older-aged group of Kosovo", International Journal of Emerging Markets, Vol. ahead-of-print No. ahead-of-print.

Sajid, S., Rashid, R. M. and Haider, W. (2022), „Changing Trends of Consumers' Online Buying Behavior During COVID-19 Pandemic with Moderating Role of Payment Mode and Gender", Frontiers in Psychology, Vol. 13.

Seetharaman, P. (2020), „Business models shifts: Impact of Covid-19", International Journal of Information Management, Vol. 54.

Sepulcri L.M.C.B., Mainardes E.W. and Marchiori, D.M. (2020), "Brand orientation: a systematic literature review and research agenda", Spanish Journal of Marketing - ESIC, Vol. 24, No. 1, pp. 97-114.

Seth, J. (2020), "Impact of Covid-19 on consumer behavior: Will the old habits return or die?", Journal of Business Research, Vol 117, pp. 280-283.

Shaw, N., Eschenbrenner, B. and Baier, D. (2022), "Online shopping continuance after COVID-19: A comparison of Canada, Germany and the United States", Journal of Retailing and Consumer Services, Vol. 69.

Shukla, A. and Sharma, S. K. (2018), „Evaluating consumers' adoption of mobile technology for grocery shopping: an application of technology acceptance model", Vision, Vol. 22, No.2, pp. 185-198.

Smaldone, F., D'Arco, M., Marino, V. and Pellicano, M. (2021), Let Thy Food Be Thy Medicine: Exploring the Impact of Covid-19 Pandemic on the Online Food Delivery Industry. In Research and Innovation Forum 2021: Managing Continuity, Innovation, and Change in the Post-Covid World: Technology, Politics and Society, pp. 383-392.

Trude, A. C. B., Ali, S. H., Lowery, C. M., Vedovato, G. M., Lloyd-Montgomery, J. M., Hager, E. R. and Black, M. M. (2022), "A click too far from fresh foods: A mixed methods comparison of online and in-store grocery behaviors among low-income households", Appetite, Vol. 175.

Vahdat, A., Alizadeh, A., Quach, S. and Hamelin, N. (2021), „Would you like to shop via mobile app technology? The technology acceptance model, social factors and purchase intention", Australasian Marketing Journal, Vol. 29, No. 2, pp. 187-197.

Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, F. D. (2003), „User Acceptance of Information Technology: Toward a Unified View", MIS Quarterly, Vol. 27, No. 3, pp. 425-478.

Venkatesh, V., Thong, J. Y. L. and Xu, X. (2012), „Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology", MIS Quarterly, Vol. 36, No. 1, pp. 157-178.

Yew, J. L. K., and Kamarulzaman, Y. (2020), „Effects of personal factors, perceived benefits and shopping orientation on online shopping behavior in Malaysia", International Journal of Economics, Management and Accounting, Vol. 28, No. 2, pp. 327–360.

Warganegara, D. L. and Hendijani, R. B. (2022), „Factors That Drive Actual Purchasing of Groceries through E-Commerce Platforms during COVID-19 in Indonesia", Sustainability, Vol. 14.

Widyanto H. A., Syahrivar J., Genoveva G. and Chairy C. (2022), „Intention to use Peer-to-Peer (P2P) Lending: The Roles of Perceived Structural Assurance and Perceived Critical Mass", Organizations and Markets in Emerging Economies, Vol. 13, No. 1, pp. 183-208.

# DIGITALIZATION AS DRIVER TO ACHIEVE CIRCULARITY IN THE AGROINDUSTRY: A SWOT-ANP-ADAM APPROACH

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## ABSTRACT

In the digital transformation era, technological innovations gave rise to process automation, networking and new methods of communication, producing at the same time a boost towards circular economy. This is evident in the agroindustrial enterprises where environmental impacts, losses and waste arise constantly along the whole supply chain.

This study provides recommendations aimed at leading the decisions of managers and entrepreneurs towards the adoption of digital technologies, in order to make agroindustrial enterprises more adherent to the principles of the circular economy.

A SWOT analysis was performed to assess the strengths and weaknesses (internal factors) and opportunities and threats (external factors) of digitalization in boosting circularity in agroindustry systems, identifying the critical factors (CFs) and strategical alternatives of management decisions. Through the Analytical Network Process (ANP) an evaluation of these CFs was provided while with ADAM method, a rank of the alternatives is carried out.

Results reveal a key role of digitalization in boosting circularity within agroindustrial enterprises, highlighting that several strategies of sustainability can be follow to gain a complete transition towards circular economy. Thereby, managers and entrepreneurs can direct their efforts to digitize or automate the agroindustry systems, developing focused investment plans aimed at achieving sustainability and circularity.

*Keywords: digit transformation, circular economy, multi-criteria decision-making, agrifood, entrepreneurship.*

## INTRODUCTION

Population growth, changing food consumption habits, and trade globalization made agroindustrial enterprises extremely complex and time-consuming (Katsikouli *et al.*, 2021) Since the world's

population is predicted to reach 8.6 billion in 2030 and 9.8 billion in 2050 (United Nations, 2021), food production would need to expand by 70% to meet demand (McGuire et al., 2022), necessitating more effective and transparent management.

In the agroindustrial enterprises, a large amount of losses is generated and this makes them one of the most important contributors to the worldwide wastage production (Fedorova *et al.*, 2019). In fact, one third of the edible food production is lost (Ishangulyyev *et al.*, 2019). In order to achieve entrepreneurial sustainability, the circular economy practices at the business level can allow waste reduction, maintaining the value of resources and products in the system (Zamfir *et al.*, 2017). Although the circular economy concept is a topic that is increasingly being discussed in enterprises and industries, officeholders are still struggling to put circular economy plans into practice (Singhal *et al.*, 2019). Therefore, efforts to promote entrepreneurial development in an alternative economy require a knowledge of an entrepreneur's motivation to participate in its plans (Colin David, 2020).

Digitalization of each process represents promising opportunity to pursue circularity in agroindustrial enterprises (Rejeb *et al.*, 2021). The most common used technologies for digital transition are blockchain technologies (Pakseresht *et al.*, 2022), Internet of Things (IoT) (Kazancoglu *et al.*, 2022), big data (Percin, 2022), Artificial Intelligence (AI) techniques (Khan *et al.*, 2022), and Cyber Physical Systems (CPS) (Chen, 2018). Since digitalization is spreading across agroindustry systems, it could certainly affect their ability to achieve circularity. In this regard, the agroindustry must face with some pertinent challenges. Among them, costly data management platforms, scarce financial resources, expensive energy consumption for computing power represent the most significant environmental and economic critical factors for sustainable digitalization of the agroindustrial enterprises (Amentae and Gebresenbet, 2021). The understanding of technical devices, the skill level of the workforce, and the respect for privacy in relation to data management represent social and legal challenges (Nurgazina *et al.*, 2021).

In this study, a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis is performed to identify the most CFs and strategical alternatives which can boost the circularity of agroindustrial enterprises. Through the Analytical Network Process (ANP) an assessment of these CFs was provided, and the final ADAM method allow to highlight the best strategical alternative that can help entrepreneurs to achieve the goal of circularity. As preliminary hypothesis, strength factors might be seen as the most important drivers of digitization in terms of fostering circularity within the agroindustry. On the other side, the alternative that provides rewards (as economical incentives) for companies that pursue the principles of circularity could be the best.

The reminder of the study is as follow. In the following section the applied methodology is developed and explained. Afterwards the main findings of the study are highlighted. Next section shows the discussion while in the final section the conclusions are presented.

## RESEARCH METHODOLOGY

In this study, an integrated SWOT-ANP-ADAM analysis is performed to accomplish the set objective. Through SWOT analysis, CFs related to the contribution of the digitalization in boosting circularity in agroindustrial enterprises and its strategical alternatives are identified. CFs are weighted and ranked through the ANP analysis, considering both inner and outer dependences among the CFs. Finally, a priority determination of the alternatives is performed through the ADAM method. The methodologic framework is provided in Figure 1. In the following sections, SWOT analysis, the quantitative ANP analysis, and ADAM method are explained.
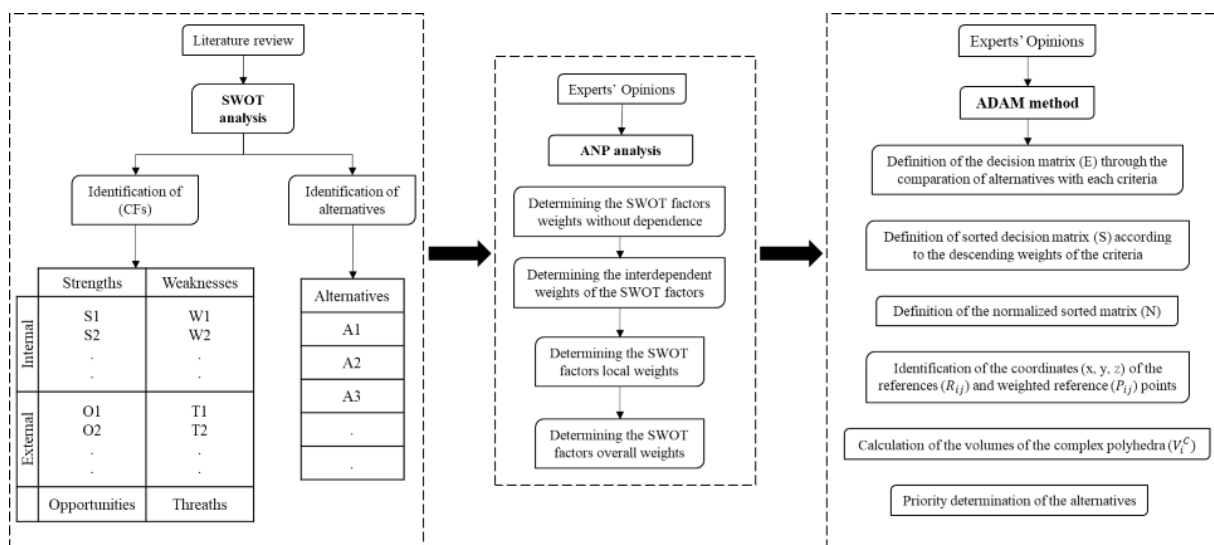


*SWOT analysis*

In this work, a SWOT analysis is modelled in order to put in evidence the CFs of digitalization that has influence on the circularity of the agroindustry supply chain and to identify the alternatives that can better exploit the strengths and opportunities, eliminate the weaknesses and counter the threats (Ervural *et al.*, 2018).

The identification of CFs and strategic alternatives is carried out through an accurate literature review on the specific objective. However, this preliminary phase can be also performed by a skilled panel of researchers and stakeholders (Treves *et al*, 2020). The identified CFs are divided into internal factors (i.e., strengths and weaknesses) and potential external factors that might emerge in the future (i.e., opportunities and threats). This classification allows to build a 4-quadrants matrix.

*ANP analysis*

The Analytic Network Process (ANP) is one of the most popular methods of multicriteria decision making (MCDM). ANP generalizes the Analytic Hierarchical Process (AHP) by replacing hierarchies with networks (Chung *et al.*, 2005). In the ANP the relations between the groups (Strengths, Weaknesses, Opportunities, and Threats) and CFs of each group (S1, …, Sn, W1, …, Wn, O1, …, On, T1, …, Tn) are hierarchical and there is a bidirectional inner and outer relation between elements (Eriş *et al.*, 2022). The main stage in an ANP is the creation of the model network that accurately depicts the decision-making problem to be addressed. The main steps of the ANP process carried out in this study are listed below.

Step 1. The first step of the ANP analysis is to establish the existing dependencies between each CF identified through SWOT analysis. These network relations allow to build the influential supermatrix which has dimension 21x21. Each element $m_{ij}$ of this matrix is filled with 1 or 0 values, where 1 meaning that the $i-th$ CF is influenced by $j-th$ CF.

Step 2. After building the influential supermatrix, the same panel of panel of experts which identified the SWOT, expressed the influence of each CF over each other by using a Saaty's scale (from 1 to 9). By using the AHP method, the weight of each CF was calculated and as result, the so-called unweighted supermatrix is obtained.

| Scale | Explanation Scale |
|---|---|
| 1 | Equal important |
| 3 | Moderately more important |
| 5 | Strongly more important |
| 7 | Very strongly more important |
| 9 | Enormously more important |
| 2,4,6,8 | Intermediate values |
| 1, 1/2 ,1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9 | First factor less relevant than the second one |

Table 1. Saaty's scale of relative importance

Step 3. To make unweighted supermatrix stochastic, the weight of each CF is multiplied by the weight of each group (Strengths, Weaknesses, Opportunities, and Threats), also obtained by using AHP method. The resulting stochastic supermatrix was a weighted supermatrix.

Step 4. The stochastic weighted supermatrix was raised to successive powers until its entries converge and remain stable. Such matrix is called the limiting supermatrix and contains the desired CFs weights which allow for their final rating.
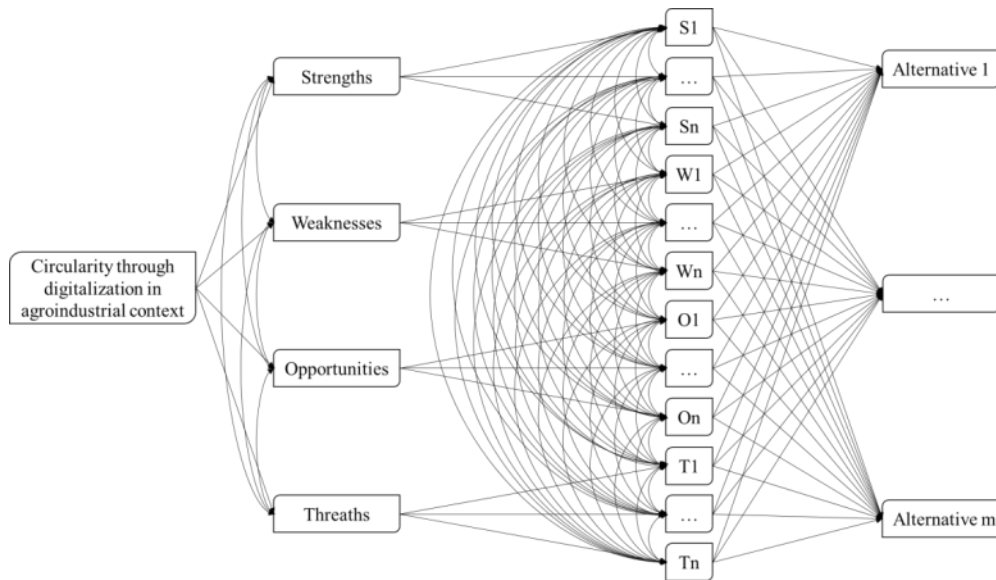
Figure 2. Structure of the ANP model built for this study.

*Axial Distance-based Aggregated Measurement – ADAM Method*

ADAM method represents a new class of MCDM techniques, known as geometric MCDM (Krstić and Kovač, 2023). This approach rates alternatives by computing the volumes of complex polyhedra made up of points (vertices) in a three-dimensional coordinate system as an aggregate measurement. Each point belongs to one of three classes: coordinate origin (O), reference points (R), weighted reference points (P). The coordinate origin is a coordinate point (0,0,0). Reference points in the x-y plane are points with the coordinates (x,y,0) that establish the value of the alternative based on CFs such the point's axial distance from the coordinate origin. The weighted reference points have coordinates (x,y,z), where the coordinate z is used to obtain the axial distance of the weighted reference point from the x-y plane. These distances correspond to the weights of the CFs. A complex polyhedron volume can be calculated by summarizing the volumes of the m polyhedral (where m is the number of alternatives), by defining all the points that define it. According to the decreasing values of the obtained volumes of complex polyhedra, the final order of alternatives is determined. The step-procedure of this approach is given as follows.

Step 1: Define the decision matrix $E$, elements of which are evaluations $e_{ij}$ of the alternatives $i$ (A1, …, Am) in relation to CFs $j$ (S1, …, Sn, W1, …, Wn, O1, …, On, T1, …, Tn), i.e., vector magnitudes which correspond to the evaluations of the alternatives in relation to the CF:

$$E = \left[e_{ij}\right]_{mxl} \tag{1}$$

where $m$ is the total number of alternatives and $l$ is the total number of CFs.

Step 2: Define the sorted decision matrix $S$, in which the evaluations eij are sorted in the descending order according to the importance (weight) of the CFs:

$$S = [s_{ij}]_{mxl} \tag{2}$$

Step 3: Definition of the normalized sorted matrix N, in which the elements $n_{ij}$ are normalized as:

$$n_{ij} = \frac{s_{ij}}{s_{ij}} \tag{3}$$

Step 4: Find the coordinates (x,y,z) of the reference ($R_{ij}$) and weighted reference ($P_{ij}$) points that define the complex polyhedron in the following way:

$$x_{ij} = n_{ij} \times sin\,sin\,\alpha_j \,, \forall j = 1, \ldots, l; \; \forall i = 1, \ldots, m, \tag{4}$$

$$y_{ij} = n_{ij} \times cos\,cos\,\alpha_j \,, \forall j = 1, \ldots, l; \; \forall i = 1, \ldots, m, \tag{5}$$

$$z_{ij} = \{0, for\,R_{ij}\,w_j, for\,P_{ij} \,, \forall j = 1, \ldots, l; \; \forall i = 1, \ldots, m, \tag{6}$$

where $w_j$ is the CF weight and $\alpha_j$ is the angle that determines the direction of the vector that defines the value of the alternative.

Step 5: Find the volumes of complex polyhedra $V_i^C$ as the sum of the volumes of the pyramids $V_k$ of which it is composed using the following equation:

$$V_i^C = \sum_{k=1}^{n-1} V_k, \forall i = 1, \ldots, m \tag{8}$$

Step 6: Rank the alternatives according to the decreasing values of the volumes of complex polyhedra $V_i^C$ $(i = 1, \ldots, m)$. The best alternative is the one with the highest volume value.

## RESULTS

*SWOT results*

To highlight the most CFs of digitalization that affect the circularity in the agroindustry and the best strategies that can promote its reaching, a SWOT analysis is performed. Through a literature review of this specific field, strengths, weaknesses, opportunities, threats and strategical alternatives are identified.

| Internal Factors | |
|---|---|
| Strengths | Weaknesses |
| (S1) Digitalization and its infrastructures support workers to prevent food waste and loss across the entire agroindustry supply chain (Ouro-Salim and Guarnieri, 2022). | (W1) The adoption of new technologies is costly (Alesiuniene et al., 2021). |
| (S2) Digitalization promotes the reallocation and food sharing (Davies, 2017). | (W2) Digitalization of agroindustry supply chains requires a large amount of data (Al Kez, D. et al., 2022). |
| (S3) Digitalization improves process efficiency as well as productivity, performance, and profitability (Abbate et al., 2023). | (W3) The diffusion of digitalization implies less manpower causing job losses in the agroindustry supply chain (Grybauskas et al., 2022). |
| (S4) The digitalization of agroindustry offers real-time data on performance that accelerate innovation (Ehie and Ferreira, 2019). | (W4) Digitalization of agroindustry supply chain is exposed to prejudices, discrimination, lack of transparency and violation of the privacy (Autio, 2021). |

| | |
|---|---|
| (S5) Industry 4.0 technologies allow for more nutritious and sustainable novel foods (Escalante-Aburto et al., 2021). | (W5) Digital solutions are energy intensive due to the use of devices (Sahebi et al., 2020). |

**External Factors**

| Opportunities | Threats |
|---|---|
| (O1) Digitalization and nanotechnology allow to improve packaging, increasing food shelf life (Cruz and Varzakas, 2023). | (T1) Insufficient digital awareness and lack of skilled digital staff can reduce the security and increase risks (Cheung et al., 2021). |
| (O2) The information and services provided by digital platforms can decrease mistrusts and improve traceability (Zhou et al., 2022). | (T2) Digitalization can increase inequality caused by different level of accessibility to technologies (Stavropoulos et al., 2023). |
| (O3) Digitalization can improve direct communication between producers and customers (Bigliardi et al., 2022). | (T3) The digitization of the agroindustry supply chain could lead to the monopolization of data by the largest players in the market (Sodano, 2021). |
| (O4) Digitalization decreases response time and improves resilience of agroindustry supply chain (Khan et al., 2022). | (T4) Digitalization implies the production of large amount of Electrical and electronic waste (WEEE) (Jian et al., 2019). |
| (O5) Digitalization can be supported by national plans and government strategies. | (T5) The digitalization can cause disruption in the legislation and regulation observation. |
| | (T6) Digitalization can provoke the resistance of unskilled workers (Rotz et al., 2019). |

**Strategical alternatives**

(A1) Digitalization improves process efficiency as well as productivity, performance, and profitability

(A2) Increasing recycled content in packaging and food contact materials, while ensuring their performance and the product safety

(A3) Enabling remanufacturing and high-quality recycling

(A4) Reducing carbon and environmental footprints

(A5) Incentivizing models in which producers keep the ownership of the product or the responsibility for its performance throughout its lifecycle

(A6) Mobilizing the potential of digitalization of product information, including solution such as digital passports, tagging and watermarks

(A7) Rewarding products based on their different sustainability performance, including by linking high performance levels to incentives

(A8) Restricting single use of food contact materials (FCMs) and countering their premature obsolescence

Table 2. SWOT analysis results

*Alternatives*

Building on the potential of digital technologies, the circular economy can foster business creation and entrepreneurship among small and medium enterprises (SMEs). Innovative models based on a closer relationship with customers and powered by digital technologies, such as the Internet of Things (IoT), big data, blockchain and artificial intelligence, will accelerate circularity. The circular economy will provide to consumers higher quality and safer products, which are designed for more efficient recycling. According to Circular Economy Action Plan[1] elaborated by European Commission, 8 strategical alternatives have been defined in order to pursue circularity in agroindustry supply chain (Table 2).

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[1] European Union, Bruxell, March 2020 (https://eur-lex.europa.eu/resource.html?uri=cellar:9903b325-6388-11ea-b735-01aa75ed71a1.0017.02/DOC_1&format=PDF)

The alternative A1 is "Improving product shelf-life and increasing their energy and resource efficiency". The term "food shelf life" refers to the time duration of the food, throughout which the food quality and its nutrients stay intact, fresh, and safe to consume (Vasile and Baican, 2021). Several processing methods can improve the food shelf life, i.e., pasteurization, sterilization, fermentation. However, also packaging represent an important phase in the food quality preservation (Brockgreitens and Abbas, 2016). A well-designed food packaging has the potential to extend the shelf life of food products while ensuring their quality and safety (Fadiji *et al*., 2023). Furthermore, A1 propose a circularity strategy to prevent the abuse of energy and materials, by recycling and reusing waste as resources (Omolayo *et al.*, 2021). Closely linked to A1 is the alternative A2 – "Increasing recycled content in packaging and food contact materials, while ensuring their performance and the product safety". According to Stark and Matuana (2021), packaging plays a key role in avoiding food loss and waste as well as in lowering the amount of energy needed to the transportation and delivery of food products. Given the large amount of waste materials resulting from the packaging and food contact material industry, new strategies for a circular economy are being pursued, in which both of them will be more sustainable. A boost for the A2 is given by A3, based on the potential of the new technologies to pursuing a high-quality recycling of products related to agroindustrial systems. The A4 focuses on the reduction of the food industry's carbon and environmental footprints, which are estimates of the energy consumption and greenhouse gas (GHG) emissions associated with the processing, delivery, and disposal of food products to consumers (Naresh Kumar and Chakabarti, 2019). Another important strategy of circularity in agroindustry supply chain involves the concept of ownership. In the circular economy, the producer retains ownership of the product, and customers only pay for their use through product-as-service model (alternative A5). In this way, the producers are encouraged to revalue the product when it ends its lifecycle, becoming a new resource. Alternative A6 is related to the "digitalization of product information, including solution such as digital passports, tagging and watermarks" in order to provide consumers with trustworthy and relevant information on products, enhancing their participation in circular economy (Purcărea *et al.*, 2022). Alternative A7 is focused on rewarding products according to their different sustainability performance. Correlated to high performance level, the reward could be represented by economic incentives. The last identified strategical alternative A8 is focused on the limitation of FCMs single use. The FCMs industry generates a large amount of waste. Regulation on responsible usage of these product can lead agroindustry supply chain to more sustainable model of circularity.

*ANP results*

Through ANP analysis, the inner and outer dependences between the groups and their factors evaluated by the DMs are considered. In order to perform the ANP analysis, the software SuperDecision is used.

After the definition of the structure model, through the AHP method the influences of each element included in each group are considered, obtaining the unweighted supermatrix. This matrix was multiplied by the weight of each group (Table 3) , again obtained by using AHP method, resulting in the weighted supermatrix. By raising the weighted supermatrix to successive powers until its entries convergence, the limiting supermatrix was obtained. This limiting supermatrix contains the criteria weights and their final rating was carried out. The results included in the limiting supermatrix are shown in Table 4.

| Group | Weights | Rank |
|---|---|---|
| Strengths | 0,4256 | 1 |
| Weaknesses | 0,3217 | 2 |
| Opportunities | 0,1419 | 3 |
| Threats | 0,1109 | 4 |

Table 3. Weights and ranking of groups obtained through the ANP analysis

| Critical factor | Weights | Rank | Critical factor | Weights | Rank |
|---|---|---|---|---|---|
| S1 | 0,0866 | 4 | O1 | 0,0327 | 9 |
| S2 | 0,0495 | 7 | O2 | 0,0289 | 11 |
| S3 | 0,2032 | 1 | O3 | 0,0282 | 12 |
| S4 | 0,0578 | 5 | O4 | 0,0357 | 8 |
| S5 | 0,0315 | 10 | O5 | 0,0174 | 18 |
| W1 | 0,1369 | 2 | T1 | 0,0199 | 16 |
| W2 | 0,0903 | 3 | T2 | 0,0206 | 15 |
| W3 | 0,0245 | 14 | T3 | 0,0197 | 17 |
| W4 | 0,0172 | 19 | T4 | 0,0281 | 13 |
| W5 | 0,0522 | 6 | T5 | 0,0136 | 20 |
|  |  |  | T6 | 0,0058 | 21 |

Table 4. Weights and ranking of CFs obtained through the ANP analysis.

As can be noted, "strengths" is the most influential group. This highlights that circularity of agroindustry supply chain is positively influenced by digitalization.

The S1 is the most crucial factor of the SWOT analysis. However, W1 and W2 are the second and third aspects of overall priority, respectively. This means that, even though digitization might be thought of as a necessary tool to achieve circularity, it also conceals some crucial elements that impede its development.

*ADAM results*

In order to reveal the best alternative to achieve circularity through digitalization in agroindustry supply chain, by applying the ADAM model, the DMs were asked to evaluate the criteria and

alternatives using the Saaty's scale. For their evaluations, a mean synthetic value is considered for each comparation. Complex polyhedra defined by the reference and weighted reference points are presented in Figure 6. Their volumes are then obtained using the ADAM software package developed by Krstić and Kovač (2023), which is available online. The alternatives are finally ranked by arranging them in the descending order by the values of the corresponding polyhedron volumes. The obtained volumes are presented in Table 5. The results reveal that alternative A7 represents the best strategy (volume of polyhedral equals to 0,0171) to follow in order to shift enterprises from traditional to circular economy. This highlights that economical incentives based on sustainability performance assume a fundamental role for entrepreneurs. The second ranked alternative (0,0157) is represented by the strategy A6 in which the transfer of product information to consumers through digital passports, tagging and watermarks became relevant. This highlights how the awareness of consumers on the theme of sustainability can boost the enterprises transition to circularity. The first two alternatives show the need of cooperation among businesses, government and consumers to reach the set goal. On the third place, the strategical alternative A3 (0,0153) highlights that enabling remanufacturing and high-quality recycling exploiting new technologies could accelerate the transition towards circularity. Alternative A4 (0,0149) related to reduction of carbon and environmental footprints is ranked fourth. The fifth ranked strategy is the A1 (0,0141) that suggest improving product shelf-life and increasing their energy and resource efficiency. The last three ranked alternatives are respectively A5 (0,0135), A2 (0,0104) and A8 (0,0098).

| Alternatives | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 |
|---|---|---|---|---|---|---|---|---|
| Volume | 0,0141 | 0,0104 | 0,0153 | 0,0149 | 0,0135 | 0,0157 | 0,0171 | 0,0098 |
| Rank | 5 | 7 | 3 | 4 | 6 | 2 | 1 | 8 |

Table 5. Volumes of the complex polyhedra and ranking of the alternatives
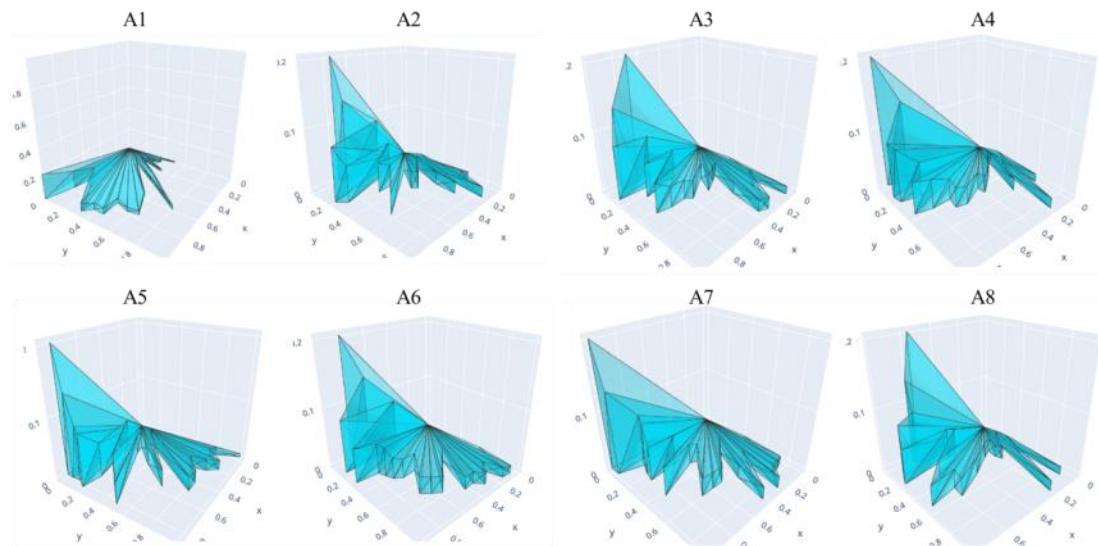
Figure 3. Complex polyhedra for the defined alternatives

## DISCUSSION

In this work, SWOT analysis allows to select CFs related to the contribution of digitalization in boosting circularity in the agroindustrial enterprises. In addition, it allows to establish a set of strategical alternatives, identified taking into account the main circularity principles. The ANP analysis is performed to assess quantitatively the CFs obtained with SWOT analysis, considering both the inner and outer dependences between groups and factors. The combined SWOT–ANP method allow to rank the CFs, prioritizing the strengths, weaknesses, opportunities, and threats in the investigated context. In particular, it highlights that the implementation of digitalization is mostly affected by internal factors, such as strengths and weaknesses, rather than external factors, such as opportunities and threats. The ADAM method, instead, is used to evaluate the best alternative, basing on the weights of the factors obtained with the previous ANP analysis.

The results of this work can have practical implications, as they provide a guideline for entrepreneurs on what they should consider relevant enterprises to shift their agroindustrial enterprises from traditional to circular economy. The findings of these research can be exploited to take fully advantage by the implementation of digitalization in the agroindustrial context. By analyzing the alternatives rank, they can comprehend which strategy should be followed to reach the set goal. The first ranked alternative is A7, denoting the need to support the sustainable production and the shifting towards circularity with economic incentives. On the other side, a greater inclusion and awareness of consumers in the business dynamics assume a key role in make enterprises more circular. This is confirmed by the second ranked alternative A6, that boosts to mobilize the potential of digitalization of product information, including solution such as digital passports, tagging and watermarks. The last

place on the podium of alternatives provided by the ADAM method is assumed by the A3 in which a transition towards circularity can be obtained by enabling remanufacturing and high-quality recycling in agroindustrial enterprises.

## CONCLUSIONS

The main goal of this study was to identify the best strategical alternative which better can boost the achieving of circularity through digitalization in agroindustrial enterprises. Eight strategies aimed to reach the set goal are identify in this study. They are evaluated in regard to the 21 CFs highlighted through a SWOT analysis performed on the available literature. To solve the defined problem a hybrid MCDM method, which combines the SWOT, ANP and ADAM methods is performed. The alternative A7 which consists in "rewarding products based on their different sustainability performance, including by linking high performance levels to incentives" results the most efficient to make the agroindustrial enterprises more circular.

The main contributions of this study in the context of circularity in agroindustrial and food sector is the development of the different strategical alternatives, as well as the framework for their evaluation and ranking. This study also contributes to the body of literature dealing with MCDM through the development of the novel hybrid MCDM model. In the end, this study provides a guideline on how entrepreneurs might be generating start-ups inside the circular economy practices or the way to switch their system from traditional to circular economy.

The main limitation of this study is related to the experts' objectivity because their evaluation could affect the results. Another important limitation is related to the contained dimension of the panel of experts that provided the assessing for the performed AHP analysis.

Future research efforts could be aimed at the upgrade of the defined alternatives or the development of new ones, by taking into account the new European directives in terms of sustainability principles. The newly defined MCDM model could be employed in some future study to solve different MCDM problems in this or any other domain.

## REFERENCES

Abbate, S., Centobelli, P., & Cerchione, R. (2023). The digital and sustainable transition of the agri-food sector. Technological Forecasting and Social Change, 187, 122222.
Al Kez, D., Foley, A. M., Laverty, D., Del Rio, D. F., & Sovacool, B. (2022). Exploring the sustainability challenges facing digitalization and internet data centers. Journal of Cleaner Production, 371, 133633.
Autio, E. Leveraging data in organizational decision making (2021).
Bigliardi, B., Filippelli, S., Petroni, A., & Tagliente, L. (2022). The digitalization of supply chain: a review. Procedia Computer Science, 200, 1806-1815.
Chen, R. Y. (2018). Intelligent predictive food traceability cyber physical system in agriculture food supply chain. In Journal of Physics: Conference Series (Vol. 1026, No. 1, p. 012017). IOP Publishing.

Cheung, K. F., Bell, M. G., & Bhattacharjya, J. (2021). Cybersecurity in logistics and supply chain management: An overview and future research directions. Transportation Research Part E: Logistics and Transportation Review, 146, 102217.

Chung, S. H., Lee, A. H., & Pearn, W. L. (2005). Product mix optimization for semiconductor manufacturing based on AHP and ANP analysis. The International Journal of Advanced Manufacturing Technology, 25, 1144-1156.

Colin David, R. (2020) 'Entrepreneurial Motivation to Participate in the Circular Economy'. In: Neeta, B. (ed.) Handbook of Research on Entrepreneurship Development and Opportunities in Circular Economy. Hershey, PA, USA: IGI Global, pp. 271-283.

Cruz, R. M., & Varzakas, T. (2023). Frontiers on Sustainable Food Packaging. Foods, 12(2), 349.

Davies, A. R., Edwards, F., Marovelli, B., Morrow, O., Rut, M., & Weymes, M. (2017). Making visible: Interrogating the performance of food sharing across 100 urban areas. Geoforum, 86, 136-149.

Ehie, I., & Ferreira, L. M. D. (2019). Conceptual development of supply chain digitalization framework. IFAC-PapersOnLine, 52(13), 2338-2342.

Eriş, M. B., Sezer, E. D. G., & Ocak, Z. (2022). Prioritization of the factors affecting the performance of clinical laboratories using the AHP and ANP techniques. Network Modeling Analysis in Health Informatics and Bioinformatics, 12(1), 5.

Ervural, B. C., Zaim, S., Demirel, O. F., Aydin, Z., & Delen, D. (2018). An ANP and fuzzy TOPSIS-based SWOT analysis for Turkey's energy planning. Renewable and Sustainable Energy Reviews, 82, 1538-1550.

Escalante-Aburto, A., Trujillo-de Santiago, G., Álvarez, M. M., & Chuck-Hernández, C. (2021). Advances and prospective applications of 3D food printing for health improvement and personalized nutrition. Comprehensive Reviews in Food Science and Food Safety, 20(6), 5722-5741.

Fadiji, T., Rashvand, M., Daramola, M. O., & Iwarere, S. A. (2023). A Review on Antimicrobial Packaging for Extending the Shelf Life of Food. Processes, 11(2), 590.

Fedorova, N. V., Kukartsev, V. V., Tynchenko, V. S., Nikiforova, C. E., Sadovskiy, I. D., & Ogol, A. R. (2019). Analysis of the agroindustrial enterprise competitive strategy tools. In IOP Conference Series: Earth and Environmental Science (Vol. 315, No. 2, p. 022104). IOP Publishing.

Grybauskas, A., Stefanini, A., & Ghobakhloo, M. (2022). Social sustainability in the age of digitalization: A systematic literature review on the social implications of industry 4.0. Technology in Society, 101997.

Ishangulyyev, R., Kim, S., & Lee, S. H. (2019). Understanding food loss and waste—why are we losing and wasting food?. Foods, 8(8), 297.

Jian, H., Xu, M., & Zhou, L. (2019). Collaborative collection effort strategies based on the "Internet+ recycling" business model. Journal of Cleaner Production, 241, 118120.

Katsikouli, P., Wilde, A. S., Dragoni, N., & Høgh-Jensen, H. (2021). On the benefits and challenges of blockchains for managing food supply chains. Journal of the Science of Food and Agriculture, 101(6), 2175-2181.

Kazancoglu, Y., Ozbiltekin-Pala, M., Sezer, M. D., Kumar, A., & Luthra, S. (2022). Circular dairy supply chain management through Internet of Things-enabled technologies. Environmental Science and Pollution Research, 1-13.

Khan, S. A. R., Razzaq, A., Yu, Z., Shah, A., Sharif, A., & Janjua, L. (2022). Disruption in food supply chain and undernourishment challenges: An empirical study in the context of Asian countries. Socio-Economic Planning Sciences, 82, 101033.

Khan, S. A. R., Umar, M., Muhammad Zia-ul-haq, H., & Yu, Z. (2022). Technological Advancement and Circular Economy Practices in Food Supply Chain. In Agri-Food 4.0. Emerald Publishing Limited.

Krstić, M.; Kovač, M. (accessed on 6 February 2023). Axial Distance-based Aggregated Measurement (ADAM) MCDM software available at: http://adam-mcdm.com/

Naresh Kumar, S., & Chakabarti, B. (2019). Energy and carbon footprint of food industry. Energy footprints of the food and textile sectors, 19-44.

Nurgazina, J., Pakdeetrakulwong, U., Moser, T., & Reiner, G. (2021). Distributed ledger technology applications in food supply chains: A review of challenges and future research directions. Sustainability, 13(8), 4206.

Omolayo, Y., Feingold, B. J., Neff, R. A., & Romeiko, X. X. (2021). Life cycle assessment of food loss and waste in the food supply chain. Resources, Conservation and Recycling, 164, 105119.

Ouro-Salim, O., & Guarnieri, P. (2022). Circular economy of waste in agrifood supply chain: A review.

Pakseresht, A., Ahmadi Kaliji, S., & Xhakollari, V. (2022). How Blockchain Facilitates the Transition toward Circular Economy in the Food Chain?. Sustainability, 14(18), 11754.

Percin, S. (2022). Evaluating the circular economy–based big data analytics capabilities of circular agri-food supply chains: the context of Turkey. Environmental Science and Pollution Research, 29(55), 83220-83233.

Purcărea, T., Ioan-Franc, V., Ionescu, Ş. A., Purcărea, I. M., Purcărea, V. L., Purcărea, I., ... & Orzan, A. O. (2022). Major Shifts in Sustainable Consumer Behavior in Romania and Retailers' Priorities in Agilely Adapting to It. Sustainability, 14(3), 1627.

Rejeb, A., Rejeb, K., Abdollahi, A., Zailani, S., Iranmanesh, M., & Ghobakhloo, M. (2021). Digitalization in food supply chains: A bibliometric review and key-route main path analysis. Sustainability, 14(1), 83.

Rotz, S., Gravely, E., Mosby, I., Duncan, E., Finnis, E., Horgan, M., ... & Fraser, E. (2019). Automated pastures and the digital divide: How agricultural technologies are shaping labour and rural communities. Journal of Rural Studies, 68, 112-122.

Sahebi, I. G., Masoomi, B., & Ghorbani, S. (2020). Expert oriented approach for analyzing the blockchain adoption barriers in humanitarian supply chain. Technology in Society, 63, 101427.

Salminen, V., Ruohomaa, H., & Kantola, J. (2017). Digitalization and big data supporting responsible business co-evolution. In Advances in human factors, business management, training and education (pp. 1055-1067). Springer, Cham.

Singhal, D., Tripathy, S. and Jena Sarat, K. (2019) 'Acceptance of remanufactured products in the circular economy: an empirical study in India'. Management Decision, 57 (4), pp. 953-970.

Sodano, V. (2021).Tailored Digitization for Rural Development. Engineering Proceedings, 9(1), 14.

Stark, N. M., & Matuana, L. M. (2021). Trends in sustainable biobased packaging materials: A mini review. Materials Today Sustainability, 15, 100084.

Stavropoulos, P., Papacharalampopoulos, A., Sabatakakis, K., & Mourtzis, D. (2023). Metamodelling of Manufacturing Processes and Automation Workflows towards Designing and Operating Digital Twins. Applied Sciences, 13(3), 1945.

Treves, A., Bottero, M., Caprioli, C., & Comino, E. (2020). The reintroduction of Castor fiber in Piedmont (Italy): An integrated SWOT-spatial multicriteria based approach for the analysis of suitability scenarios. Ecological Indicators, 118, 106748.

United Nations (2021). The Sustainable Development Goals Report 2021. Available at:

Vasile, C., & Baican, M. (2021). Progresses in food packaging, food quality, and safety—controlled-release antioxidant and/or antimicrobial packaging. Molecules, 26(5), 1263.

Zamfir, A.-M., Mocanu, C. and Grigorescu, A. (2017) 'Circular Economy and Decision Models among European SMEs'. 9 (9), pp. 1507.

Zhou, X., Pullman, M., & Xu, Z. (2022). The impact of food supply chain traceability on sustainability performance. Operations Management Research, 15(1-2), 93-115.

McGuire, R., Williams, P. N., Smith, P., McGrath, S. P., Curry, D., Donnison, I., ... & Scollan, N. (2022). Potential Co-benefits and trade-offs between improved soil management, climate change mitigation and agri-food productivity. Food and Energy Security, 11(2), e352.

Amentae, T. K., & Gebresenbet, G. (2021). Digitalization and future agro-food supply chain management: A literature-based implications. Sustainability, 13(21), 12181.

Brockgreitens, J., & Abbas, A. (2016). Responsive food packaging: Recent progress and technological prospects. Comprehensive Reviews in Food Science and Food Safety, 15(1), 3-15.

# E-MOBILITY AND BRAND PERCEIVED QUALITY

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## ABSTRACT

The uptake of electric vehicles (EVs) is reshaping the automotive industry. Existing car manufacturers are electrifying their lineups to be in line with the decision of governments to ban the sale of CO2-emitting cars in the next years. At the same time, new firms specialized only in the EV production enter the markets undermining the established positions of incumbents. On the demand side, consumers are put in front a new technology, which is still limited by unsolved technical issues, and new manufacturers. In this context, the role of brand could acquires a greater relevance than before in the market. Using two sample of Italian and Swedish EV users, this work performs a coviarance-based Structural Equation Modeling (SEM) to investigate the mediate effect of brand reputation between self-expressive value and perceived quality. Results shows that self-expressive value affects significantly and positively the perceived quality. Subsequently, the work verifies that the brand reputation construct, which has been added in the model, explains the relationship between self-expressive value and perceived quality and, therefore, can be considered a mediator.

*Keywords: e-mobility; sustainable mobility; brand perceived quality; brand reputation; self-expressive value; automotive industry.*

## INTRODUCTION

E-mobility, which refers to the concept of using electric powertrain technologies for vehicles (Gartner, n.d.), is considered fundamental to reduce greenhouse gas (GHG) emissions (Biresselioglu et al., 2018). Electric vehicles (EV) can be fully or partially powered by electric engine. Battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) are plug-in vehicles. BEVs are completely electric and the energy is stored in batteries, which are charged by an external source of energy. Instead, PHEVs have both an internal combustion engine and an electric motor, which is charged by an external source of energy. Unlike BEVs and PHEVs, hybrid electric vehicles (HEV) have an the electric engine, which support the conventional propulsion in starting and accelerating and it is charged by regenerative breaking (Ghosh, 2020).

Plug-in vehicles - BEVs and PHEVs - have been catching the interest of scholars who have been investigating factors affecting their diffusion. Despite the worldwide increase in sales over the years, EVs are still a small percentage of global vehicles. There are 25.900.000 of BEVs and PHEVs in worldwide in 2022 (IEA, 2023). According to scholars, infrastructural, technical and economic barriers slow down the uptake of these vehicles (Rezvani et al., 2015; Biresselioglu et al., 2018). However, governments are increasingly pushing their uptake. In February 2023, the EU Parliament voted to ban the sale of all cars emitting GHGs by 2035 and, at the same time, several member states of USA are banning conventional cars.

In this context, traditional car manufacturers must replace their conventional cars with EVs and they must plan the production of only BEVs in the future. At the same time, the electrification of the product line takes shape as a radical innovation capable of attracting new manufacturers such as Tesla and several Chinese brands. New entrants have the advantages to be specialized in producing EVs since the offset and, as done by Tesla, to influence consumers to perceive EVs as innovative, stylish, and sustainable. However, new entrants could suffer a less brand power than incumbents (Long et al., 2019; Bocconi Students Investment Club, 2021).

Brands play a relevant role in the automotive industry. Indeed, vehicles are high-involvement products and their quality is difficult to appreciate before the purchase. Furthermore, consumers use cars to express their identity, beliefs and values. (Heffner et al., 2009; Muhlbacher et al., 2016; Long et al., 2019).

However, literature about e-mobility market overlooks the role of brand. Literature focuses mainly on factors influencing the consumers' EV purchase intention and, in a much smaller extent, their customer satisfaction. Among several factors, scholars highlighted that value, beliefs, opinions and usage motivations characterize the EV consumption (Wang et al., 2016; Mohamed et al., 2016; Okada et al., 2019).

In the e-mobility market, brands could still play a relevant role. E-mobility has put consumers in front of a disruptive technology, which they considered even capable of improving sustainability and quality of life, yet still affected by several unsolved technical issues and (Augurio et al., 2022).

In addition to the consideration concerning the role of psychological factors in the EV consumption, the adoption of a new technology suggest to deepen the role of perception quality, which can is in turn fundamental to affects brand loyalty (Alhaddad, 2015). Perceived quality is the consumers' judgment about an entity's services containing overall excellence or superiority (Zeithmail, 1987).

Finally, consumers could be addressed to take much in account the brand reputation of EV car manufacturers, which has been deemed to favour the adoption of innovation (Corkindale and Belder, 2009).

Therefore, this work, which is in progress, aims to present the preliminary results on a study concerning the role of brand in the e-mobility market. First, the study aims to evaluate the influence of self-expressive value on perceived quality. Second, the study investigates the mediating variable of brand reputation on the relationship between self-expressive value and perceived quality.

## LITERATURE

According to Aaker (1999) brands help consumers to express theirselves. Self-expressive value is the "consumers' perception of the degree to which the specific brand enhances ones'social self and/or reflects one's inner self" (Carrol and Ahuvia, 2006). Papista and Dimitriadis (2012) said that self-expressiveness could favour brand relationship quality while Wallace et al. (2021) pointed out that self-expressiveness could influence brand outcomes such as intention to co-create value and willingness to pay a premium price.

As concerns EVs, literature highlighted that psychological factors, such as moral norms and environmental concern, affect the purchase intention of consumers and the customer satisfaction. Furthermore, in some context the purchase is intention is also affected by social pressure. It can be inferred that EV consumption is somehow linked to aspects of consumers'personality (Wang et al., 2016; Mohamed et al., 2016; Chu et al., 2019; Okada et al., 2019).

Given that psychological aspects are linked to the EV consumption and, more generally, cars are used by consumers to express their identity, beliefs and values (Heffner et al., 2009; Muhlbacher et al., 2016; Long et al., 2019) we can hypothesize that:

H1: Self-expressive value positively influences brand perceived quality.

The adoption of new propulsion and the entry into the automotive industry of new manufacturers could make brand reputation central (Bocconi Students Investment Club, 2021).

Self-expressive value increase the attractiveness of brand personality (Kim et al., 2001), which is in turn one of the antecedents of reputation (Schwaiger, M., 2004). At the same time, reputation sometimes can be also assessed by the personal experience of individuals (Kuenzel and Halliday, 2010).

Assuming that self-expressive value can affect more generally brand constructs, we can hypothesize that

H2: Self-expressive value positively influences brand reputation.

Brand reputation consists of the overall perception of a firm by large audience. This perception develops over the time (Choi and Burnham, 2020). According to Rigaux-Bricmont (1982), consumers develop the perceived quality relying on cues such as the brand. Given the pivotal role of brand in the

automotive industry, we can infer that brand reputation could exert an important role to the development of perceived quality. Therefore, we can hypothesize that

H3: Brand reputation positively influences brand quality

In this work, we also aim to investigate the potential mediate effect of brand reputation. Brand reputation has been already considered a mediator in literature. However, there is no work, for all we know, that investigates his potential mediation betwenn self-expressive value and perceived quality (Caruan and Ewing, 2010). In the automotive industry where the brand reputation plays a central role, it can be hypothesized that

H4: Brand reputation mediates the relationship between self-expressive value and brand quality

Figure 1 represents the initial mode where it is assumed that self-expressive value affect the perceived quality.



Figure 1. The initial model

Figure 2 represents the final model where it is assumed that the brand reputation mediates the relationship self-expressive value affect the perceived quality.
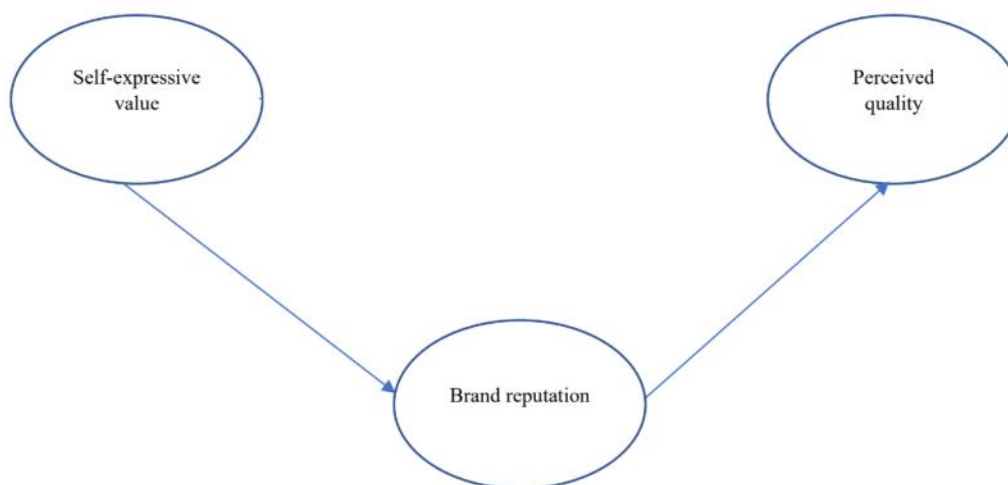


Figure 2. The final model

## RESEARCH DESIGN

The work is performed by implementing an online quantitative approach. The research unit refers to people living in Italy and Sweden who are drivers and who possess an EV. In this work, we refer to BEVs and PHEVs, which need to be charged by an external source of energy. Sample sizes of Italy and Sweden are made up of 170 individuals per country.

The dissemination of questionnaire was performed by Toluna Corporation, which provides qualified research services. After a pre-test survey, the questionnaire campaign began and data were collected in a week period in June 2023.

## MEASURES

The questionnaire was used to collect demographics of the respondents and their opinions about the brand of their EVs.

Demographics characteristics concern gender, age, household composition, geographical area, education, job status, household composition, income, and civil status.

Table 1 and 2 describe the sample demographics of the Italian and Swedish samples.

| Variables | | Count | % |
|---|---|---|---|
| Gender | M | 104 | 62.4 |
| | F | 64 | 37.6 |
| Age | 18–24 | 10 | 5.9 |
| | 25–39 | 54 | 31.7 |
| | 40–54 | 66 | 38.9 |
| | 55+ | 40 | 23.5 |
| Geographical area of residence* | Northwest Italy  1 | 67 | 39.4 |
| | Northeast Italy2 | 30 | 17.6 |
| | Central Italy3 | 22 | 12.9 |
| | South Italy and Islands4 | 51 | 30 |

Table 1. Sample Demographics Italy (n = 170)

| | | Count | % |
|---|---|---|---|
| Gender | M | 108 | 72 |
| | F | 42 | 28 |
| Age | 18–24 | 35 | 23.3 |
| | 25–39 | 60 | 40.3 |
| | 40–54 | 39 | 25.7 |
| | 55+ | 36 | 10.7 |
| Geographical area of residence* | Stockholm | 65 | 43.3 |
| | Smaland och oarna, Sydsverige | 37 | 24.7 |
| | Vastsverige | 30 | 20 |
| | Norra mellansverige, Mittnorrland, Ovre norrland | 18 | 12 |

Table 2. Sample Demographics Sweden (n = 170)

As concern the opinions about the brand of EVs, items are selecting from literature concerning brand. Selx-expressive value, brand quality, and brand reputation constructs are measured on three item, nine-point Cantril scales (see Table 3)

| Question | Items | Measure |
|---|---|---|
| Indicate on a scale of 1 to 9 (where 1 = not at all and 9 = completely, with numbers 2 to 8 indicating intermediate degrees between the two extremes) how much you agree with each of the following sentences | **Self-expressive value**<br>Q1 The brand of my car helps me express my personality<br>Q2 I feel a strong connection with people who use cars of my brand<br>Q3 Being a customer of this brand makes me feel part of a special group | Nine-point scale from 1 to 9 |
|  | **Brand quality**<br>Q1 The opinion towards the brand of my car has become more and more positive over the time<br>Q2 I think that the driving comfort of the cars of my brand is better than the other brands |  |
|  | **Brand reputation**<br>Q1 The brand of my car is at the forefront of the production of electric vehicles<br>Q2 The brand of my car has always been associated to the production of high-quality vehicles<br>Q3 The brand of my car is associated to vehicles that make you experience strong emotions |  |

Table 3. Constructs items


## RESULTS

This work performs the coviarance-based Structural Equation Modeling (SEM) (Kaplan, 2008) using the Lavaan package (Rosseel, 2012) in the R statistical programming language (R Core Team, 2021).

In the beginning, the relationship between self-expressive value and brand quality is investigated. Then, the work proceeds to verify whether the relationship is mediated by brand reputation. As suggested by Baron e Kenny (1986) and Kenny et al. (1998), the mediator is entered in the initial model in order to verify the effect produced on the relationship between self-expressive value and brand quality.

Table 4 reports the reliability measure for constructs of the initial model. These measures are considered satisfying, because all of them are over the threshold values, which are pointed out by literature.

| Construct | CR | AVE | Alpha |
|---|---|---|---|
| Self-expressive value | 0.814 | 0.595 | 0.815 |
| Brand quality | 0.713 | 0.554 | 0.712 |

Table 4. Reliability measures for the initial model

Table 5 reports the results of the initial model. It emerges that self-expressive value affects significantly and positively the perceived quality. Therefore, H1 is supported.

| Hypothesis | Dependent Variable | Independent Variable | Estimates | St. error | z-value | P-value |
|---|---|---|---|---|---|---|
| H1 | Brand quality | Self-expressive value | 0.707 | 0.088 | 8.068 | 0.000 |

Table 5. Results for the initial structural model

Subsequently, the brand reputation construct has been added in the model to verify its capability to explain the relationship between self-expressive value and perceived quality.

Reliability measures of the final model are in Table 6.

The values of the composite reliability, the AVE and the Cronbach Alpha exceed those considered acceptable by literature. On the contrary, the AVE value of brand reputation is below 0.5. Given that the composite reliability exceeds 0.6, the convergent validity is considered acceptable in line with literature (Lam, 2012).

| Construct | CR | AVE | Alpha |
|---|---|---|---|
| Self-expressive value | 0.814 | 0.594 | 0.815 |
| Brand quality | 0.713 | 0.554 | 0.713 |
| Brand reputation | 0.721 | 0.468 | 0.721 |

Table 6.  Reliability measures for the final model

The complete model is in Table 7. The impact of self-expressive value on brand reputation is positive and significative. These results support H2. H3 is also supported because brand reputation affect significantly the brand quality. The entry of the mediator in the model has made the relationship between self-expressive value and brand quality not significant. Therefore, the brand reputation construct is a complete mediator and it is capable of explaining the relationship.

| Hypothesis | Dependent Variable | Independent Variable | Estimates | St. error | z-value | P-value |
|---|---|---|---|---|---|---|
| H1 | Brand quality | Self-expressive value | -0.232 | 0.528 | -0.439 | 0.660 |
| H2 | Brand reputation | Self-expressive value | 0.612 | 0.070 | 8.775 | 0.000 |
| H3 | Brand quality | Brand reputation | 1.519 | 0.812 | 1.871 | 0.061 |

Table 7. Results for the final structural model

## DISCUSSION

These preliminary results highlights important insights.

First, the perceived quality of EV users is affected by psychological aspects that can be related to the concept of EVs as means to express consumers'personality.

The more the brand helps users to express their personality and to increase the perception of being a part of special group, the better the perceived quality and the final judgement on car manufacturers. The other insight is that brand reputation explains this relationship. The development of perceived quality is not disconnected from the general reputation, which is built by the large audience of stakeholders in the industry over the time.

These first preliminary results suggest that brands with low brand reputation, could have more difficulty to increase the perception quality of their consumers which in turn could reduce their loyalty.

## REFERENCE

Alhaddad, A. (2015), "Perceived quality, brand image and brand trust as determinants of brand loyalty", Journal of research in Business and Management, Vol. 3 No. 4, pp. 1-8.

Augurio, A., Castaldi, L., Addeo, F., Mazzoni, C., and Matarazzo, O. (2022), "Purchase intention in the Italian e-mobility market", Journal of Cleaner Production, Vol. 373, 133815.

Baron, R. M., and Kenny, D. A. (1986), "The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations", Journal of Personality and Social Psychology, Vol. 51 No. 6, p. 1173.

Biresselioglu, M.E., Kaplan, M.D., and Yilmaz B.K. (2018), "Electric mobility in Europe: A comprehensive review of motivators and barriers in decision making process", Transportation Research Part A, Vol. 109, pp. 1-13.

Bocconi Students Investment Club (2021), Electric vehicles: traditional automotive giants vs disruptive tech companies.

Carroll, B. A., and Ahuvia, A. C. (2006), "Some antecedents and outcomes of brand love" Marketing Letters, Vol. 17 No. 2, pp. 79–89.

Caruana, A., and Ewing, M. T. (2010), "How corporate reputation, quality, and value influence online loyalty", Journal of Business Research, Vol. 63 No. 9-10, 0–1110.

L. Choi, Burnham, T. (2020), "Brand reputation and customer voluntary sharing behavior: the intervening roles of self-expressive brand perceptions and status seeking", Journal of Product & Brand Management, ahead of print.

Corkindale, D., and Belder, M. (2009), "Corporate brand reputation and the adoption of innovations", Journal of Product & Brand Management, Vol. 18 No. 4, pp. 242-250.

European Parliament (2023), "Fit for 55: zero CO2 emissions for new cars and vans in 2035", available at https://www.europarl.europa.eu/news/en/press-room/20230210IPR74715/fit-for-55-zero-co2-emissions-for-new-cars-and-vans-in-2035.

Ghosh, A. (2020), "Electric vehicle (EV) to reduce the carbon footprint in the transport sector: A Review", Energy, Vol. 13, 2062.

Heffner, R. R., Kurani, K. S., and Turrentine, T. S. (2007), "Symbolism in California's early market for hybrid electric vehicles", Transportation Research Part D, Vol. 12, pp. 396-413.

International Environmental Agency (2023), "Global EV data explorer", available at  https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer

Kaplan, D. (2008). Structural Equation Modeling: Foundations and Extensions (2nd ed.), Thousand Oaks, CA: Sage.

Kenny, D. A., Kashy, D. A, and Bolger, N. (1998), "Data analysis in social psychology", in Gilbert, D.T., Fiske, S.T., and Indzey, G.L. (Eds.), The Handbook of Social Psychology, Vol. 4, New York: Oxford University Press (pp. 233-265).

Kuenzel, S., and Halliday, S. V. (2010), "The chain of effects from reputation and brand personality congruence to brand loyalty: The role of brand identification", Journal of Targeting, Measurement and Analysis for Marketing, Vol. 18, pp. 167-176.

Lam, L. W. (2012), "Impact of competitiveness on salespeople's commitment and performance", Journal of Business Research, Vol. 65 No. 9, pp. 1328-1334.

Long, Z., Axsen, J., Miller, I., and Kormos, C. (2019), "What Tesla mean to car buyers? Exploring the role of automotive brand in perceptions of battery electric vehicles", Transportation Research Part A, Vol. 129, pp. 185-204.

Mohamed, M., Higgins, C., Ferguson, M., and Kanaroglou, P. (2016), "Identifying and characterizing potential electric vehicle adopters in Canada: A two-stage modelling approach", Transportation Policy, Vol. 52, pp. 110-112. https://doi.org/10.1016/j.trd.2019.04.010.

Muhlbacher, H., Raies, K., Grohs, R., and Koll, O. (2016), "Drivers of brand strength: configural paths to strong cognitive brand equity", Journal of Business Research, Vol. 69, pp. 2774-2780.

Papista, E., and Dimitriadis, S. (2012), "Exploring consumer-brand relationship quality and identification: Qualitative evidence from cosmetics brands", Qualitative Market Research An International Journal, Vol. 15 No. 1, pp. 33-56.

R Core Team (2021), R: a language and environment for statistical computing, R Foundation for Statistical Computing, Vienna, Austria.

Rezvani, Z., Jansson, J., and Bodin, J. (2015), "Advances in consumer electric vehicle adoption research: A review and research agenda", Transportation research Part D, Vol. 34, pp. 122-136.

Rigaux-Bricmont, B. (1982), "Influences of brand name and packaging on perceived quality", Advances in Consumer Research, Vol. 9, pp. 472-477.

Rosseel, Y. (2012), "Lavaan: An R package for structural equation modeling", Journal of Statistical Software, Vol. 48, pp. 1–36.

Schwaiger, M. (2004), "Components and parameters of corporate reputation. An empirical study", Schmalenbach Business Review, Vol. 56 No. 1, pp. 46–71.

Wang, S., Fan, J., Zhao, D., Yang, S., and Fu, Y. (2016). "Predicting consumers' intention to adopt hybrid electric vehicles: using and extended version of the theory of planned behaviour model", Transportation, Vol. 43, pp. 123-143. DOI:10.1007/s11116-014-9567-9

Zeithaml, V. (1987), Defining and Relating Price, Perceived Quality and Perceived Value, Cambridge, MA, Marketing Science Institute.

# BRAND COOLNESS: A QUALITATIVE APPROACH TO CULTURAL DIVERSITY

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## ABSTRACT

In the competitive market, stakeholders must identify critical factors to attract and retain their target audience. The construct of *coolness* is subjective and dynamic, offering numerous approaches to interpretation and management, thus presenting a valuable resource for brands. Furthermore, creating *cool* brands has recently gained attention as a differentiation strategy to penetrate new markets. This paper investigates an underexplored aspect of *brand coolness* studies mentioned by Warren et al. (2019): the influence of cultural factors on the perception of brand *coolness*.

A qualitative methodology employing focus groups was utilised in this research. Three focus groups were conducted, each comprising participants of different nationalities. As a result, the study identified new characteristics of *cool brands*, including *Belonging, Affordability, Conspicuousness, Exclusivity, Passion, Social* and *Environmental Sustainability*, and *Youthfulness*. In conclusion, further research is needed to comprehend the phenomenon of *brand coolness*, addressing limitations related to sample size and exploring novel models of *brand coolness* for specific cultures and cultural clusters yet to be examined.

*Keywords: Brand Coolness; Cultural Values; International Marketing; Focus Groups.*

## INTRODUCTION

This paper aims to examine the influence of culture on brand coolness and address its implications for international marketing strategies while also providing insights into cross-cultural differences, expanding existing research, and offering a decision-making tool for international marketers. In the era of globalisation, geographical constraints on society and culture have diminished, resulting in a socially transformative phenomenon (Sharifonnasabi *et al.*, 2020). Globalisation is considered a deterritorialization phenomenon where people, information, objects, and entities are part of the international system (Sharifonnasabi *et al.*, 2020). The Internet has shaped social and commercial connections, influencing global interactions and international trade (Steenkamp, 2020; UNCTAD,

2021). However, despite convergence trends, cultural differences remain significant, leading to varying perceptions of brand-related concepts like *Brand Coolness* (Liu *et al.*, 2021; Watson *et al.*, 2018). Previous research on *Brand Coolness* has not reached a consensus on its definition or fully explored cultural differences and economic systems' impact (Warren *et al.*, 2019). This study examines whether and how Brand Coolness characteristics vary across cultures and continues the previous research by investigating if coolness has the same meaning in diverse markets. The paper describes *coolness* as a subjective, dynamic, socially constructed positive trait (Warren and Campbell, 2014) without consensus on its meaning (Sundar *et al.*, 2014; Warren *et al.*, 2019).

Given the infancy of literature on *Brand Coolness* in branding and international marketing, this paper seeks to study the impact of culture on the concept of *coolness* using a qualitative approach with focus groups (FG). The objectives of this study are to: a) perceive if brand coolness differs across cultures; b) investigate the limitations of Warren et al.'s (2019) study on cross-cultural differences; c) expand international marketing and strategy studies regarding *Brand Coolness*; d) offer a tool for international marketers when deciding on standardisation vs adaptation of the brand management strategy. The paper is organised as follows: introduction, literature review, methodology, discussion, limitations, and future research.

## LITERATURE REVIEW

Brand equity encompasses elements like names, symbols, and designs that distinguish products from competitors while incorporating consumer perceptions and emotions (Batra *et al.*, 2012; Keller, 2003a). Brands serve various purposes for consumers and firms, such as recognition, connection, and differentiation (Keller, 2003b). Strategic management in branding is vital for creating brand equity and establishing unique value propositions (Chung *et al.*, 2013). Factors like brand awareness, perceived quality, brand image, and loyalty contribute to a brand's added value (Keller, 2003b; Yoo *et al.*, 2000). Branding is essential for achieving brand equity and informing strategic decisions (Lee *et al.*, 2014). Aaker's brand identity and personality, and Keller's brand associations, address the brand concept (Lee *et al.*, 2014). Brand personality consists of human characteristics associated with a brand, influenced by sociocultural and marketing factors (Aaker, 1996). The brand image symbolises what the brand represents in customers' minds, such as Disney's association with magic, nostalgia, and fairy tales (Keller, 2003a).

*What does coolness mean?*

In this paper, the term *cool* refers to a desirable trait indicating something or someone as fashionable, admirable, excellent, and acceptable, rather than its formal definition related to temperature (Cambridge Dictionary, 2022). *Coolness* is a subjective, shared set of meanings that vary across groups

and times, including language, artistic expression, values, and attitudes (O'Donnell and Wardlow, 2000). While initially associated with counterculture movements, coolness has expanded to include traits such as narcissism and hedonism (Bird and Tapp, 2008). It is ephemeral and changeable over time and among different types of customers (Warren and Campbell, 2014).

*The foundations of Brand Coolness*

The concept of *coolness* is subjective and dependent on its intended application, with various dimensions and characteristics that change over time and across different markets (Dar-Nimrod *et al.*, 2012; O'Donnell and Wardlow, 2000; Warren *et al.*, 2019; Warren and Campbell, 2014). In response to the lack of academic analysis on brand coolness, Warren et al. (2019) introduced the term to provide insight for marketers, identifying ten attributes associated with cool brands and highlighting four key dimensions: subjectivity, positive valence, autonomy, and dynamic nature.

Subjectivity highlights that a brand's perceived coolness depends on consumers' evaluation (Dar-Nimrod *et al.*, 2012; Loureiro *et al.*, 2020; Warren *et al.*, 2019). Positive valence is expressed through desirable traits or adjectives associated with brands (Belk *et al.*, 2010; Dar-Nimrod *et al.*, 2012; Warren *et al.*, 2019; Warren and Campbell, 2014). Autonomy refers to the ability and willingness to pursue one's path rather than conforming to expectations and desires (Warren *et al.*, 2019; Warren and Campbell, 2014). The dynamic nature of coolness underscores that it depends on context, generations and time, and the features and individuals linked with cool brands are subject to change (Chen *et al.*, 2023; Warren *et al.*, 2019).

Numerous characteristics define *coolness* and provide insights into its perception. Warren and colleagues (2019) identify dimensions and features of *Brand Coolness* such as *Extraordinary*, *Aesthetically appealing*, *Energetic*, *High status*, *Rebellious*, *Original*, *Authentic*, *Subcultural*, *Iconic,* and *Popular*. These traits are not fixed and depend on the target market. However, *coolness* is a dynamic construct, and brands that pursue it are also subject to change, potentially moving from niche to mass cool and becoming uncool over time (Warren *et al.*, 2019).

The *extraordinary* feature offers superior functional value, while the aesthetically appealing trait differentiates itself from basic design standards. *High status* indicates prestige and sophistication, while rebelliousness represents resistance to mainstream trends (Dar-Nimrod *et al.*, 2012).

*Originality* is crucial for *coolness,* requiring innovation and a connection to the dynamic dimension of coolness according to its time and context (O'Donnell and Wardlow, 2000; Warren and Campbell, 2014). *Authenticity* and *originality* are essential for deviating from what is considered ordinary and achieving *coolness* organically (Warren *et al.*, 2019). *Coolness* is also associated with subcultures and

iconic figures, reflecting strong symbolic meanings and solid values, beliefs, and cultures (Warren *et al.*, 2019).

*Popularity* is a defining characteristic of *coolness*, as it becomes fashionable or trendy and is embraced by a large group (Warren *et al.*, 2019). *Energy* is another dimension of this construct, reflecting people's passion for something or someone to bestow *cool* status upon it (Warren *et al.*, 2019). Understanding these dimensions is essential for marketers to break through niche barriers and make their products or individuals popular among the mass population.

*Brand coolness* affects brand love, word-of-mouth, familiarity, attitude, and willingness to pay a premium for a specific brand (Warren *et al.*, 2019). Also, increasing *brand coolness* leads to the increase of brand engagement, brand love and happiness of the consumers (Attiq *et al.*, 2022). This paper aims to study whether the characteristics of *coolness* and *brand coolness* are universal or vary across markets, examining cultural perceptions of *brand coolness* in different markets, as the definition of cool may change based on the subjective perspective of each cultural group within a given market (Warren *et al.*, 2019).

The continuous rise in market globalisation emphasises the importance of examining cultural values and dimensions in the target market to ensure effective international marketing decisions (Katsikeas *et al.*, 2006; Warren *et al.*, 2019).

## METHODOLOGY

This study aims to understand how different cultures perceive the concept of *Brand Coolness*. Given the complex nature of the phenomenon at stake and the need to grasp the subjects' more profound meaning and thoughts, a qualitative approach was followed (Nunan *et al.*, 2020). The data collection method used was Focus Group. FGs are a practical approach to articulating pre-existing views on a particular topic or issue by encouraging participant interactions (Saunders *et al.*, 2016).

According to Wilkinson (1998), Focus Group methodology has been used in marketing and social sciences studies as a practical approach to articulate pre-existing views on a particular topic or issue through encouraging interactions among participants (Saunders *et al.*, 2016; Wilkinson, 1998). In this approach, participants interact with each other and a moderator to gather interactive data on a specific theme chosen by the researcher (Wilkinson, 1998). It is recommended to interview homogenous groups (Wilkinson, 1998); therefore, three groups were studied: English-speaking, Portuguese-speaking, and Spanish-speaking individuals.

*Data Collection*

Participants were selected based on specific criteria, including age, education, and nationality, with gender and educational background deemed as non-essential factors in determining the consensus on how each culture affects *brand coolness*. *Coolness* is often associated with younger individuals (O'Donnell and Wardlow, 2000), so this age group was prioritised. Furthermore, education was deemed crucial in creating a more homogeneous group for analysis. At the same time, the involvement of participants from multiple nationalities was essential for studying the limitations of *brand coolness* (Warren *et al.*, 2019), as opposed to differences among cultures on *coolness*. Data for the qualitative phase was collected through three separate focus groups, each conducted in a different language (English, Portuguese, and Spanish). The Portuguese language focus group (FG1) aimed to gather Brazilians and Portuguese people, given their shared language and history, while the second focus group (FG2) consisted of native Spanish speakers. The third focus group (FG3) comprised individuals of various native languages excluding Spanish and Portuguese. A summary of the demographics is presented in Table 1.

|  | Frequency | % | Focus Group nr. |
|---|---|---|---|
| Gender |  |  |  |
| Male | 7 | 33% | n/a |
| Female | 14 | 67% | n/a |
|  |  |  |  |
| Age |  |  |  |
| 18-24 | 11 | 52% | n/a |
| 25-35 | 10 | 48% | n/a |
|  |  |  |  |
| Nationality |  |  |  |
| Brazilian | 6 | 29% | 1 |
| Chinese (Mainland China) | 3 | 14% | 3 |
| Costa Rican | 1 | 5% | 2 |
| Honduran | 2 | 10% | 2 |
| Italian | 1 | 5% | 3 |
| Portuguese | 5 | 24% | 1 |
| Spanish | 3 | 14% | 2 |
|  |  |  |  |
| Education |  |  |  |
| Higher Education (Master or Bachelor) | 19 | 90% | n/a |
| Secondary Education | 2 | 10% | n/a |
|  |  |  |  |
| Field of study |  |  |  |
| Business | 9 | 42,9% | n/a |
| Education | 3 | 14,3% | n/a |
| Humanities | 7 | 33,3% | n/a |
| None | 2 | 9,5% | n/a |

Table 1: Focus Groups Demographics

Furthermore, comparing this exploratory and qualitative phase with the one conducted by Warren et al. (2019), the nationalities included were different since their respondents were Americans and Europeans (British, Portuguese, and Slovaks). In contrast, it was studied the following nationalities: Portuguese, Brazilian, Chinese, Costa Rican, Italian, Honduran and Spanish.

The discussion followed six questions based on Warren et al.'s (2019) study.

| Introduction | - Welcome and personal introduction.<br>- Participants brief introduction<br>- Explanation of the purpose of the research<br>- Presentation of the concepts of Coolness and Brand Coolness<br>- Information on the rules of the discussion |
|---|---|
| Discussion | - Open-ended questions are to be discussed in the following sequence:<br>- Which brands do you perceive as cool? Why?<br>- Do you believe that coolness is more associated with people, objects, or lifestyle?<br>- Do you think that every brand could be perceived as cool?<br>- What characteristics or behaviours make you believe that a brand could be defined as cool?<br>- Do you think a brand is cool when perceived by a group of people or everybody? |
| Conclusion | - Summary of the Outcomes and final comments<br>- Closure of the session |

Table 2: Focus Group Script

*Data Analysis*

The objective of this phase was not only to validate the ten characteristics of *Brand Coolness* found in prior research but also to explore new themes that emerged from the discussions. *Brand Coolness* characteristics are the following: extraordinary, aesthetically appealing, energetic, high status, rebellious, original, authentic, subcultural, iconic, and popular (Rosado-Pinto and Loureiro, 2022; Warren *et al.*, 2019).

| Characteristics | Definition |
|---|---|
| Extraordinary/ Useful | A positive quality that sets a brand apart from its competitors/offering superior functional value |
| High Status | Associated with social class, prestige, sophistication, and esteem |
| Aesthetically Appealing | Having an attractive and visually pleasing appearance |
| Rebellious | A tendency to oppose, fight, subvert, or combat conventions and social norms |
| Original | A tendency to be different, creative and to do things that have not been done before |
| Authentic | Behaving in a way that is consistent with or true to its perceived essence or roots |
| Subcultural | Associated with an autonomous group of people who are perceived to operate independently from and outside of mainstream society |
| Popular | Fashionable, trendy, and liked by most people |
| Iconic | Widely recognised as a cultural symbol. |
| Energetic | Possessing strong enthusiasm, Energy, and vigour |

Table 3: Brand Coolness characteristics' definitions (source: Warren et al. (2019, p. 39)).

During the qualitative data analysis of the focus groups, the original *brand coolness* characteristics were used for coding, but they were deemed insufficient in capturing the participants' viewpoints; therefore, new themes were identified and adequately coded.

Different associations with the word *cool* were discovered in Portuguese and Spanish. Brazilians, for instance, mostly use "legal" as a substitute for *cool*, but some regions use slang like "maneiro" and "massa". Similarly, young Portuguese people are accustomed to using the English word *cool*, but in Portugal, "fixe" is the closest term that conveys the positive connotation of *coolness*.

Regarding Spanish native speakers, there are different words for *cool* as there are many Spanish-speaking countries. For instance, in Costa Rica, it is chiva"; in Chile, it is "bácan"; and in Mexico, it is "padre". However, "guay" (Spain) and "genial" (Argentina) are the most used words for *cool* among all Spanish-speaking countries. In addition, the English word *cool* is also regularly used by Spanish speakers.

## RESULTS AND DISCUSSION

Preliminary findings diverge from Warren et al. (2019)., with participants introducing new attributes like affordability, which indicates low price and accessibility, contributing to coolness. Affordability relates to pricing and influences consumer behaviour (Zhao *et al.*, 2021). Participants cited Zara as an example of a *cool* brand. Namely, a Portuguese participant stated that Zara is a *cool* brand *because it combines affordable prices with high-fashion concept designs*. Meanwhile, whereas a Brazilian stated that *local brands are important and cool due to Sustainability, inclusion, ethics, and reasonable prices*.

*Belonging* is essential for cool brands, fostering an emotional connection and enabling consumers to feel like an extension of the brand. This sense of belonging provides a safe space for self-expression and identification with a social group, satisfying their need for self-definition (Chu *et al.*, 2019).

A Chinese participant explained that *for a brand to succeed as cool, a company must target a specific amount of people and create a specific and unique relationship between the brand and its customers*. For one, a Spanish participant stated that *in Spain, what is socially accepted as cool is someone who travels a lot and takes photos of the main monuments, so being and feeling part of this lifestyle is cool*. Simultaneously, another stated that *people also seek to be cool; I find it interesting that people seek to be accepted by a group*. Finally, a Brazilian exemplified why belonging matters for *coolness*. It was stated that *I'm already so used to using Spotify that I don't want to use another one because I already have a connection with its users and empathy with the brand*. One of the Brazilians, when asked about three things that make a *cool* brand at the final moments of FG 1, she chose "*belong*" as one of them.

Exclusivity is also linked to coolness, with cool brands being associated with high status and limited editions or experiences. Celebrity endorsements further enhance exclusivity, while owning luxury products makes people feel cool and part of the upper class (Wang *et al.*, 2021). One participant from FG1 stated *I think the cool brand has a lot to do with exclusive identity, so it is more than with a universal concept*. Another participant from FG2 remarked *I consider cool people who also believe that others are cool because of what they have that is exclusive*.

Native Spanish speakers brought up the idea related to conspicuousness during the focus groups. The most representative statement on this topic came from the participants from Honduras, who said *people who have iPhones already have or realise that they have more purchasing power. It may not be like that, but it is what it conveys. Twenty-year-old university students in private and costly universities walk around with their convertible cars (...). We could say that Porsche and BMW, whose youth advertising shows this, and that the person who has it stands out*. Therefore, conspicuousness in *brand coolness* underscores consumption aimed at enhancing social status and drawing attention (Souiden *et al.*, 2011). FG1 and FG2 participants cited iPhone and Apple as cool brands popular among specific segments, signifying status. Consequently, cool individuals are likelier to buy conspicuous products reflecting their social status within a reference group (Souiden *et al.*, 2011).

Sustainability is a vital characteristic of *cool* brands, reflecting social and environmental responsibility. Participants in focus groups noted that sustainable practices enhance a brand's coolness. Sustainability is crucial in the "triple bottom line" concept, emphasising planet, people, and profit and guiding sustainable development and behaviour (Balderjahn *et al.*, 2013). A *cool* brand prioritising sustainability can attract consumers who value self-care, ethics, inclusion, community, and respect for nature, further enhancing its appeal and perceived coolness. Remarkably, one participant of FG 1 remarked that a *cool* brand regards *ethical concerns and vegan values. Also, marketing brings many people considered as cool, young, people of various classes and very different to represent the brand. I think this is very important within the scope of cool*. Also, another said that *I think being cool is not only having a beautiful design outfit, but it also needs to be very attached to racial issues, inclusion, and diversity. Therefore, it's useless for a brand to raise flags of Sustainability and inclusion when it is not what they have done in practice*.

*Coolness* is often associated with youthfulness, as it has been popularised by young people, embodying the essence of adolescence or young adulthood. Focus groups suggest that *this demographic often develops or propagates coolness traits*, driving discourse around *cool* brands. Consequently, individuals who use such products may appear younger due to this association. Lastly, even though, this new attribute dialogues directly with one of the traits of Energetic, it was necessary to address it given emphasis during the discussions.

The link between youth and *coolness* was also raised, mainly because the term *cool* was massified by young people, thus representing what it is all about being adolescents and adults (Jamison *et al.*, 2015; O'Donnell and Wardlow, 2000).

There were *coolness* traits created or spread by young people in all focus groups in some way. However, most of the discussion surrounding that *cool* brand also seems to be desired by young people, which could lead people who use it and are not young to look younger. To summarise, using one of the statements found in the second focus group, *cool brands do not need to be essential for the young, but it is vital because young people pursue changes*.

Participants in focus groups emphasised that *cool* brands evoke passionate feelings and positive emotions, leading to consumers falling in love with them. *Cool* brands create passion and attachment in consumers' hearts and minds, contributing to their perception as cool (Loureiro *et al.*, 2020). During FG3, an Italian subject expressed that *a cool person is someone with much passion and who knows about the next steps, and a cool brand must use them to portray this feeling*.

## LIMITATIONS AND FUTURE RESEARCH

Revisiting the research problem, this study aimed to address a limitation of Warren et al. (2019)'s brand *coolness* model by examining the influence of culture on perceptions of *brand coolness*. While their research included participants from various countries, the focus was on the quantitative phase, primarily based on American population studies.

Our study's limitations include the limited cultural diversity of participants, with most having backgrounds in humanities, business, or education. Additionally, gender was not considered as a criterion. Finally, since *coolness* is subjective, dynamic, and potentially influenced by group dynamics, these factors may have biased the outcomes.

The findings suggest there may not be a universal *brand coolness* consensual definition, as subjectivity plays a significant role. Therefore, exploring new attributes and conducting in-depth studies on specific cultures is essential to understand their preferences and developing appropriate *brand coolness* models. Thus, marketers should be cautious when applying Warren et al. (2019)'s model may not adequately account for cultural differences in perceptions of brand c*oolness*.

In conclusion, further research, including quantitative validation of new themes identified in the focus groups, is necessary to enhance our understanding of brand *coolness* and its relationship with culture and study the impact of these new attributes on clusters of countries based on cultural dimensions from Hofstede or the GLOBE project (Hofstede and Jan Hofstede, 2005; House *et al.*, 2004).

## IMPLICATIONS

Our paper addresses that Brand Coolness is a valuable asset for firms to create cool brands. However, the scale provided by Warren et al. (2019) considered lightly the effect of cultures. In other words, new attributes might arise depending on specific cultures. For instance, even though the ten main components display the general idea of coolness and the strengths and weaknesses of a brand to be perceived as cool, it might not aid a firm in understanding what makes a cool brand in a specific international market.

The new attributes were discovered through this research as indicators that the scale must be adapted and that new dimensions might also play a role in creating cool brands. Social and environmental responsibility, for example, is a pertinent attribute for Brazilians and Europeans. Therefore, even though the brand is scoring high enough in the ten original attributes, the lack of more reliable attributes for specific cultures might cause bad decisions in reinforcing a brand image as cool.

Our study focuses on and reinforces the significance of Brand Coolness as an asset for firms in establishing cool brands. However, the scale proposed by Warren et al. (2019) considers lightly the influence of cultural factors. In other words, specific cultures may introduce novel attributes that contribute to the perception of coolness. While the ten primary components of coolness provide a general understanding of its strengths and weaknesses, they may not fully elucidate what makes a brand cool in a particular market.

Through our research, we have identified additional attributes indicative of the need to adapt to the scale and recognise the role of new attributes in creating cool brands. Notably, social and environmental responsibility emerge as promising attributes for Brazilian and European consumers. Consequently, even if brand scores highly on the original ten attributes, the absence of culturally relevant attributes may lead to misguided decisions regarding reinforcing a brand's cool image.

## ACKNOWLEDGEMENTS

## REFERENCES

Aaker, D.A. (1996), "Measuring Brand Equity Across Products and Markets", California Management Review, Vol. 38 No. 3, pp. 102–120.

Attiq, S., Abdul Hamid, A.B., Khokhar, M.N., Shah, H.J. and Shahzad, A. (2022), "'Wow! It's Cool': How Brand Coolness Affects the Customer Psychological Well-Being Through Brand Love and Brand Engagement", Frontiers in Psychology, Vol. 13.

Balderjahn, I., Buerke, A., Kirchgeorg, M., Peyer, M., Seegebarth, B. and Wiedmann, K.-P. (2013), "Consciousness for sustainable consumption: scale development and new insights in the economic dimension of consumers' sustainability", AMS Review, Vol. 3 No. 4, pp. 181–192.

Batra, R., Ahuvia, A. and Bagozzi, R.P. (2012), "Brand Love", Journal of Marketing, Vol. 76 No. 2, pp. 1–16.

Belk, R.W., Tian, K. and Paavola, H. (2010), "Consuming cool: Behind the unemotional mask", Research in Consumer Behavior.

Bird, S. and Tapp, A. (2008), "Social Marketing and the Meaning of Cool", Social Marketing Quarterly, Vol. 14 No. 1, pp. 18–29.

Cambridge Dictionary. (2022), "Cool", edited by Cambridge DictionaryCambridge Dictionary, Cambridge University Press, December.

Chen, F. (Faye), Quadri-Felitti, D. and Mattila, A.S. (2023), "Generation Influences Perceived Coolness But Not Favorable Attitudes Toward Cool Hotel Brands", Cornell Hospitality Quarterly, Vol. 64 No. 1, pp. 95–103.

Chu, S.-C., Lien, C.-H. and Cao, Y. (2019), "Electronic word-of-mouth (eWOM) on WeChat: examining the influence of sense of belonging, need for self-enhancement, and consumer engagement on Chinese travellers' eWOM", International Journal of Advertising, Vol. 38 No. 1, pp. 26–49.

Chung, J.Y., Lee, J. and Heath, R.L. (2013), "Public relations aspects of brand attitudes and customer activity", Public Relations Review, Vol. 39 No. 5, pp. 432–439.

Dar-Nimrod, I., Hansen, I.G., Proulx, T., Lehman, D.R., Chapman, B.P. and Duberstein, P.R. (2012), "Coolness: An Empirical Investigation", Journal of Individual Differences, Vol. 33 No. 3, pp. 175–185.

Hofstede, G. and Jan Hofstede, G. (2005), Cultures and Organizations: Software of the Mind. Revised and Expanded., 2nd ed., McGraw-Hill, New York.

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W. and Gupta, V. (2004), Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies, Sage Publications, Thousand Oaks, CA, USA.

Jamison, R.S., Wilson, T. and Ryan, A. (2015), "Too Cool for School? The Relationship between Coolness and Academic Reputation in Early Adolescence", Social Development, Vol. 24 No. 2, pp. 384–403.

Katsikeas, C.S., Samiee, S. and Theodosiou, M. (2006), "Strategy fit and performance consequences of international marketing standardization", Strategic Management Journal, Vol. 27 No. 9, pp. 867–890.

Keller, K.L. (2003a), "Understanding brands, branding and brand equity", Interactive Marketing, Vol. 5 No. 1, pp. 7–20.

Keller, K.L. (2003b), "Brand Synthesis: The Multidimensionality of Brand Knowledge", Journal of Consumer Research, Vol. 29 No. 4, pp. 595–600.

Lee, J.L., James, J.D. and Kim, Y.K. (2014), "A Reconceptualization of Brand Image", International Journal of Business Administration, Vol. 5 No. 4.

Liu, H., Schoefer, K., Fastoso, F. and Tzemou, E. (2021), "Perceived Brand Globalness/Localness: A Systematic Review of the Literature and Directions for Further Research", Journal of International Marketing, Vol. 29 No. 1, pp. 77–94.

Loureiro, S.M.C., Jiménez-Barreto, J. and Romero, J. (2020), "Enhancing brand coolness through perceived luxury values: Insight from luxury fashion brands", Journal of Retailing and Consumer Services, Vol. 57, p. 102211.

Nunan, D., Birks, D.F. and Malhotra, N.K. (2020), Marketing Research: Applied Insight, 6th ed., Pearson, Harlow, Essex, UK.

O'Donnell, K.A. and Wardlow, D.L. (2000), "A theory on the origins of coolness", in Hoch, S.J. and Meyer, R.J. (Eds.), Advances in Consumer Research (Vol.27), Association Consumer Research, pp. 13–18.

Rosado-Pinto, F. and Loureiro, S.M.C. (2022), "Authenticity: shedding light on the branding context", EuroMed Journal of Business, doi: 10.1108/EMJB-08-2021-0115.

Saunders, M., Lewis, P. and Thornhill, A. (2016), Research Methods for Business Students, 7th ed., Pearson Education Limited, Essex, UK.

Sharifonnasabi, Z., Bardhi, F. and Luedicke, M.K. (2020), "How globalization affects consumers: Insights from 30 years of CCT globalization research", Marketing Theory, Vol. 20 No. 3, pp. 273–298.

Souiden, N., M'Saad, B. and Pons, F. (2011), "A Cross-Cultural Analysis of Consumers' Conspicuous Consumption of Branded Fashion Accessories", Journal of International Consumer Marketing, Vol. 23 No. 5, pp. 329–343.

Steenkamp, J.-B.E.M. (2020), "Global Brand Building and Management in the Digital Age", Journal of International Marketing, Vol. 28 No. 1, pp. 13–27.

Sundar, S.S., Tamul, D.J. and Wu, M. (2014), "Capturing 'cool': Measures for assessing coolness of technological products", International Journal of Human-Computer Studies, Vol. 72 No. 2, pp. 169–180.

UNCTAD. (2021), Estimates of Global E-Commerce 2019 and Preliminary Assessment of Covid-19 Impact on Online Retail 2020, United Nations.

Wang, P., Kuah, A.T.H., Lu, Q., Wong, C., Thirumaran, K., Adegbite, E. and Kendall, W. (2021), "The impact of value perceptions on purchase intention of sustainable luxury brands in China and the UK", Journal of Brand Management, Vol. 28 No. 3, pp. 325–346.

Warren, C., Batra, R., Loureiro, S.M.C. and Bagozzi, R.P. (2019), "Brand Coolness", Journal of Marketing, Vol. 83 No. 5, pp. 36–56.

Warren, C. and Campbell, M.C. (2014), "What Makes Things Cool? How Autonomy Influences Perceived Coolness", Journal of Consumer Research, Vol. 41 No. 2, pp. 543–563.

Watson, G.F., Weaven, S., Perkins, H., Sardana, D. and Palmatier, R.W. (2018), "International Market Entry Strategies: Relational, Digital, and Hybrid Approaches", Journal of International Marketing, Vol. 26 No. 1, pp. 30–60.

Wilkinson, S. (1998), "Focus group methodology: a review", International Journal of Social Research Methodology, Vol. 1 No. 3, pp. 181–203.

Yoo, B., Donthu, N., Lee, S., Boonghee, Y., Naveen, D. and Sungho, L. (2000), "An Examination of Selected Marketing Mix Elements and Brand Equity", Journal of the Academy of Marketing Science, Vol. 28 No. 2, pp. 195–211.

Zhao, H., Yao, X., Liu, Z. and Yang, Q. (2021), "Impact of Pricing and Product Information on Consumer Buying Behavior With Customer Satisfaction in a Mediating Role", Frontiers in Psychology, Vol. 12, p. 720151.

# CONSIDERATIONS ON CORPORATE CRIMINAL LIABILITY IN SOME EUROPEAN COUNTRIES- FRANCE, GERMANY, SPAIN AND BELGIUM

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## ABSTRACT

Despite a shared belief that corporates cannot be guilty of crimes, European countries have taken different approaches to corporate criminal liability. France has maintained an uncomplicated stance on the matter while Germany primarily relies upon its notion of culpability as legal grounds for responsibility. Spain is moving towards a more individualized perspective in regard to their entities' laws and regulations concerning this area. These various viewpoints reveal how each nation can shape the concept differently depending on ideological roots and practical considerations alike. As the concept of corporate liability evolves, Belgium is a leader in establishing tough consequences for entities. In its legal system, accountability can be held to a high standard and repercussions are directly applied.

*Keywords: societas delinquere non potest, corporate liability, criminal liability, corporate.*

## INTRODUCTION. THE RESEARCH OBJECTIVES. NEW DIRECTIONS FOR FUTURE RESEARCH

This paper focuses on the approaches adopted by France, Germany, Spain, and Belgium towards corporate criminal liability. We considered the following research objectives: 1) Look carefully into the legal framework that governs corporate criminal liability in each of these countries. 2) Assess the efficacy of their respective legal systems in deterring and punishing criminal activities committed by businesses. 3) Evaluate the application of corporate criminal liability in each country and compare the effectiveness of their approaches. 4) Determine whether there are any connections between various legal systems concerning corporate criminal liability, with a specific emphasis on the divergence between common law and civil law countries. 5) Spot opportunities to enhance the current laws and practices that ensure corporate compliance with the law. 6) Provide recommendations for improving corporate criminal liability in each of these countries. 7) Evaluate the differences in approaches taken by each country to determine whether there are lessons to be learned and to offer suggestions for improving corporate criminal liability across Europe as a whole. The objective of this paper is to present a thorough perspective on the topic's various aspects.

Corporate criminal liability is a crucial topic in the legal field and this article examines it in the context of France, Germany, Spain, and Belgium. By comparing these different systems regarding legislation, sanctions, and requirements, we hope to highlight their respective similarities and differences.

Legal entities, such as corporations, often see criminal offences committed by their directors, managers, and employees. Civil law jurisdictions have long followed the principle that legal entities cannot be held responsible in criminal law.

The regulatory framework governing corporate liability is continuously evolving in response to the increase in business-related offenses and the growth of corporate globalization. Different European domestic legal orders take contrasting stances on individual and corporate responsibility. Further, many companies function across borders, making it essential to establish consistent legislation concerning the liability of legal entities in Europe. Interpreters of the law, as well as managers and administrators, require a foundational understanding of national and European regulations governing legal entities. The antiquated notion that legal entities cannot be held accountable for crimes committed by their staff is being regularly challenged, with more governments adopting laws that hold corporations responsible for offenses committed on their behalf. To effectively prosecute companies for specific crimes, a thorough examination of various factors is necessary, such as the gravity of the offense and its potential impact on the public, prevalence of the wrongdoing throughout the corporation, and company management's complicity or endorsement of the illicit behavior. Additionally, past instances of criminal and regulatory conduct by the company must be evaluated, and all of these elements must be considered to reach an impartial and equitable outcome.

When a corporation willingly admits to wrongdoing and assists with the investigation, even by giving up attorney-client privileges if needed, it should be applauded. At the same time, it is essential to weigh the effectiveness of the company's compliance program and the actions it has taken to remedy the situation. This may involve terminating those who breached standards or introducing a new compliance program.

To ensure that justice is served for all parties involved, it is crucial to consider collateral consequences and non-criminal remedies. This includes evaluating potential harm to innocent shareholders and employees, as well as the effectiveness of civil or regulatory enforcement actions. By taking a comprehensive approach and considering all factors, a fair and equitable outcome can be reached.

The intricacy of assessing varied profiles and confronting the deep-set disparities in European criminal laws cannot be disregarded while considering the prospect of harmonizing them. The most significant discrepancies are evident between systems that prioritize practicality (France, Belgium) and

those rooted in a framework that places emphasis on theoretical classifications to define criminal activities (Spain and Germany). These differences pose numerous challenges that must be addressed. While there are noted variations among European legal systems, it is imperative to exercise significant prudence in seeking to harmonize these differences. Nonetheless, it is possible to highlight fundamental attributes that are generally shared across these systems. Specifically, all European legal approaches now encompass models for criminal prevention and codes of conduct applicable to different sectors of commerce – albeit with varying weight and emphasis.

A legislative intervention by the European Union in areas related to organized crime, money laundering, and corruption is desirable. This intervention would create a compliance program to prevent these crimes and establish criteria for holding entities accountable in the relevant sector. Initially, the EU could focus on addressing gaps and shortcomings in member states' systems. Since certain criminal phenomena are transnational, the EU's intervention should aim to prevent offenders from exploiting differences in national repressive systems.

Establishing the liability of entities can be achieved by following several guiding criteria. The first involves the position of the natural person, who is in a direct functional relationship with the organization of the entity. This relationship requires the natural person to adhere to specific obligations, functions, and regulations that ultimately guarantee the compromised asset, making the entity responsible. The second criterion requires the offense to occur as a result of an organizational gap within the enterprise. Finally, the offense must have been foreseeable and avoidable, according to the enterprise's regulations or the generic expectations of the entity's behavior concerning the protection of its assets. The proliferation and standardization of Codes of Conduct for Business and Industry Codes are indicators of the recognition of legal entity personality and the urgent need for standardization on a European level.

## CRIMINAL LIABILITY OF LEGAL PERSONS IN THE FRENCH LEGAL SYSTEM

In a nutshell, the French legislature exemplifies a robust and practical approach to the issue of attributing criminal liability, demonstrating an affinity for straightforward solutions instead of increasingly intricate doctrines regarding the criteria for imputing criminal liability to *personnes morales* (Villani, 2013). By selecting a conventional criminal system, the French legislative body declared that legal persons should be held to the same standards of justice as natural individuals; an unprecedented move employed without exception. The imputation criterion for which the French legislature opted was that of organic identification, or criminal liability attributed to the entity *by bouncing back*, by virtue of which the *personne moral* is liable for the mere fact that an individual, organ or representative has committed an offense by acting on behalf of the entity itself. Most of the representatives of French

doctrine have regarded this model of liability as perfectly in keeping with the classical categories of criminal law, probably without really questioning whether this system accords with the principles and structure of traditional criminal law. Only recently, under the impetus of case law and some authors, a certain evolution, not always linear, of this model has been observed. Some authors are beginning to perceive signs of a gradual departure of the criminal responsibility of the *personne moral* from that of the classical criminal law accustomed to operating repression solely on the behavior of physical persons. One begins, in short, to glimpse the breaking, even in France, of that close link of identification that has held and holds the imputation of the entity over that of the physical person agent. Consequently, a greater autonomy of imputation to the entity is making its way in France thanks to the gradual recognition of an entity's own culpability. This gradual change (Maréchal, 2010) (still in progress), has been arrived first through the legislative intervention of the law of June 12, 2000, which aimed at a reform of the liability of the natural person for involuntary offenses, in order to limit the incrimination of public decision makers; this law sought to disentangle the culpability of organizations from that of their individual members, consequently diminishing the bond between an individual's accountability and a corporate entity's.

Through the reformation of Article 121-3 within the Penal Code, individuals were not held liable for inadvertent damage caused if their action reflected no malice or intent. The dissociation from the liability of the entity derives from the fact that for it simple fault will suffice to integrate, along with the other necessary elements, the imputation (Daury-Fauveau, 2001).

Case law has also moved away from the *bouncing back* model of liability. It has expressed this view first and foremost in decisions in which it omitted, on the basis of reasons of expediency, to identify the natural person offender, while condemning the *personne moral*, imputing a presumption on the fact that the act or omission could not have been committed except by an organ or representative of the entity and noting that the action was performed on behalf of the entity itself. Finally, as it has already been noted in recent years (Gallois & Gallois-Cochet, 2012) jurisprudence has taken some steps toward seeking a liability proper to the entity, relying on the notion of enterprise policy, in the area of voluntary and involuntary offenses (Mayaud, 2006).

The French Court of Cassation has been steadfast in its resistance against attempts to shift jurisprudential interpretations, preferring instead an identification-based system which holds accountable entities through the actions or omissions of their organs and representatives (Saint-Pau, 2003).

## CRIMINAL LIABILITY OF LEGAL PERSONS IN THE GERMAN LEGAL SYSTEM

In 1953, the Congress of German Jurists spoke out against a penalization of corporations, probably in reaction to the trend resulting from the experience during the Germany of National Socialism, which advocated a collective criminal repression unprecedented in Europe. German criminal law, influenced by the said historical experience, unlike other European legal systems, does not provide for the application of purely criminal sanctions against collective entities. Despite the genetic opposition to the introduction of criminal repression against legal entities, Germany has also been under international pressure. It must be noted that the indications contained in the recommendations from the European institutions that initiated reforms in other EU countries have not been echoed in Germany; except for an applicative extension of administrative sanctions to entities in cases of infringements concerning the violation of the financial interests of the European Community.

Although the legal capacity of entities has historically been questioned by doctrine, it must be acknowledged that a criminal capacity of legal persons was admitted very early in Germany.

According to certain authors of German doctrine, since legal persons are unquestionably embedded in the social and legal world, they should be held capable of delinquency through the concrete actions of their organs or representatives (Jung, 2003). Due to an increasing adherence to a liability proper to collective entities, the idea of functional liability is also gaining ground in Germany, which, moving away from the idea of liability by personal fact, finds wider support among German criminal lawyers who are skeptical on the point, in connection with the lack of voluntariness of the acts of legal persons. In such a case, however, that behavior might be indicative rather of a defect in the functioning of the entity's system of organization is considered a culpable element. In fact, the opinion of most German jurists has rejected such a broad definition of fault of the legal person, fearing the doctrinaire, or worse legislative, construction of a form of strict liability. Therefore, even in Germany we find, at least in doctrine, the classic model of organic identification, according to which the fault of the responsible natural person can, under certain conditions, be imputed to the societas itself. On the other hand, the model of American origin known as *Vicarious Liability* (Gray, 2018)-which is based on the culpable behavior of the totality of natural persons who contribute to the externalization of the entity's action-which is more complex in theoretical terms, has found no adherence in Germany.

Despite this, the number of authors who adhere in one way or another to a form of accountability, criminal or para-criminal, of entities in Germany has increased from a decade ago. The reason most frequently given in order to justify the introduction of a sanction to societas in Germany is that without the said sanction, entities are allowed potential organizational irresponsibility within the operation of the enterprise. We will not insist in this article, to the criminological reasons (which

appear, by the way, to be self-evident) behind the need to sanction through a repressive-criminal or quasi-criminal system certain behaviors of entities. Suffice it to say that in Germany, although the legislature remains obstinate, and most of the doctrine continues to plead the need to keep the classical and personalistic structure of criminal law, some authors have posed and pose the problem of organizations in contemporary criminal law (Eidam, 1997).

The idea of part of the new generation of German jurists consists in a purely functional formulation of the criminal liability of corporations, based on the principle of prevention, and refined through a conception of special qualification of certain productive and economic activities, and therefore independent of the causative act and culpability. An ethical reaffirmation value is not perceived within the very mechanism of function that is placed under criminal trial. The organization must not only work efficiently, but ethically to prevent potential dangers and maintain a good reputation. Constructive regulation is critical for containing of criminal reproach, while having an organizational commitment towards social responsibilities helps bring positive economic-social outcomes which ultimately improve its culpability rating.

## CRIMINAL LIABILITY OF LEGAL PERSONS IN THE SPANISH LEGAL SYSTEM

In Spain, as in the other countries considered in this comparative analysis, there was a widespread belief that legal persons could not commit crimes. The doctrine was strongly opposed to a criminalization of societas. The reasons relating to the legislative decision not to proceed with the criminalization of corporations are more or less the same as those familiar from the previous cases, and we will not, in the present section, go over their elements in order to give space rather to the originality represented by the Spanish model (Hernández, 2004). The issue regarding the legislative evolution (Villacorta Hernández, 2017; Martín, 2016) driven by the European Union has also taken place through paths like those already traveled in France and Germany.

As a consequence of international obligations, the Spanish legislature embraced criminal liability for legal persons in 2010 (Morales, 2010). Although no specific treaties concerning qualification were assumed by Spain or its peers, this reformation granted accordance with similar measures already put into practice by France within their Penal Code.

It must be said that the reform formalized a custom that was already widely practiced in jurisprudence in Spain. As early as 1983, in fact, an instrument was added to the old Spanish Penal Code to avoid impunity for those who act, unlawfully, in the name and on behalf of a legal entity. But the most important step toward holding the entity accountable was taken in 1995 with Article 129 of the Code. This is an article that, in certain cases, authorizes the court to sentence the legal person to bear

accessory consequences for offenses committed by the entity's representatives, where the term accessory consequences turned out to be a euphemistic formula for disguising the application of real punishments to collective entities (Gómez Martín, Navarro Massip, 2016). In fact, in the category of "accessory consequences," sanctions as varied as the suspension of the entity's activity, the coercive closure of establishments, judicial receivership, and even the dissolution of the legal entity.

Although the application of the said legislation was reserved for entities whose activity was considered as a whole as criminal or to those with terrorist purposes (Bacigalupo, 2005), it remains interesting in that it is currently still in force in Spain and acts as a complement to the articles contained in the Penal Code after the reform. The Spanish legislature, through the introduction to Article 31 bis of the Penal Code, chose to qualify the liability of entities as criminal. But in Spain, several voices have also been raised from doctrine and jurisprudence to claim the purely formal nature of the criminal qualification of entities' offenses and to hypothesize a sui generis nature of corporate liability (Morales, 2010). The legal personality of the entity, also in Spain, has been derived from the legal personality of the civilist tradition, adopting in Spanish law a notion of legal person very similar to that arising from the doctrinal evolution analyzed in the present work in relation to the French civilists at the beginning of the last century (Delgado Sancho, 2019) Thus, the fundamental concepts of existence (birth, dissolution, functioning) of the collective entity were taken from civil law.

Even in Spain, the legislature excluded certain entities from the legislation. Attention is paid to the philosophy of the Roussonian tradition, according to which the state, as a supreme and unitary organ, cannot act through the predisposition of *jus puniendi* against itself, therefore, public administrations, political parties and trade unions (which are excluded because of the institutional role they are invested with, ignoring the phenomena of corruption in which they often become protagonists), as well as commercial companies of the state in care of the public interest, are excluded from criminal judgment. The exclusion of the commercial companies of the state that provide services of general interest has posed numerous problems regarding the question of understanding what precisely it means to "perform public functions and assume services of public interest." It must be specified that commercial companies under private law but with state participation were created in order to avoid underexposure to the overly stringent rules to which public law companies are subject. However, the fact remains that the services they provide are of a heterogeneous nature that is often confused with private interests. Therefore, in order not to risk creating a privileged regime for the said companies, a narrow interpretation of public interest would be necessary. Some authors (Bacigalupo, 2005) rightly point out that precisely because they are particularly required to safeguard, or even pursue, public interest objectives, such companies should be even more strictly controlled from the standpoint of the risk of the commission of crimes within them. The penalty system constituted by the

Spanish legislature provides for the imputability to the legal person of a *numerus clausus* of offenses. The list of possible crimes imputable to the entity was taken from the obligations of an international nature that led to the adoption of the relevant legislation. It is interesting to note that in Spain crimes of imprudence are equally subject to a *numerus clausus* regime in criminal matters, a fact that determines a parallelism between the crimes of qualified natural persons operating in positions of guarantee and those of then legal person. Article 31 bis of the Criminal Code places an emphasis on action taken by individual persons, referred to as "the fact of connection", in order for it be applied. It requires that criminal behavior has a material link back to senior executives; however, if deficiencies within obligations such as control and direction arise from subordinates, then their actions or omissions may also contribute.

Although the Spanish Criminal Code, in Article 31a, does not provide for aggravating circumstances for the entity- article 66a of the PC, as to the determination of the penalty for the legal person, refers to recidivism as a specific aggravating element-, it has constituted a list of mitigating circumstances, which the judge must take due account of, and which result in an easing of the entity's position before the criminal judgment, as well as a softening of the sanctioning response. It should be pointed out that all the mitigating circumstances contained in Article 31 bis, as is the case in other jurisdictions, are provisions that relate to the conduct of the entity carried out after, and not before or during, the commission of the crime.

## THE CRIMINAL LIABILITY OF LEGAL PERSONS IN THE BELGIAN SYSTEM.

Traditionally linked to the principle *societas delinquere non potest* (Bihain, 2001), Belgium was one of the most receptive countries, as well as one of the first, which, prompted by international recommendations and multiple reports of parliamentary commissions of inquiry, adopted a law, on May 4, 1999, constituting the criminal liability of entities. The Belgian legal system decisively acknowledges the distinct and autonomous character of an entity (Nihoul, 2005), setting forth a technical reality theory in lieu of classic fictionalism. This framework is postulated to enable entities to develop independent preferences with which they pursue their own objectives without any requirement for identification or criminal liability on behalf of natural persons involved. These provisions constitute fundamental principles upon which foundational statutes concerning corporate justice are based. Many authors (Bosly, 1999; Hannequart, 1999) affirm the necessity of various safety measures which rely on an equitable criminal liability system between natural and legal persons. It is believed that a heinous act can be attributed to both categories, reflective of their own respective capacities for action. Thus, penalizing those who fail to follow necessary protection protocols or are involved in unlawful activity while adhering to the principles laid out by personality-based criminal

responsibility such as absolving third parties from blame due being indirectly liable. Judicial authorities must consider all elements of a criminal act when deciding liability, regardless of if the accused is a natural or legal entity. It is Article 5 of the Code that imposes the principle of criminal liability of entities in Belgium and limits its scope of application (Nihoul, 2005). Criminal liability applies, in principle, to all legal entities; in Belgium, too, the defining parameters of legal personality are borrowed from civil and commercial law. Thus, the law applies to entities with legal personalities, including commercial companies under public law. The Belgian Penal Code, in Article 5, assimilates legal persons with criminal capacity to certain collective entities lacking legal personality, such as participated companies and those for commercial purposes lacking the said formal personality and civil companies. Some among them, in addition to lacking formal legal personality, also lack assets, a fact that makes it difficult, if not impossible, to enforce the penalties provided. On the other hand, de facto associations, such as political parties and trade unions, are excluded from the list of legal persons to which criminal law may apply. Article 5 of the Criminal Code excludes from the scope of criminal liability of entities a number of collective bodies under public law that are vested with legal personality, and whose organs are democratically elected; these are the federal state, regions, municipalities, provinces, territorial bodies and public social aid centers. According to Article 5 of the Belgian Penal Code, a crime can be imputed to the legal entity when the crime is intrinsically linked to the realization of its corporate purpose, or to the defense of its interests, or, finally, when the concrete facts show that the crime was committed on behalf of the entity (Gerard, 2001). The legislature intended to impute to the entity only those crimes that have a connection with the entity, averting the possibility that the legal entity could be imputed with crimes to which it is unrelated.

A crime will actually be imputable to the legal person when it is intrinsically linked to its corporate purpose, although the crimes need not relate to the corporate purpose of the entity, but it will suffice if they are committed in order to achieve the corporate purpose, instrumentally. So, in principle, the entity should not be held criminally liable if the crime, such as theft, fraud, or abuse of corporate assets, is committed to its detriment. The legislature aims at the punishment of crimes intrinsically related to the defense of the entity's interests, so that punishable acts that would not be related to its corporate purpose, but are nevertheless committed on its behalf and through which it derives an advantage of any kind (economic, financial, moral, etc.), or which enables it to avoid a loss, injury, or simple inconvenience. Finally, an offense has been committed on behalf of the legal person when it has been caused by a natural person capable of entailing the commitment of the legal person, provided that he or she does not act in his or her personal interest by profiting from his or her position as an organ or representative. Thus, it would generate the liability of the enterprise, the site manager who hires foreign workers without work permits; in parallel, the crime of active bribery committed by the

enterprise manager in order to obtain a public tender; even in that case, it is not required that the enterprise has made a profit. The Belgian legislature wanted to set up direct criminal liability for entities. Despite the good intentions, the legislature has been careless in attaching a sound theoretical approach to its purposes, but especially in indicating to the court how to establish the moral element of the crime in the head of the legal person. Significant in this regard is the opinion of the Council of State in which it was found that in order to establish the moral element of the crime in the head of the legal person, the legislature essentially does no more than defer to the establishment of the same in the head of a qualified set of natural persons. Managers must have knowledge of or incite to the crime. In the case of unintentional crimes, it must be shown that the management was negligent in taking measures to prevent said crimes. The judge will have to examine the decisions of the moral person assuming that it pursues its own goals, which are not necessarily identified with those of the natural persons in it. Thus, even if the natural person perpetrator of the material element cannot be identified criminal liability may still be imputed to the entity. When, on the other hand, it is required to integrate the elements of the specific offense that an intentional element be detected, the Supreme Court admits that it is sufficient to find that the managers were aware of the intention to commit the crime and consented to it.

In short, even the tacit consent of executives to acts constituting an offense would suffice to integrate the liability of the entity, as may be the absence of opposition of the company's collegiate bodies to the performance of said acts. When even the de facto organs, thus not the management, engage the legal person in criminal acts, the latter may be cause for imputing to the entity the crimes arising from such activities, except when they use it for personal ends and thus use the entity as a mere instrument for implementing criminal designs that benefit themselves exclusively (Kefer, 2000). Furthermore, when fault, simple or qualified, is required for the integration of the crime, the entity will be imputed when it presents a defective organization, in terms more or less similar to those already seen in the Spanish case. This is the organizational fault of the entity, which in Belgium has the particularity of being assimilated to the civil law fault linked to the notion of a good father, that is, related to the normal prudent and diligent undertaking in the specific considered field of activity. The risk, however, remains that in jurisprudence, through inaction, the moral (psychological) element at the head of the natural person is deducted from the culpable element linked to the natural person through whom the offense was carried out materially realized the crime.

## CONCLUSIONS

France was indisputably innovative in its reform of the liability of *personnes morales*, breaking away from a traditional principle that had been prevalent since ancient Roman law. Ignoring doctrinal

elaborations and motivated by criminological pragmatism, French legal authorities took pioneering steps towards entity penalization prior to many other countries.

Corporate crime has been on the rise, and with it, a need for an effective criminal law response to dangerous and potentially harmful actions. This new understanding of corporate criminality focuses more tightly on individual responsibility in order to ensure greater justice is served - holding those who make misguided decisions accountable for their consequences.

Rather than becoming embroiled in a lengthy and complex German-style process for assigning criminal responsibility to entities, the French legislature chose an easier route instead. By incorporating specific regulations into their system of laws (the Code) they enabled *personnes morales* - legal bodies - to be held accountable just as natural persons can.

The French legislature recently adopted the controversial "identification organique" or liability par ricochet/bouncing back model to determine criminal responsibility for organizations. This criterion holds a legal person liable for any crimes committed by its representative who acted on behalf of them – however this approach is being seriously challenged due to questions surrounding its systemic coherence.

Despite the abundant discussion that has arisen about corporate criminal liability in Germany, its legal system remains steadfastly committed to a centuries-old concept: *societas delinquere non potest.* This Latin idiom which translates as "a corporation cannot commit a crime" is sadly still held up today - unlike many other countries who have adopted measures of both corporate and hybrid culpability for illegal activities.

Germany employs a strict approach when it comes to punishing legal entities for committing crimes. With Section 75 of the German Criminal Code, the country can confiscate any assets deemed related or instrumental in carrying out an offense—effectively neutralizing its ill-gotten gains without making a formal declaration of guilt. This is seen as both preventative and potentially punitive measure that takes away what was acquired unlawfully.

In Germany, corporate criminal liability has a basis in German law - namely that fines may be issued to legal entities for certain administrative offenses. This model is founded upon the principle of organic identification and shows an "advantage" was gained by the entity as a result of either actions or inaction from one its representatives or managers when carrying out their professional duties. It's worth noting this approach forms part of a far deeper set-up within which there lies strong commitment towards ensuring culpability remains at the core foundation regarding questions of criminality and justice.

The Spanish legislature has boldly implemented criminal liability for legal persons in their Criminal Code, showing the world that they are committed to fulfilling all their international

obligations. With this move, Spain firmly and unambiguously expresses its commitment to treating corporate entities with a strictly criminal qualification.

Article 31 bis of the Criminal Code requires a real person's involvement for it to be effective. This means that senior executives must commit or omit certain actions, but their subordinates could also be implicated if there was an oversight on behalf of those with responsibility over them. Ultimately, justice will only prevail if all parties are properly held accountable for any wrongdoing associated with this law.

The Spanish legislature has crafted a system to both encourage cooperation between corporations and the state and provide incentive for companies that take preventive steps against committing corporate crimes. While this model of entity liability is constantly progressing, it still falls short in discouraging organizations from merely punishing those who disobey regulations instead of finding creative ways to tackle criminal activity within their ranks.

In Belgium, criminal liability for entities is taken seriously. Unlike other countries, the Belgian system does not require that individual persons responsible be identified in order to find a company accountable. To reconcile this with its legal philosophy of corporate responsibility, it adopted an approach termed "theory of technical reality," believing companies have their own separate existence and can make decisions independent from those involved in forming them.

After careful consideration, the legislature determined that criminal liability should apply to both natural and legal persons. As a result of this choice, measures have been put in place which equate any action or inaction done by a company with that of an individual. The reasoning behind this is based on the belief that companies can be held directly accountable for their deeds—granting them specific capacity to make decisions worthy of criminal imputation when necessary.

The legislature has implemented the principle of personality in criminal liability by creating a framework for legal persons to be held culpable. This means that, instead of simply adhering to pre-established models, judges need to look closer at each case and verify whether an individual or company is actually guilty. Thus, it can no longer hide behind concepts such as indirect guilt–it must own up when it does wrong.

In Belgium, a deep-rooted adherence to the notion that legal entities should be considered as persons has spawned debate around whether organizational guilt is separate from any individual actions it entails. Could this signify a new offense in its own right, distinct from anything individuals are held accountable for?

## REFERENCES

1. Bacigalupo, E. (2005), Teorías de la Pena y Responsabilidad Penal de las Persona Jurídicas. En: Curso de Derecho Penal Económico, Madrid-Barcelona, Marcial Pons, Ediciones Jurídicas y Sociales, S.A., pp. 43-59.

2. Bihain, L., (2001), «Responsabilité pénale des personnes morales: présentation synthétique », J.L.M.B., pp. 410-416.

3. Bosly, H-D (1999), «Le nouveau droit pénal des sociétés» actes du colloque intitule Le nouveau code des sociétés organise le 24/11/1999 a l'UCL, Bruxelles, Bruylant, pp. 331-361.

4. Daury-Fauveau, M. (2001), Conditions de la responsabilité pénale des personnes morales après la loi du 10 juillet 2000, JCP n° 21, n° 10535.

5. Delgado Sancho, C.D. (2019), Responsabilidad penal de las personas jurídicas, 34 delitos por los que pueden responder las sociedades mercantiles, Editorial Colex, Coruña.

6. Deruyck, F. «La loi du 4 mai 1999 sur la responsabilité pénale des personnes morales », R.D.C., 1999, pp. 653 and the ff..

7. Eidam, G. (1997), Straftäter Unternehmen, München, pp. 30 and the ff.

8. Gallois, A. & Gallois-Cochet, D. (2012), L'imputation d'une infraction attitrée à une personne morale. Étude à la lumière du droit pénal des sociétés, in Mélanges en l'honneur de Ph. Merle, Dalloz, déc., p. 279.

9. Gerard, K., La loi du 4 mai 1999 relative à la responsabilité pénale des personnes morales, Journ. proc., 2001, liv. 411, pp. 16- 18

10. Gómez Martín, V., Navarro Massip, J. (2016) «La responsabilidad penal para personas jurídicas en el Código penal español: una visión panorámica tras la reforma de 2015», en Revista Aranzadi Doctrinal, núm. 1, p. 30.

11. Gray, Anthony (2018), Vicarious Liability: Critique and Reform, Bloomsbury Publishing, United Kingdom.

12. Hannequart, Y. (1999), La responsabilité pénale des personnes morales : punir l'être collectif ou corriger ses déficiences ? J.T., pp. 281-283.

13. Hernández, A. (2004), Actualidad e Importancia de la Responsabilidad Criminal de las Personas Jurídicas y su Incorporación en el Anteproyecto del Código Penal. Anteproyecto Código Penal –Comentarios-. Serie normativa, núm. 5, pp. 93-116.

14. Kefer, F. (2000), « La responsabilité pénale de la personne morale : une réponse de plus à la délinquance d'entreprise », Le point sur le droit pénal, Liège, Formation permanente CUP, volume 37, pp. 7- 40

15. Maréchal, J.-Y. (2010), Un pas de plus vers la responsabilité pénale directe des personnes morales, D. 2010. 2135.

16. Martín, L. (2016), «Crítica de las modernas construcciones de una mal llamada responsabilidad penal de la persona jurídica», en Revista electrónica de Ciencia Penal y Criminología, 18-05, pp. 6 and the ff.

17. Mayaud, Y. (2006), Vers une nouvelle conception de la responsabilité des personnes morales du chef des délits non intentionnels? RSC 825.

18. Morales, F. (2010), La Responsabilidad Penal de las Personas Jurídicas (arts. 31bis, 31.2 supresión, 33.7, 66bis, 129, 130.2 CP). En: Gonzalo Quintero Olivares (Dir.), La Reforma Penal de 2010: Análisis y Comentarios, pp. 45-70. Madrid, Editorial Aranzadi-Thomson.

19. Nihoul M. (2005), La responsabilité pénale des personnes morales en Belgique, La Charte, p. 26 and the ff.

20. Saint-Pau, J.-C. (2003), La responsabilité des personnes morales: réalité et fiction, in Le risque pénal dans l'entreprise, Litec, n° 150 s., p. 95 and the ff.

21. Villacorta Hernández, M. A. (2017), «La responsabilidad penal de las empresas», in Revista Contable, n.º 53, marzo 2017, p.2 and the ff.

22. Villani, E. (2013), Responsabilité (pénale) des personnes morales et mesures d'organisation pour la prévention des infractions dans le cadre d'un modèle européen de responsabilité, in G. Giudicelli-Delage, S. Manacorda (dir.), La responsabilité pénale des personnes morales: perspectives européennes et internationales, Société de législation comparée, p. 71.

23. Jung, Heike (1993), La responsabilité de la personne morale dans le droit pénal allemand in Les petites affiches, Numero120, pp. 77 - 78.

# CRITICAL SUCCESS FACTORS OF THE MERGERS AND ACQUISITIONS PERFORMANCE: INTERRELATIONSHIP OF PLANNING STAGE (PRE-MERGER) AND INTEGRATION PROCESS (POST-MERGER)

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## ABSTRACT

This paper investigates success factors for mergers and acquisitions that usually have high failure rate. Some of those factors are neglected from current research and/or do not explored at the same time in a coherent systematic study. Specifically, it explores the effects of planning steps (at pre-merger stage) including, for instance, due diligence analysis, cultural differences analysis, planning for post-merger integration, as well as negotiation stage, and integration process (at post-merger stage) on effectiveness of integration process and the overall M&A performance. The research uses quantitative method to analyse the information and multiple regression analysis test the hypotheses. The key findings of the study highlight that success of M&As is influenced by several factors at the pre- and post-merger phases. This study offers suggestion for managers in M&A to pay more attention during all stages of M&As, such as preparing and conducting detailed planning before, and during, negotiation, as well as at the integration process. For example, choosing the appropriate integration approach and pay attention to integrated-related decisions to achieve higher effectiveness of integration process and higher success in M&A performance.

Keywords: mergers, acquisitions, critical success factors, planning stage (pre-merger), integration process (post-merger)

## 1. INTRODUCTION

Mergers and acquisitions (M&As) have been the most radical strategies adopted by most firms as a value creation avenue (through acquiring market leadership, combination of complementary assets) to improve their functions and enhance competitive advantages to compete in very challenging market place (Bain & Company, 2020; Giessner, Horton, & Humborstad, 2016; PWC, 2022). Over the last 30 years, many disciplinaries of researchers and practitioners show significant interest to conduct M&As research and their findings reveal that M&As continue to experience high failure rates (Cartwright & Schoenberg, 2006; Dauber, 2012; Gomes, Angwin, Weber, & Tarba, 2013; Martin, 2016). Reports record

the failure rate about 40 to 60 percent  (Bain & Company, 2020; Bagchi & Rao, 1992; Homburg & Bucerius, 2006; Homburg & Pflesser, 2000), 60 to 80 percent of acquisitions fail to create value after mergers (Angwin, 2007; Groen & McCarthy, 2011) and between 50 to 75 percent of all post-merger integrations fails to meet the objectives due to cultural clashes (Financial Worldwide, 2022). Harvard Business Review recently reports that the failure rate of M&A even sits between 70 percent and 90 percent  (Christensen, Alton, Rising, & Waldeck, 2011; Kenny, 2020). Despite the high failure rates, nevertheless the activities of M&As continue to accelerate and money invested in M&As is increasing year after year.

M&A is an important strategy for firms to pursue growth and be competitive (Cartwright & Schoenberg, 2006). Managers believe that M&As serve as quick and an effective way to respond to market economy as a strategy for organizational to survive and succeed. According to Eccles, Lanes and Wilson, (1999, p. 136) "*despite 30 years of evidence demonstrating that most acquisitions don't create value for the acquiring company's shareholders, executives continue to make more deals, and bigger deals, every year*". Consistently, top executives and directors are motivated to pursue M&As to accelerate companies' growth through acquiring new products, accessing new customers segmentations and expansion to new territories (Weber, Tarba, & Oberg, 2014). Citizens 12th annual survey finds that 58% of survey respondents (CEOs and CFOs) from 400 U.S. middle market companies believe that M&As remain to be the "primary growth driver" for their companies to increase revenue in 2022 (Citizens, 2023). During the time of economic disruption and company's low growth period, leadership in the faster-growing companies are using a repeatable M&A as their main strategy to systematically enter into market and accelerate new growth businesses (The Bain Global M&A team, 2020). Despite the continuing uncertainty in the macro-economic outlook, the trend of M&A shows a surge in M&A activity which M&A veterans constantly require new tools for analysis and integration to manage the deals to achieve maximum benefit through new organizational efficiencies, market expansion, employee development, product innovation, and manage profit to achieve higher M&A success (McKinsey & Company, 2010). McKinsey Insight shares that among the 50 largest transactions of Asian acquirers in the past five years, 72 percent of them have communicated that the aspiration is to focus on growth through M&A (Anand, Awasthee, & Bonheure, 2022).

The purpose of this paper is to investigate success factors for mergers and acquisitions that usually have high failure rate. Some of those factors are neglected from current research and/or do not explored at the same time in a coherent systematic study. Specifically, this paper explores the effects of planning steps (at pre-merger stage) including, for instance, due diligence analysis, cultural differences analysis, planning for post-merger integration, as well as negotiation stage, and integration process (at post-

merger stage) on two major factors of success. These factors are the effectiveness of integration process and the overall M&A performance.

The following areas are identified as the gaps in relation to the pre and post-merger stages that are influencing critical success factors of M&As performance: 1) Different disciplinary focuses at different stages of M&A; 2) Different focuses of research stream in variables; and 3) Lack of interrelationships between pre- and post-merger stages.

## 2. HYPOTHESIS DEVELOPMENT

*2.1. Planning level and M&A performance*

The critical success factors of M&A performance hinges on important activities at the planning stage (pre-merger). At the planning stage (pre-merger), an extensive decision making, planning and positioning process are included (Cartwright & Cooper, 1990; Hunt, 1990; Picot, 2002). Schweiger, Csiszar and Napier (1993) highlight that company should form the planning team as early as possible to discover gaps and develop strategic planning immediately when the two companies come together.

**H1:** *The higher the planning level the higher M&A performance*

*2.2. Due diligence analysis and M&A performance*

Rankine, Bomer and Stedman (2003) express that due diligence analysis can improve the decision-making process by introducing comprehensive testing, reviewing and revising the M&A strategy. This exercise can help to minimize the risk associated with M&As enabling the best deals and terms in the negotiation process to increase M&A performance. Harvey and Lusch (1995) justify the importance of a rigorous due diligence as many acquiring firms' costs of M&As are much higher than the price paid at the purchase due to the additional cost to uncover problems after the transaction. Grundy (1996) believes that the M&A investments are like a tip of an iceberg, with the acquiring firm often seeing only a portion of the investment and not all.

**H1a:** *The more intensive due diligence analysis at planning stage the higher M&A performance*

*2.3. Cultural differences analysis and M&A performance*

Hofstede (1991) reveals that cultural differences are the major contribution of conflicts between the acquired and acquiring firms in M&As. One of the single biggest impact whether a business will be successful in M&A is the business culture of the company (Krallinger, 1997). Many researchers point out the importance of understanding cultural differences at integration process during the post-merger integration period as a crucial contribution to M&A outcome (Angwin & Vaara, 2005; Brannen & Peterson, 2009; Sarala, 2008; Stahl & Mendenhall, 2005;). The analysis of cultural differences during the planning stages includes the degree of cultural differences of the different dimensions serves as an

indication of future problems and challenges to be incurred, and cost which will significantly affect M&A performance (Weber, et al., 2014).

**H1b:** *The more intensive cultural differences analysis at planning stage the higher M&A performance*

*2.4. Negotiation process and M&A performance*

Scholars argue that a successful M&A performance strongly correlated with early and ongoing cooperative negotiations, until the deal is actually signed (Saorín-Iborra, 2006, 2008; Sebenius, 1998). The importance of planning in negotiation: "*Effective negotiation is 80 percent preparation. Fail to prepare and you prepare to fail."* Negotiation plays an important role especially in the process of M&A to ensure an agreeable deal goes through for both parties (Rich, 2011). The success of negotiations hinges on understanding of different characteristic of national cultures Hofstede and Peterson (2000). The failure to plan the negotiation process can lead to the adverse consequences of M&A performance (Weber, Belkin, & Tarba, 2011).

**H1c:** *The more intensive negotiation process at planning stage the higher M&A performance*

*2.5. Integration planning and M&A performance*

Research conlcudes that integration planning for M&As should begin as soon as possible after the target firms are identified (Howson, 2003; Carey & Ogden, 2004; Recardo & Toterhi, 2015). Weber et al., (2014) opine that a well-planned integration process can impact the strategic and financial estimates, the negotiation process, and the screening and ranking of potential acquisition candidates, ultimately affecting the M&A's success. For a successful outcome of an M&A deal, it is inevitable that an integration team needs to establish at the beginning of the deal, after the deal is signed, and the deal can then be announced in a proper manner (Frankel & Forman, 2017).

**H1d:** *The more intensive integration planning at planning stage the higher M&A performance*

*2.6. Planning level and effectiveness of integration process*

Several researchers identify the critical role of assembling information about human resource practices, organizational culture and structure, and making a detailed outline for anticipated organizational change, including the selection of a leader and management team to be in charge of the integration stage (Haspeslagh and Jemison, 1991; Schweiger, et al., 1993). At the planning stage, the aim is to analyse the potential challenges that will affect the integration process in order to achieve synergy realization (Weber et al., 2014). Further studies encourage in exploring the integration management at the different levels by comprehending the types of conflicts during the process (Chiambaretto, 2016).

**H2:** *The higher the planning level the higher the effectiveness of integration process at post-merger.*

*2.7. Due diligence analysis and effectiveness of integration process*

McGrady (2005) states that the evidence of due diligence and integration needed to be improved is compelling. Research and experience indicate that intangible areas may hold the key for improvement,

so why nothing have happened to incorporate these elements within most due-diligence exercises? Due diligence is an essential source of data for the planning team to implement integration of the two businesses as it helps to identify the key areas and pieces that will be needed to be integrated (Frankel & Forman, 2017). It should scope out "key early issues and alarms" that can enable acquirers to prioritize and pay attention on key issues (Bing & Bing, 2008). According to Hay Group in France research, 58 percent of business leaders overlook in the assessment of the intangible asset (human capital issues and cultural differences) of the acquired company during due diligence process which subsequently affects integration process and its effectiveness (Forbes Magazine, 2007).

**H2a:** *The more intensive due diligence analysis at planning stage the higher the effectiveness of integration process at post-merger.*

*2.8. Cultural differences analysis and effectiveness of integration process*

The impact of cultural differences on the integration process (post-merger) is raised in the integration process (post-merger) literature (Buono, Bowditch, & Lewis, 1985; Carleton, 1997; Marks & Mirvis, 2010; Norburn & Schoenberg, 1994). Many researchers view that the cultural differences and the effort involved in integration process are important in M&As (Cording, Christmann, & King, 2008; Sarala, Vaara, & Junni, 2019; Teerikangas & Very, 2006; Sarala & Vaara, 2010; Weber, et al., 1996; Weber, et al., 2011; Weber, et al., 2012). The exploration of similarities and compatibility between two organizations in post-merger phases is one of the hot topics in M&A research (Buono, Bowditch, & Lewis, 1985; Cartwright & Cooper, 1996; Gertsen, Søderberg, & Torp, 1998). There has been much research conducted attempting to prove that cultures which are more similar will integrate more smoothly and effectively at integration process process (Datta & Puia, 1995).

**H2b:** *The more intensive cultural differences analysis at the planning stage the higher the effectiveness of integration process at post-merger.*

*2.9. Integration planning, integration process and effectiveness of integration process*

Integration planning plays a crucial role in M&As (Angwin & Meadows, 2015; Graebner, et al., 2017; Steigenberger, 2016). Several researches call for early planning of integration (Weber et al., 2014), forming steering committee (Galpin & Herndon, 2014), establishing dedicated intergration team at planning stage (Inkpen, Sundram, & Rockwood, 2000; Morosini & Radler, 1999; Schweiger, et al., 1993), developing plan for guiding integration (Robers, 1994) and formulating an action plan with common vision and clear goals (Carter & Greer, 2013) in order to ensure success of integration process. A high level of management attention along with a carefully and thoroughly planned integration plan is particularly important to avoid negative curves and helps to improve integration process and its outcome (Yu, et al. 2005; Zollo & Reuer, 2010).

**H2c:** *The more intensive integration planning at the planning stage the higher the effectiveness of integration process at post-merger stage.*

**H3:** *The more intensive integration process at post-merger stage the higher the effectiveness of integration process at post-merger stage.*

*2.9. Integration process, effectiveness of integration process and M&A performance*

Without well-planned of integration process resulting in effective integration, the expected value to be derived from M&A is unachievable (Schweiger, et al., 1993; Schweiger & Goulet, 2000). Even though there is a great deal of interest in studying the performance of M&A deals (Zollo & Meier, 2008), these is still no definitive answer to the critical question of "how does the management of post-merger integration process impacted the M&A performance" (Ahammad & Glaister, 2011; Gomes, et al., 2013; Haleblian, et al., 2009; King, et al., 2004). A number of studies highlights that post-merger integration plays a significant role in the success of M&A transactions (Angwin & Urs, 2014; Duncan & Mtar, 2006; Heimeriks, et al., 2012; Weber, et al., 2011).

**H4:** *The more intensive integration process at post-merger stage the higher M&A performance.*

**H5:** *The higher the effectiveness of integration process at post-merger stage the higher M&A performance.*

## 3. RESEARCH METHODOLOGY

When going through the investigation of the critical success factors of M&A performance, both the independent variables planning level (including due diligence, cultural differences, negotiation process and integration planning), integration process and effectiveness of integration process, and the dependent variables effectiveness of integration process and M&A performance are clearly identified and specified. The quantitative research method is employed as a casual research design to show that one or more variables at the planning stage (pre-merger) would cause or determine the values of other variables at the integration process (post-merger) and M&A performance.

*Sampling*

The target population are companies in Singapore involving in M&As, without focusing on any specific industry. The data and information of companies who are involved in the M&A deals in Singapore (domestic, inbound and outbound) during the period 2014 – 2016 are extracted from the record of Institute for Mergers, Acquisitions and Alliances (2021).

*Data collection*

A total of 1000 surveys are sent progressively in March and May 2019. The data collection took place 3 – 5 years after the acquisition date. It is essential to allow enough time for the integration process to develop into a meaningful way after the acquisitions (Haspeslagh & Jemison, 1991). The reason for selecting firms performing M&As between 2014 – 2016 is because the survey is carried in 2019 and

respondents will have the hindsight of M&A activities and performance after 3 years or more when responding to the survey. The response rate is 40.4%. Through the survey, out of the total of 404 respondents, 276 (68.3%) are from the buying companies and 128 (31.7 %) from the target companies.

## 4. RESULTS

*Multiple regression and Pearson's correlation*

Multiple regression and Pearson's correlation are processed to predict M&A performance from planning level (including due diligence, cultural differences, negotiation process and integration planning) and integration process (post-merger); and another is processed to predict integration process effectiveness from planning level (including due diligence, cultural differences, and integration planning) and integration process (post-merger).

As shown in Table 1 Means, standard deviation (SD), and for dependent and independent variables. The Pearson's corelations r between independent variables and dependent variables are either moderate (0.356 to 0.446) to large (0.506 to 0.781) according to Cohen (1988). All Pearson's correlations r are statistically significant as $p < 0.001$. This suggests that there are positive associations between all the independent variables and the dependent variables.

Regression coefficients and standard errors for dependent variable M&A performance[a] are as shown in Table 2 Regression coefficients – M&A Performance[a] . The regression equation for M&A performance with independent variables planning level (including due diligence, cultural differences, negotiation process and integration planning), integration process (post-merger) and integration process effectiveness can be expressed as follows:

M&A performance = $B + B_1$(planning level) + $B_2$(due diligence) + $B_3$(cultural differences) + $B_4$(negotiation process) + $B_5$(integration planning) + $B_6$(integration process, post-merger) + $B_7$(integration process effectiveness) + E.

The results in Table 2 show the effects of each independent variable on M&A performance while other independent variables are neutralized. As M&A performance is a function of many independent variables, it is very difficult to observe the influence of these independent variables if it is viewed in totality. Planning level, integration level and integration process effectiveness are significant for M&A performance while due diligence is low significant albeit negatively. Planning level also has an influence on integration process effectiveness (please see below on further discussion). The results suggest that all activities in planning are critical for M&A performance.

Regression coefficients and standard errors for multiple regression of integration process effectiveness are as shown in Table 3 Regression coefficients – effectiveness of integration process[a]. The regression

equation for integration process effectiveness with independent variables planning level (including due diligence, cultural differences and integration planning) and integration process (post-merger) can be expressed as follows:

Integration process effectiveness = B + B$_1$(planning level) + B$_2$(due diligence) + B$_3$(cultural differences) + B$_4$(integration planning) + B$_5$(integration process, post-merger) + E.

The results in Table 3 show that cultural difference, integration planning and integration process have significant effect on integration process effectiveness. Planning level also has a low significant effect on integration process. Due diligence's effect on integration process effectiveness is not significant.

| | Mean | SD | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. M&A Performance | 3.48 | .855 | (.935) | | | | | | | |
| 2. Planning Level | 3.59 | .568 | .530* | (.930) | | | | | | |
| 3. Due Diligence | 3.43 | .637 | .356* | .599* | (.843) | | | | | |
| 4. Cultural Differences | 3.11 | .806 | .389* | .580* | .405* | (.843) | | | | |
| 5. Negotiation Process | 3.61 | .557 | .378* | .644* | .537* | .432* | (.721) | | | |
| 6. Integration Planning | 3.49 | .715 | .549* | .656* | .549* | .446* | .513* | (.846) | | |
| 7. Integration Process Post Merger | 3.57 | .621 | .512* | .621* | .506* | .525* | .508* | .656* | (.861) | |
| 8. Integration Process Effectiveness | 3.39 | .706 | .781* | .507* | .411* | .419* | .388* | .549* | .539* | (.829) |

Table 1. Means, standard deviations (SD), Pearson's correlation r for all variables and reliabilities[a]
*p < 0.001
[a]Cronbach Coefficient Alpha in parenthesis

| Independent variables | Std. Error | Beta |
|---|---|---|
| 1 (Constant) | .194 | |
| Planning Level | .076 | .161** |
| Due Diligence | .054 | -.082* |
| Cultural Differences | .041 | -.014 |
| Negotiation Process | .063 | -.007 |
| Integration Planning | .055 | .112* |
| Integration Process (Post-Merger) | .062 | .035 |
| Integration Process Effectiveness | .046 | .661*** |
| | | |
| Model (N = 400) | | |
| F-statistic | 101.235*** | |
| R2 | 0.644 | |
| Mean (S.D.) of dependent variable | 3.49*** (0.51396) | |

Table 2. Regression coefficients – M&A performance[a]
a The research hypotheses are tested using standardized abnormal return measures as the dependent variable.
*p <.05; **p <.0.01; ***p<0.001

| Independent variables | Std. Error | Beta |
|---|---|---|
| 1   (Constant) | .196 | |
| Planning Level | .078 | .111 |
| Due Diligence | .057 | .049 |
| Cultural Differences | .044 | .103* |
| Integration Planning | .058 | .258*** |
| Integration Process Post Merger | .066 | .221*** |
| | | |
| Model (N = 400) | | |
| F-statistic | 48.430*** | |
| R2 | 0.381 | |
| Mean (S.D.) of dependent variable | 3.3850*** (0.41065) | |

Table 3. Regression coefficients – effectiveness of integration processa
a The research hypotheses are tested using standardized abnormal return measures as the dependent variable.
*p <.05; **p <.0.01; ***p<0.001

## CONCLUSION

The findings of this research provide the understanding that planning factors at pre-merger and post-merger stages appear important to M&A performance and integration process effectiveness. According to many researchers' findings, the M&A process is a complex task, and a wide range of factors determine its success or failure (Weber, et al., 2014). Some other research works demonstrate that well-planned M&A activity will result in constructive outcomes on the acquiring firm's performance and its competitiveness in the market (Asimakopoulos & Athanasoglou, 2013; Tse & Soufani, 2001). Though numerous researchers concentrate on the M&A strategy and process, nevertheless, few successfully define the factors influencing M&A performance (Peng & Fang, 2010). From the various literature reviews, obviously to note that at the planning stage (pre-merger), there is a lack of studies linking pre-merger variables to those affecting post-merger in M&A research in order to understand the success of these transactions (Gomes, et al., 2013; Weber, 2011; Weber & Fried, 2011). And at the integration process (post-merger), there is also a lack in the research to connect the interrelationships of the variables (Weber, Tarba & Rozen-Bachar, 2011; Weber, Tarba, Stahl & Rozen-Bachar, 2012). The researches of critical success factors often stay within or separate in pre- and post-merger stages (Jemison and Sitkin, 1986; Haspeslagh & Farquhar, 1994; Meglio & Risberg, 2010; Weber, 2011). Some studies focus in the process approach in the post-merger stage rather than linking the whole M&A process (Haspeslagh & Jemison, 1991; Hayward, 2002). Although there are significant efforts in the field of M&A research over the past half century and substantial contributions to M&A literature and many recommendations for making M&As successful. Clearly, most scholars and practitioners still do not have a deep understanding of the variables involved in the merger and acquisition process, and particularly their complex interrelationships, and consequently resulting in

high failure rate of M&As (Biggadike, 1979; Mayer-Sommer, Sweeney, & Walker, 2006; Meeks, 1977). According to Angwin and Vaara (2005), a more integrated approach across different perspectives is essential for better understanding of M&A processes, since these critical success factors are embedded in separate research streams and rarely interact.

There is often a limitation and compartmentalization of research findings in the understanding of the complexity of mergers and acquisitions, as the various streams of research on acquisitions are only marginally influenced by one another. There are a number of independent streams of management research that contribute to the existing body of knowledge and assess the variables either at the planning stage (pre-merger) or at the integration process (post-merger). According to Ahuja and Katila (2001), it is important to note that these studies provide evidences that using more than one critical success factor can provide greater explanatory power for understanding acquisition performance, and that the relationships among critical success factors are often nonlinear.

In conclusion, the results suggest that successful M&As are influenced by both the pre- and post-merger phases. Planning level (including due diligence, cultural differences analysis at planning stage, negotiation process at planning stage and integration planning), and the effectiveness of integration process are both equally critical to the outcome of M&As as both have large or strong positive relationship to M&A performance. Higher planning level and higher intensity in integration also have a large or strong positive impact on effectiveness of integration process. And integration process effectiveness in turn has a very strong positive impact on M&A performance. Therefore, the results suggest the strong association of planning stage (pre-merger) to integration process (post-merger), and finally integration process effectiveness to M&A performance.

## REFERENCES

Ahammad, M. F. & Glaister, K. W., 2011. Postacquisition management and performance of cross-border acquisition. International Studies of Management and Organization, Volume 41, pp. 59 – 75.

Ahuja, G. & Katila, R., 2001. Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. Strategic Management Journal, Volume 22, pp. 197–220.

Anand, K., Awasthee, A. & Bonheure, K., 2022. M&A and Asia: Learning from the best. [Online] Available at: https://www.mckinsey.com/featured-insights/asia-pacific/m-and-a-and-asia-learning-from-the-best [Accessed 11 2022].

Angwin, D. & Vaara, E., 2005. Introduction to the special issue. 'Connectivity' in merging organizations: Beyond traditional cultural perspectives. Organization studies, pp. 1445-1453.

Angwin, D. N. & Meadows, M., 2015. New integration strategies for post-acquisition management. Long Range Planning, 48(4), pp. 235-251.

Angwin, D. N. & Urs, U., 2014. The effect of routine amalgamations in post-acquisition integration performance: Whether to 'combine' or 'superimpose' for synergy gains?. Advances in Merger and Acquisitions, Volume 13, pp. 153-179.

Angwin, D., 2007. Mergers and acquisitions. Oxford: Wiley-Blackwell.

Asimakopoulos, I. & Athanasoglou, P. P., 2013. Revisiting the merger and acquisition performance of European banks. International Review of Financial Analysis, Volume 29, pp. 237-249.

Bagchi, P. & Rao, R. P., 1992. Decision making in mergers: An application of the analytic hierarchy process. Managerial and Decision Economics, 13(2), pp. 91-99.

Bain & Company, 2020. Corporate M&A report 2020, s.l.: Bain & Company.

Baker & McKenzie, 2014. The FUTURE OF WORK series Business Transformations Report, s.l.: Baker & McKenzie.

Biggadike, R., 1979. The rersification isky business of div. Harvard Business Review, Volume 57, pp. 103-111.

Bing, G. & Bing, G., 2008. Due Diligence: Planning, Questions, Issues. Westport: Praeger.

Brannen, M. Y. & Peterson, M. F., 2009. Merging without alienating: Intervention promoting cross-cultural organization integration and their limitations. Journal of International Business Studies, Volume 40, pp. 468-489.

Buckley, P. & Ghauri, P., 2004. Globalisation, economic geography and the strategy of multinational enterprises. Journal of International Business Studies, pp. 81-98.

Buono, A. F., Bowditch, J. L. & Lewis, J. W., 1985. When cultures collide: The anatomy of a merger. Human Relations, 38(5), pp. 477-500.

Carey, D. C. & Ogden, D., 2004. The human side of M&A. Oxford: Oxford University Press.

Carleton, J. R., 1997 . Cultural Due Diligence: The high failure rate of mergers and acquisitions is due largely to'culture clash. 'Why does this still catch companies by surprise? Sooner or later, stockholders are going to make somebody pay.". Training-New York Then Minneapolis-, Volume 34, pp. 67-75.

Carter, S. M. & Greer, C. R., 2013. Strategic leadership: Values, styles, and organizational performance. Journal of Leadership & Organizational Studies, 20(4), pp. 375-393.

Cartwright, S. & Cooper, C. L., 1990. The impact of mergers and acquisitions on people at work: Existing research and issues. British Journal of Management, 1(2), pp. 65-76.

Cartwright, S. & Cooper, C. L., 1996. Managing mergers, acquisitions, and strategic alliances: Integrating people and cultures. s.l.:Routledge.

Cartwright, S. & Schoenberg, R., 2006. Thirty years of mergers and acquisitions research: Recent advances and future opportunities. British Journal of Management, 17(S1), pp. S1-S5.

Christensen, C., Alton, R., Rising, C. & Waldeck, A., 2011. The big idea: The new M&A playbook. Harvard Business Review, March.89(3).

Citizens, 2023. Citizens. [Online] Available at: https://www.citizensbank.com/corporate-finance/insights/mergers-acquisitions-outlook-2023.aspx
[Accessed Feb 2023].

Cohen, J., 1988. Statistical Power Analysis for the Behavioral Sciences. 2nd ed. New York: Routledge.

Cording, M., Christmann, P. & King, D. R., 2008. Reducing causal ambiguity in acquisition Integration: Intermediate goals as mediators of integration decisions and acquisitions performance. Academy of Management Journal, 51(4), p. 744 –767.

Datta, D. K. & Puia, G., 1995. Cross-border acquisition: An examination of the influence of relatedness and cultural fit on shareholder value creation in U.S acquiring firms. Management International Review, Volume 35, pp. 337-359.

Dauber, D., 2012. Opposing positions in M&A research: Culture, integration and performance.. Cross- Cultural Management: An International Journal, 19(3), pp. 375-398.

Duncan, C. & Mtar, M., 2006. Determinants of International acquisition success:Lessons from firstgroup in North America. European Management Journal, 24(6), pp. 396-410.

Eccles, R. G., Lanes, K. L. & Wilson, T. C., 1999. Are you paying too much for that acquisition?. Harvard Business Review, 77(4), p. 136 – 146.

Financial Worldwide, 2022. Financial Worldwide. [Online] Available at: https://www.financierworldwide.com/culture-clashes-in-ma-new-perspectives#.Y-H_my8Rqu5

Forbes Magazine, 2007. Forbes M&A conference. Israel, Tel Aviv.

Frankel, M. E. S. & Forman, L., 2017. Mergers and acquisitions basic: The key steps of acquisitions, divestitures, and investments. Hoboken: John Wiley & Sons, Inc.

Friedman, Y., Carmeli, A., Tishler, A. & Shimizu, K., 2016. Untangling micro-behavioral sources of failure in mergers and acquisitions: a theoretical integration and extension. The International Journal of Human Resource Management, 27(20), pp. 2339-2369.

Galpin, T. J. & Herndon, M., 2014. The complete guide to mergers & acquisitions: Process tools and templates for merger integration at every level (3rd ed.). San Francisco: Jossey-Bass.

Gertsen, M. C., Søderberg, A. M. & Torp, J. E., 1998. Different approaches to the understanding of culture in mergers and acquisitions. De Gruyter Studies in Organization, pp. 17-38.

Giessner, S., Horton, K. & Humborstad, S., 2016. Identify management during organizational mergers: Empirical insights and practical advice. Social Issues and Policy Review, Volume 10, pp. 47-81.

Gomes, E., Angwin, D., Weber, Y. & Tarba, Y., 2013. Critical success factors through the mergers and acquisitions process: Revealing pre- and post-M&A connections for improved performance. Thunderbird International Business Review, 55(1), p. 13 – 35.

Graebner, M. E., Heimeriks, K. H., Huy, Q. N. & Vaara, E., 2017. The process of postmerger integration: A review and agenda for future research. Academy of Management Annals, 11(1), pp. 1-32.

Groen, A. & McCarthy, K., 2011. Acquisition risks. s.l.:s.n.

Grundy, T., 1996. Strategy, acquisition and value. European Management Journal, 14(2), p. 181–188.

Hair J., Anderson, R., Tatham, R. & Black, W., 1998. Multivariate Data Analysis with Readings. New Jersey: Prentice-Hall.

Haleblian, J. et al., 2009. Taking stock of what we know about mergers and acquisitions: A review and research agenda. Journal of Management, 35(3), pp. 469-502.

Harvey, M. G. & Lusch, R. F., 1995. Expanding the nature and scope of due diligence. Journal of Business Venturing, Volume 10, p. 5–21.

Haspeslagh, P. & Farquhar, A., 1994. The acquisition integrtaion process: A contigent framework. The Management of Corporate Acquisitions, pp. 414-447.

Haspeslagh, P. & Jemison, D. B., 1991. Managing acquisitions: Creating value through corporate renewal. New York: Free Press.

Hayward, M. L. A., 2002. When do firm learn from their acquisition experience? Evidence from 1990-1995. Strategic Management Journal, Volume 23, pp. 21-40.

Heimeriks, K., Schijven, M. & Gates, S., 2012. Manifestations of higher-order routines: The underlying mechanisms of deliberate learning in the context of post-acquisition integration. Academy of Management Journal, 55(3), pp. 703-726.

Hofstede, G. & Peterson, M. F., 2000. Culture: National values and organizational practices. In: Handbook on organizational culture. Thousand Oaks: Sage Publications, p. 401–417.

Hofstede, G., 2001. Culture's consequences: Comparing values, behaviors, institutions and organizations across nations. London: Sage.

Homburg, C. & Bucerius, M., 2006. Is speed of integration really a success factor of mergers and acquisitions? An analysis of the role of internal and external relatedness. Strategic Management Journal, 27(4), p. 347 –367.

Homburg, C. & Pflesser, C., 2000. A multiple-layer model of market-oriented organizational culture: Measurement issues and performance outcomes. Journal of Marketing Research, 37(4), pp. 449-462.

Howson, P., 2003. Due diligence: The critical stage in mergers and acquisitions. Abingdon: Routledge.

Hunt, J. W., 1990. Changing patterns of acquisition behaviour in takeovers and the consequences for acquisition process. Strategic Management Journal, 11(1), pp. 69-77.

Inkpen, A., Sundram, A. & Rockwood, K., 2000. Cross-border acquisitions of U.S. technology assets. California Management Review, 42(3), p. 50–71.

Institute for Mergers, Acquisitions and Alliances, 2021. IMAA. [Online] Available at: https://imaa-institute.org/about-the-institute-mergers-acquisitions-alliances-imaa

Jemison, D. B. & Sitkin, S. B., 1986. The process can be a problem. Harvard Business Review, p. 107–116.

Kenny, G., 2020. Don't make this common M&A mistake. [Online] Available at: https://hbr.org/2020/03/dont-make-this-common-ma-mistake

King, D., Dalton, R., Daily, C. & Covin, J., 2004. Meta-analyses of post-acquisition performance: Indications of unidentified moderators. Strategic Management Journal, 25(2), pp. 187-200.

Krallinger, J. C., 1997. Mergers & acquisitions: Managing the transaction. New York: McGraw-Hill.

Krug, J. & Aguilera, R., 2004. Top Management Team Turnover in Mergers and Acquisitions. Advances in Mergers and Acquisitions (Advances in Mergers and Acquisitions, Volume 4, pp. 121-149.

Laerd Statistics, 2015. Multiple regression using SPSS Statistics. [Online] Available at: https://statistics.laerd.com/[Accessed June 2022].

Likert, R., 1967. The human organization. New York: McGraw-Hill.

Lubatkin, M., Calori, R., Very, P. & Veiga, J., 1998. Managing mergers across borders: A two -nation exploration of a nationally bound administrative heritage. Organization Science, 9(6), p. 670 – 684.

Marks, M. & Mirvis, P. H., 2011. A framework for the human resources role in managing culture in mergers and acquisitions. Human Resource Management, p. 161.

Marks, M. L. & Mirvis, P. H., 2010. Joining forces: Making one plus one equal three in mergers, acquisitions, and alliances. s.l.:John Wiley & Sons.

Martin, R. L., 2016. M&A: The one thing you need to get right. Harvard Business Review, 94(6), pp. 42-48.

Mayer-Sommer, A., Sweeney , S. & Walker, D., 2006. Impact of community bank mergers on acquiring shareholder returns. Journal of Performance Management, Volume 19, pp. 3-25.

McGrady, S., 2005. Extending Due Diligence to Improve Mergers and Acquisitions. Cambridge Management Sciences. Bank Accounting & Finance, p. 17 – 23.

McKinsey & Company, 2010. McKinsey & Company. [Online] Available at: https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/a-mckinsey-perspective-on-the-opportunities-and-challenges#/ [Accessed Feb 2023].

Meeks, G., 1977. Disappointing marriage: A study of the gains from merger. Cambridge: Cambridge University Press.

Meglio, O. & Risberg, A., 2010. Mergers and acquisitions: Time for a methodological rejuvenation of the field?. Scandinavian Journal of Management, Volume 26, pp. 87-95.

Morosini, P. & Radler, G., 1999. Daimler-Chrysler, the post-merger integration phase. Lausanne: IMD.

Norburn, D. & Schoenberg, R., 1994. European Cross-Border Acquisition. Long Range Planning, Volume 27, pp. 25-34.

Peng, Y. S. & Fang, C. P., 2010. Acquisition experience, board characteristics, and acquisition behavior. Journal of business research, 63(5), pp. 502-509.

Picot, G., 2002. Handbook of international mergers and acquisitions: Preparation, implementation and integration. New York: Palgrave Macmillan.

PWC, 2022. PWC. [Online] Available at: https://www.pwc.com/gx/en/asia-pacific/value-creation/delivering-deals-in-disruption-value-creation-in-asia-pacific.pdf

Rankine, D., Bomer, M. & Stedman, G., 2003. Due diligence: Definite steps to successful business combinations. London: Pearson Education Limited.

Recardo, R. J. & Toterhi, T., 2015. Stretegic integration: How to realize the value of an acquisition. Global Business & Organizational Excellence, 35(1), pp. 6-22.

Rich, C., 2011. Successful negotiation is 80 percent preparation: How to get more of what you want by preparing properly.. Strategic Direction.

Robers, P. D., 1994. Post-merger integration. In: E. &. Young, ed. Mergers & acquisitions. 2nd ed. s.l.:J. Wiley, pp. 215-227.

Saorín-Iborra, M. C., 2004. Choices in joint ventures and acquisition negotiation behaviour. Management Research, 2(3), p. 219–234.

Saorín-Iborra, M. C., 2006. A review of negotiation outcome: A proposal on delimitation and subsequent assessment in joint venture negotiations. Canadian Journal of Administrative Sciences, 23(3), p. 237–252.

Sarala, R. M. & Vaara, E., 2010. Cultural differences, convergence, and cross vengeance as explanations of knowledge transfer in international acquisitions. Journal of International Business Studies, Volume 41, p. 1365–1390.

Sarala, R. M., Vaara, E. & Junni, P., 2019. Beyond merger syndrome and cultural differences: New avenues for research on the "human side" of global mergers and acquisitions (M&As). Journal of World Business, 54(4), pp. 307-321.

Sarala, R., 2008. The impact of cultural factors on post-acquisition integration: domestic and foreign acquisitions of Finnish companies in 1993-2004. Helsinki: Edita Prima.

Schweiger, D. M. & Goulet, P. K., 2000. Integrating mergers and acquisitions: An international research review. In: S. Finkelstein & C. Cooper, eds. Advances in mergers and acquisitions. New York: JAI Press, p. 61–91.

Schweiger, D. M., Csiszar, E. & Napier, N., 1993. Implementing international mergers and acquisitions. Human Resource Planning, 16(1), p. 53–70.

Sebenius, J. K., 1998. Negotiating cross-border acquisitions. Slone Management Review, 39(2), p. 27–41.

Shimizu, K., Hitt, M. A., Vaidyanath, D. & Pisano, V., 2004. Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. Journal of International Management, 10(3), pp. 307-353.

Stahl, G. K. & Mendenhall, M. E., 2005. Mergers and acquisitions: Managing culture and human resources. Stanford: Stanford Business Books.

Statista, 2022. Statista. [Online] Available at: https://www.statista.com/statistics/1295764/factors-for-manda-failure-worldiwide/ [Accessed Feb 2023].

Steigenberger, N., 2016. The challenge of integration: A review of the M&A integration literature. International Journal of Management Reviews, Volume 0, pp. 1-24.

Teerikangas, S. & Very, P., 2006. The culture–performance relationship in M&A: From yes/no to how. British Journal of Management, 17(S1), pp. S31-S48.

Teerikangas, S., Onkila, T., Koistinen, K. & Mäkelä, M., 2021. Research handbook of sustainability agency. s.l.:Edward Elgar Publishing.

Thanos, I. C. & Papadakis, V. M., 2012. Unbunding acquisition performance: How do they perform and how can this be measured?. In: Handbook of mergers & acquisitions. Oxford: Oxford University Press, pp. 114-147.

The Bain Global M&A team, 2020. Corporate M&A Report 2020, s.l.: Bain & Company.

Tse, T. & Soufani, K., 2001. Wealth effects of takeovers in merger activity eras: empirical evidence from the UK. International Journal of the Economics of Business, 8(3), pp. 365-377.

Vaara, E., 1999. Cultural differences and post-merger problems, misconceptions and cognitive simplications.. Organisasjonsstudier, p. 3.

Weber, Y. & Fried, Y., 2011. The role of HR practices in managing culture clash during the post- merger integration process. Human Resource Management, 50(5), p. 565–570.

Weber, Y., 2011. Managing mergers and acquisitions: Implementation and integration. International Studies of Management and Organization, 41(3), p. 3–8.

Weber, Y., Belkin, T. & Tarba, S. Y., 2011. Negotiation, cultural differences, and planning in mergers and acquisitions. Nicosia, s.n.

Weber, Y., Shenkar, O. & Raveh, A., 1996. National and corporate cultural fit in mergers/acquisitions: An exploratory study. Management Science, Volume 42, p. 1215 – 1227.

Weber, Y., Tarba, S. & Rozen-Bachar, Z., 2011. Mergers and aquisitions performance paradox: The mediating role of integration approach. European Journal of International Management.

Weber, Y., Tarba, S. Y. & Oberg, C., 2014. A comprehensive guide to mergers & acquisitions, managing the critical success factors every stage of the M&A process. Upper Saddle River: FT Press.

Weber, Y., Tarba, S. Y. & Reichel, A., 2011. International mergers and acquisition performance: Acquirer nationality and integration approaches. International Studies of Management & Organization, 41(3), p. 9 – 24.

Weber, Y., Tarba, S., Stahl, G. K. & Rozen-Bachar, Z., 2012. International mergers and acquisitions: A test of new integration approach paradigm. s.l., s.n.

Yu, J., Engleman, R. M. & Van de Ven, A. H., 2005. The integration journey: An attention-based view of the merger and acquisition integration process. Organization Studies, 26(10), pp. 1501-1528.

Zollo, M. & Meier, D., 2008. What is M&A performance. Academy of Management Perspective, 22(3), pp. 55-77.

Zollo, M. & Reuer, J. J., 2010. Experience spillovers across corporate development activities. Organization Science, 21(6), pp. 1195-1212.

# NOT ALL JOB RESOURCES ARE EQUAL: THE MODERATED MEDIATION OF WORK AUTONOMY AND SUPERVISOR SUPPORT

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## ABSTRACT

Work from home and social distancing mandatory requirements have placed tremendous stress on most employees around the world. This study investigates the buffering effects of job resources and work autonomy on the relationship between workload and turnover intentions through burnout on 196 working adults in Singapore during the COVID-19 pandemic. Results found support for the positive indirect effect of burnout on the relationship between workload and turnover intentions. Interestingly, in contrast to the hypothesis, only work autonomy strengthened the conditional indirect effect of burnout when work autonomy was high. Employees who perceived lower levels of workload and higher levels of work autonomy reported lower levels of burnout.

*Keywords: Job Demands-Resources, Conservation of Resources, Workload, Burnout, Turnover Intentions, Work Autonomy, Supervisor Support, Work from Home, COVID-19.*

## INTRODUCTION

As a result of the COVID-19 pandemic, governments enforced the requirement of work from home (WFH) and social distancing to curb the spread of the virus. These regulations have led employees feeling overworked and overwhelmed under these conditions to the point of quitting their jobs (Chee, 2021, Ang, 2020, Osborne, 2021, Cai, 2021). Using the Job Demands-Resources theory and Conservation of Resources theory, this study empirically investigates if the two key job resources of work autonomy and supervisor support can buffer the health impairment process of job demand of workload on turnover intentions through burnout using employees in Singapore during the COVID-19 pandemic.

## THEORETICAL FOUNDATIONS

*Job Demands-Resources Theory*

The Job Demands-Resources (JD-R) theory is an established and well-validated theory that proposes that job demands and job resources can impact employee and organisational outcomes (Bakker and

Demerouti, 2017). Job demands are defined as physical, social, or organisational aspects of the job that require sustained physical or mental effort that associates with certain physiological and psychological costs whereas job resources are defined as physical, social, or organisational aspects of the job that help one achieve work goals, alleviate job demands and its associated costs, and/or stimulate personal growth and development.

JD-R theory proposes that the impact on employee and organisational outcomes can be through two processes (Bakker and Demerouti, 2017). The first process is the health-impairment process where chronic job demands consume employees' resources which results in burnout. The second process is the motivational process where job resources enable achievement of work goals and foster growth and development which results in improved functioning.

*The mediation of burnout between work overload and turnover intention*

This study focused on workload as one job demand that was consistently mentioned during the COVID-19 pandemic. The pandemic has forced all employees around the world to work differently such as work from home because of government regulations to curb the spread of the virus. As a result, the pandemic has posed significant changes in job demands faced by employees globally (Kniffin et al., 2021). Similarly, media reports in Singapore have found that majority of employees polled in Singapore felt overworked (Chee, 2021) and employees were struggling to balance both their work and home (Ang, 2020).

While workload is a complex construct with no widely accepted definitions, workload can be measured using several factors (Jacobs et al., 2013). These factors can include the quantitative aspects of the job such as the work pressure, the cognitive aspects of the job such as the amount of information processing required to complete work tasks, and the emotional aspects of the job such as managing emotions involved in completing work tasks (Hart and Staveland, 1988, Karasek et al., 1985, Estes, 2015). WFH as a mandatory requirement during the COVID-19 pandemic has seemed to increase these aspects of workload (Wang et al., 2021). First, balancing both work and nonwork are challenging for most employees (Ramarajan and Reid, 2013). While WFH during the pandemic, many employees reported clocking more work hours as they must manage family commitments during regular hours (Yang, 2022, Osborne, 2021). Second, the predominant use of virtual communications to collaborate and complete work tasks due to WFH requirements (Kniffin et al., 2021) can increase cognitive workload as employees have to engage in higher cognitive effort to process information possibly due to a lack of non-verbal cues (Hammond et al., 2000). Third, social isolation due to social distancing during the pandemic (Kniffin et al., 2021) can create negative emotions such as anxiety and frustration (Cacioppo et al., 2006). Thus, prolonged WFH periods can increase workload that can lead to burnout

through the health impairment process based on the JD-R theory. Indeed, many employees reported feeling burnout during the COVID-19 pandemic (Chee, 2021, Osborne, 2021).

Burnout is also associated with turnover intention. This can be explained by the conservation of resources (COR) theory which proposes that "individuals strive to obtain, retain, foster, and protect those things they centrally value" (Hobfoll et al., 2018, p. 104). The desperation principle postulates that when individuals are unable to do so due to a lack of resources, they will try to protect themselves even if such actions are irrational such as conserving their resources or finding alternative strategies to survive. When employees face high levels of burnout, one strategy to protect themselves is to look for another sustainable job which some media articles have reported (Cai, 2021). Past studies have also supported the positive association between burnout and turnover intention (Lu and Gursoy, 2016, Hansung and Stoner, 2008). Therefore, it is hypothesised that:

Hypothesis 1: There will be a positive indirect effect between workload and turnover intention through burnout.

*The moderated mediation of work autonomy and supervisor support*

This study examines the moderation of work autonomy as an organisational resource and supervisor support as a social resource on the mediation of burnout on the relationship between workload and intention to quit. According to the JD-R theory, job resources such as work autonomy and supervisor support can buffer the negative impact of job demands (Bakker and Demerouti, 2017).

Autonomy is defined as "the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out" (Hackman and Oldham, 1975, p. 162). As job autonomy provides the employee to be flexible on when and how work gets done, this resource can help employees to buffer the impact of workload on burnout while WFH during the COVID-19 pandemic, thereby reducing turnover intentions. Previous studies done on telework provide some support on the buffering effects of autonomy. For instance, Kossek and her colleagues (2008) found that employees who telework experience lower turnover intention when they perceived higher job autonomy. Perry and her colleagues (2018) found support for autonomy as a moderator between the amount of remote work on burnout.

Supervisor support can help to buffer the negative effects of work overload. Supervisors represent the organisation and manages resources and their subordinates (Eisenberger et al., 2002). Supervisors can help subordinates' task completion by mobilising resources when required and helping them cope with negative emotions arising from work (Avanzi et al., 2018). This can be an important social resource for employees who may have to deal with high workloads and social isolation while WFH

during the COVID-19 pandemic. For example, supervisor support reduces burnout in young adult Korean workers by improving their resilience and self-efficacy (Kim et al., 2022). Remote workers who received supervisor support was also associated with less social isolation which was related with less psychological distress (Bentley et al., 2016). Hence, it is hypothesised that:

Hypothesis 2: Work autonomy (Hypothesis 2a) and Supervisor Support (Hypothesis 2b) will reduce the conditional indirect effect between workload and turnover intention through burnout when the respective job resource is high.

## METHOD

*Participants*

Two hundred and five participants provided complete responses. Thirty-six participants were excluded from the analysis as they reported WFH was not required. The final sample included 169 participants comprising of 73% females and 22% males who are mostly young working adults (Reported average age was in the age category between 26 to 30 years old). All six industry clusters (Ministry of Trade and Industry, n.d.) were represented in the final sample (22% Manufacturing cluster, 8% Built Environment cluster, 7% Trade and Connectivity cluster, 11% Essential Domestic Services cluster, 40% Professional Services cluster, 11% Lifestyle cluster).

*Procedure*

Survey measures were designed using Qualtrics and were distributed to working adult participants from September 2021 to October 2021 in Singapore. As this period was after a lockdown, safe distancing and workplace capacity limits were still enforced which limited access to participants. Hence, participants were recruited through personal contacts as well as through online evening classes consisting of working adults. A snowball approach was then used to increase participation by asking participants to forward the survey to their colleagues (Biernacki and Waldorf, 1981). At the start of the survey, a description of the study was provided. Informed consent with confidentiality and anonymity emphasised were sought from participants before proceeding with the survey. As an eligibility check, participants were asked about their work from home requirements for the past 6 months. This was followed by the study measures and demographic information consisting of age, gender, marital status, and people-manager role.

*Measures*

There were seven measures used in this study: Turnover intention, burnout, work overload, autonomy, supervisor support, supervisor feedback, and employee engagement.

Turnover intention was measured using two items adapted from Hom and Griffeth (1991). A 7-point Likert scale was used (1 – Strongly disagree to 7 – Strong agree). The two items were: "I frequently think about quitting this job" and "I will probably look for a new job next year". Cronbach's alpha was .82 suggesting adequate reliability.

Burnout was measured using 16 items from the Oldenburg Burnout Inventory (OLBI) (Demerouti et al., 2010). OLBI consists of two dimensions. Exhaustion consists of eight items and measures "the general feelings of emptiness, overtaxing from work, a strong need for rest, and a state of physical exhaustion"(Demerouti et al., 2001, p. 503). An example item is, "After my work, I usually feel worn out and weary". Disengagement consists of eight items and measures the perception of "distancing oneself from the object and the content of one's work and to negative, cynical attitudes and behaviours towards one's work in general" (Demerouti et al., 2001, p. 503). An example item is, "sometimes I feel sickened by my work tasks". Participants were asked to rate each statement based on whether they had these feeling about their job in the past six months on a 7-point Likert scale (1 – Never to 7 – Always). All 16 items were aggregated to measure burnout. Cronbach's alpha was .85 suggesting adequate reliability.

Workload was taken from the Questionnaire sur les Ressources et Contraintes Professionnelles (Lequeurre et al., 2013). Three dimensions of work overload consisting of four items each were used. Pace and amount of work measures "the sense of having too much work to do in the time available" (Lequeurre et al., 2013, p. 100). An example item is, "Do you have too much work to do?". Mental workload measures "the cognitive demands that primarily impinge on the brain processes involved in information processing" (Lequeurre et al., 2013, p. 100). An example item is, "Does your work demand a lot of concentration?". Emotional workload measures "the effort needed to deal with job inherent emotions" (Lequeurre et al., 2013, p. 100). An example item is, "Does your work put you in emotionally upsetting situations?". A 5-point Likert scale was used (1 – Never to 5 – Always). Cronbach's alpha was .86 suggesting adequate reliability.

Work Autonomy was taken from the Leiden Quality of Work Questionnaire (van der Doef and Maes, 1999). Two dimensions of work autonomy consisting of four items each were used. Decision authority measures the degree to which employees can make work decisions on their own. A sample item is, "My job allows me to make a lot of decisions on my own". Task Control measures the degree to which employees control how and when they work. A sample item is, "If I want to, I can leave my workplace for a short while". A 5-point Likert scale was used (1 – Strongly disagree to 5 – Strongly agree). Cronbach's alpha was .74 suggesting adequate reliability.

Supervisor Support was based on an adapted Karasek's Job Content Survey (Karasek et al., 1985) from Baruch-Feldman et al. (2002). Ten items measure the participant's perceptions of the supervisor as caring, supportive, and absence of hostility. A sample item is, "My supervisor cares about me". A 5-point Likert was used (1 – Not at all to 5 – Very much). Cronbach's alpha was .90 suggesting adequate reliability.

The study controlled for work engagement which is measured using nine items from the shortened Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). Three dimensions of work engagement consisting of three items each were used. Vigour measures the participant's "high levels of energy and resilience while working" (Schaufeli et al., 2006, p. 702). A sample item is, "At my work, I feel bursting with energy". Dedication measures the participant's "strong involvement in work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge (Schaufeli et al., 2006, p. 702). A sample item is, "My job inspires me". Absorption measures the participant experience of "fully concentrated and happily engrossed in one's work" (Schaufeli et al., 2006, p. 702). A sample item is, "I feel happy when I am working intensely". Participants were asked to rate each statement based on whether they had these feeling about their job in the past six months on a 7-point Likert scale (1 – Never to 7 – Always). All nine items were aggregated to measure work engagement. Cronbach's alpha was .92 suggesting adequate reliability.

The study also controlled for demographic variables such age (Coded in 5 year increments with 1 – 21 to 25 years old to 11 – More than 70 years old), gender (Coded as 0 – Male and 1 – Female), and marital status (Coded as 0 – Not married and 1 – Married) as well as whether participant work position involves people management (Coded as 0 – No and 1 – Yes).

## RESULTS

The descriptive statistics and correlations are presented in Table 1. All variables demonstrated good psychometric properties.

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Turnover Intention | 3.62 | 1.69 | .82 | | | | | | | | |
| 2. Burnout | 3.10 | 0.52 | .52*** | .85 | | | | | | | |
| 3. Workload | 3.19 | 0.69 | .31*** | .35*** | .86 | | | | | | |
| 4. Work Autonomy | 3.56 | 0.63 | -.36*** | -.41*** | -.16* | .74 | | | | | |
| 5. Supervisor Support | 3.89 | 0.76 | -.47*** | -.38*** | -.18* | .45*** | .90 | | | | |
| 6. Work Engagement | 4.24 | 0.90 | -.39*** | -.68*** | -.05 | .42*** | .48*** | .92 | | | |
| 7. Age | 2.24 | 1.92 | -.21*** | .29*** | -.03 | .22** | .04 | .31*** | - | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 8. Gender | 0.73 | 0.45 | .00 | .01 | -.05 | .01 | .02 | .05 | -.13 | - | |
| 9. Marital Status | 0.22 | 0.42 | -.14 | -.24** | -.08 | -.16* | -.04 | .22** | .68*** | -.09 | - |
| 10. People Manager | 0.26 | 0.44 | .00 | -.11 | .26** | .07 | -.03 | .19* | .34*** | -.03 | .26** |

*N* = 169. *p < .05; **p < .01, ***p < .001. Cronbach's alpha represented in the diagonals.
Table 1. *Descriptive Statistics and Correlations*

Multiple regression analysis with the PROCESS macro (Version 4.0) in SPSS (Version 26) was used to test for indirect and conditional indirect effects (Hayes, 2022). The PROCESS macro provides bootstrapped (k = 5,000) percentile confidence intervals (BootCI) for the conditional indirect effects. The indirect and conditional indirect effects are significant if these intervals do not include zero. Results for Hypothesis 1 were calculated using Model 4 from the PROCESS macro and Hypothesis 2 were calculated using Model 9 from the PROCESS macro. For the conditional indirect effects, all continuous independent variables were centred (Aiken and West, 1991).

Hypothesis 1 proposed that there will be a positive indirect effect between workload and turnover intention through burnout. Results are presented in Figure 1.



Controlled for Age, Gender, Marital Status, People Manager, and Work Engagement
*N* = 169. *p < .05, **p < .01, ***p < .001
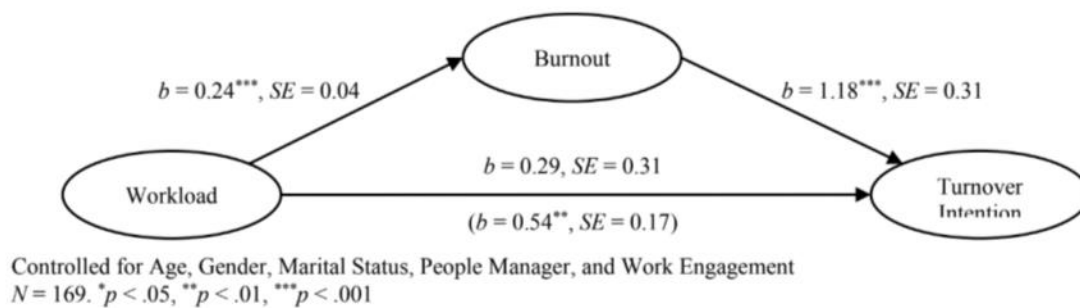
Figure 1. *Example of a figure caption. (Use AR Figure Caption)*

From Figure 1, when burnout was added into the regression model, the relationship between workload and turnover intention became not significant ($b$ = 0.29, $SE$ = 0.31, $t(159)$ = 1.626, $p$ = .106) when age, gender, marital status, people manager, and work engagement were controlled. A significant index of mediation (Index = 0.27, Boot$SE$ = 0.10, BootCI = 0.0930 to 0.4802) confirmed the positive indirect of burnout in the relationship between workload and turnover intention. Thus, Hypothesis 1 was supported.

Hypothesis 2 proposed a first-stage moderated mediation of work autonomy (Hypothesis 2a) and supervisor support (Hypothesis 2b) where these resources will reduce the conditional indirect effect of workload on turnover intention through burnout. Results are presented in Table 2.

| Outcome | Burnout | | Turnover Intentions | |
|---|---|---|---|---|
| Variables | $b(SE)$ | $t$ | $b(SE)$ | $t$ |
| (Constant) | 4.54(0.16) | 28.641*** | 1.00(1.61) | 0.622 |
| Workload | 0.23(0.04) | 5.554*** | 0.41(0.19) | 2.187* |
| Work Autonomy | -0.10(0.05) | -1.981* | | |
| Workload x Work Autonomy | 0.15(0.07) | 2.153* | - | - |
| Supervisor Support | -0.01(0.04) | -0.193 | - | - |
| Workload x Supervisor Support | -0.03(0.05) | -0.521 | - | - |
| Burnout | - | - | 1.20(0.32) | 3.710*** |
| Age | -0.00(0.02) | -0.164 | -0.09(0.08) | -1.153 |
| Gender | 0.08(0.06) | 1.323 | 0.00(0.25) | 0.012 |
| Marital Status | -0.04(0.09) | -0.412 | 0.17(0.36) | 0.473 |
| People Manager | -0.08(0.07) | -1.204 | 0.20(0.28) | 0.698 |
| Work Engagement | -0.34(0.03) | -9.210*** | -0.23(0.18) | -1.286 |
| $F$ | 22.485*** | | 10.305*** | |
| $R^2$ | .59 | | .31 | |

Table 2. *Results for the hypothesised moderated mediation model*

From Table 2, the interaction of workload and work autonomy on burnout was significant ($b$ = 0.15, *SE* = 0.07, $t$(158) = 2.153, $p$ = .033) but not for the interaction of workload and supervisor support on burnout ($b$ = -0.03, *SE* = 0.05, $t$(158) = -0.521, $p$ = .603). There is only one significant index of partial moderated mediation which confirmed the moderated mediation involving work autonomy (Index = 0.18, Boot*SE* = 0.10, BootCI = 0.0143 to 0.3884) but not supervisor support (Index = -0.03, Boot*SE* = 0.06, BootCI = -0.1782 to 0.0808). For work autonomy, the conditional indirect effect was positive and significant when participants rated having higher work autonomy (+1 SD) (Index = 0.39, Boot *SE* = 0.14, BootCI = 0.1419 to 0.6684). However, the conditional indirect effect was weaker but remained positive and significant when participants rated having lower work autonomy (-1 SD) (Index = 0.16, Boot*SE* = 0.08, BootCI = 0.0311 to 0.3463) in contrast to Hypothesis 2a. To further interpret this effect, the results of the interaction was plotted in Figure 2 and simple slope analysis was conducted (Aiken and West, 1991).
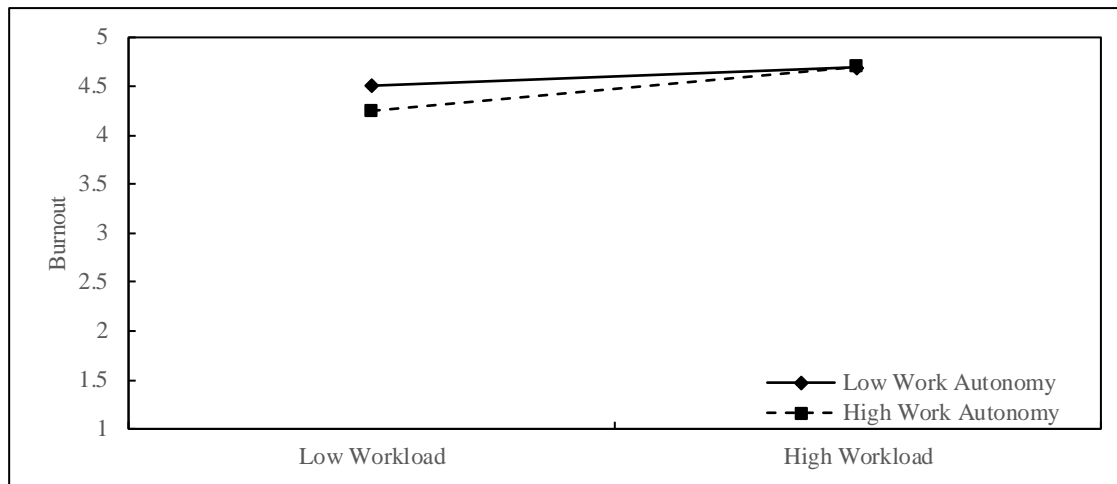
Figure 2. *Interaction plots of workload and work autonomy on burnout*

From Figure 2, the simple slope analysis suggests that when participants rated having higher work autonomy (+1 SD), the relationship between workload and burnout was positive and significant ($b$ = 0.32, $SE$ = 0.06, $t(165)$ = 5.719, $p < .001$). However, when participants rated having lower work autonomy (-1 SD), the relationship between workload and burnout was weaker but remained positive and significant ($b$ = 0.14, $SE$ = 0.06, $t(165)$ = 2.167, $p$ = .032). Thus, Hypothesis 2a and Hypothesis 2b were not supported.

## DISCUSSIONS

This study examined the buffering effect of the job resources of work autonomy and supervisor support in the relationship between the job demand of workload and turnover intention mediated by burnout on working adult participants in Singapore while WFH during the COVID-19 pandemic. In line with the JD-R and COR theory, the study finds support for the mediation of burnout in the relationship between workload and turnover intention in Hypothesis 1. This suggests that higher perceptions of workloads are associated with higher levels of burnout as these workloads sap employees' energy which can be explained by the health impairment process in the JD-R theory. When employees perceived higher levels of burnout, they also have higher levels of turnover intentions suggesting that employees may be seeking alternative employments to protect themselves as explained by the desperation principle in the COR theory.

Interestingly, the moderated mediation of work autonomy was in the opposite direction of Hypothesis 2a. The conditional indirect effect of workload and turnover intention through burnout was stronger when employees perceived higher work autonomy. While the hypothesis was not supported in the proposed direction, work autonomy in the interaction plots in Figure 2 do support the buffering effect of work autonomy. Employees who perceive low levels of work autonomy were likely overwhelmed

given that their levels of burnout were close to the higher limit of the scale. The buffering effect appears when there were higher levels of work autonomy but only when employees rated lower workloads while WFH during the COVID-19 pandemic. This is not surprising given that the participants have already been through another lock down which may have pushed their limits in managing stress.

The study failed to find support for the moderated mediation of supervisor support in Hypothesis 2b. While supervisors can help to rally resources and provide concern to their subordinates, perceived supervisor support did not interact with employees workload on burnout for working adults in Singapore while WFH during the COVID-19 pandemic. One reason could be that both supervisor and subordinates may find themselves to be in the same predicament during this period. Both supervisors and subordinates are also distant from the workplace and each other. While employees may feel that their supervisor provide support but whether this support can reduce the demands faced by the employees during this period may be limited. Interestingly, findings from a recent study on telecommuting suggest that the amount of telecommuting boost job performance only when there was low supervisor support (Golden and Gajendran, 2019). This was explained by a possible distancing of supervisors who may not be supportive. This could be another plausible reason as a study on psychological distance suggests that distancing oneself from work can help reduce the experience of difficulty (Thomas and Tsai, 2012). This may be a form of defense as proposed by the desperation principle in the COR theory. If work is already taxing, employees are facing high levels of burnout, and the supervisor is also physically distant, perhaps psychologically distancing oneself to cope with feelings of difficulty during the COVID-19 pandemic may mute the buffering effects of supervisor support. While the pandemic is over, investigating the limits of supervisor support can be a possible direction for future research especially in a hybrid workplace in a post-COVID-19 world.

*Practical implications and limitations*

There is one key practical implication for human resource management. In line with Bakker and Demerouti (2017). this study suggests that not all resources buffer the health-impairment process. This study shows that work autonomy can help buffer the effects on workload only if workload is manageable in a crisis such the COVID-19 pandemic. This could possibly apply in the post-COVID-19 environment of hybrid work which future research should investigate.

However, there are several limitations for this study. Common method variance threatens the validity of this study's results due to self-reported cross-sectional design. However, the moderated mediation effect observed suggest that this result as an artifact of common method variance is less likely (Siemsen et al., 2010). Convenience sampling also reduces the ability to generalise the results to a

wider population. In this study, the percentage of females were oversampled, hence this result may not generalise to males. Also, given the cross-sectional design of the study, casuality cannot be established. However, given that the COVID-19 pandemic is over, other studies conducted during that period may support the results of this study as it will be difficult to imitate intense work conditions of the pandemic in future research.

The key takeaway is that not all job resources buffer equally. Managers should understand the conditions of their employees. They should assess the levels of workload and burnout of their employees before deciding which job resource can best help their employees.

# REFERENCES

Aiken, L. S. & West, S. G. 1991. Multiple regression: Testing and interpreting interactions, Thousand Oaks, CA, Sage Publications, Inc.

Ang, J. 2020. Parents struggle to juggle working from home and supervising kids' home-based learning amid Covid-19 crisis. The Straits Times, April 8.

Avanzi, L., Fraccaroli, F., Castelli, L., Marcionetti, J., Crescentini, A., Balducci, C. & Van Dick, R. 2018. How to mobilze social support against workload and burnout: The role of organizational identification. Teaching and Teacher Education, 69, 154-167.

Bakker, A. B. & Demerouti, E. 2017. Job demands-resources theory: Taking stock and looking forward. Journal of Occupational Health Psychology, 22, 273-285.

Baruch-Feldman, C., Brondolo, E., Ben-Dayan, D. & Schwartz, J. 2002. Sources of social support and burnout, job satisfaction, and productivity. Journal of Occupational Health Psychology, 7, 84-93.

Bentley, T. A., Teo, S. T. T., Mcleod, L., Tan, F., Bosua, R. & Gloet, M. 2016. The role of orgaisational support in teleworker wellbeing: A socio-technical systems approach. Applied Ergonomics, 52, 207-215.

Biernacki, P. & Waldorf, D. 1981. Snowball sampling: Problems and techniques of chain referral sampling. Sociological Methods & Research, 10, 141-163.

Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M., Bernston, G. G., Nouriani, B. & Spiegel, D. 2006. Loneliness with a nomological net: An evolutionary perspective. Journal of Research in Personality, 40, 1054-1085.

Cai, C. 2021. I quit without a new job despite the Covid-19 pandemic, and I'm not alone. Asiaone, February 6.

Chee, K. 2021. Rising digital workloads contributing to worker burnout in S'pore. The Straits Times, May 24.

Demerouti, E., Bakker, A. B., Nachreiner, F. & Schaufeli, W. B. 2001. The job demands-resources model of burnout. Journal of Applied Psychology, 86, 499-512.

Demerouti, E., Mostert, K. & Bakker, A. B. 2010. Burnout and work engagement: A thorough investigation of the independency of both constructs. Journal of Occupational Health Psychology, 15, 209-222.

Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L. & Rhoades, L. 2002. Perceived supervisor support: Contributions to perceived organizational support and employee retentiion. Journal of Applied Psychology, 87, 565-573.

Estes, S. 2015. The workload curve: Subjective mental workload. Human Factors, 57, 1174-1187.

Golden, T. D. & Gajendran, R. S. 2019. Unpacking the role of telecommuter's job in their performance: Examining job complexity, problem solving, interdependence, and social support. Journal of Business and Psychology, 34, 55-69.

Hackman, J., Richard & Oldham, G. R. 1975. Development of the Job Diagnostic Survey. Journal of Applied Psychology, 60, 159-170.

Hammond, J., Harvey, C. M. & Koubek, R. J. 2000. Effect of communication medium on virtual design teams' workload. Proceedings of the Human Factor and Ergonomics Society Annual Meeting, 44, 77-80.

Hansung, K. & Stoner, M. 2008. Burnout and turnover intention among social workers: Effects of role stres, job autonomy and social support. Administration in Social Work, 32, 5-25.

Hart, S. G. & Staveland, L. E. 1988. Development of NASA-TLX (Task Load Index): Results of empirical and theoretical research. In: Hancock, P. A. & Meshkati, N. (eds.) Human mental workload. New York, NY: Elsevier Science Publishers B.V. (North-Holland).

Hayes, A. F. 2022. Introduction to mediation, moderation, and conditional process analysis, New York, NY, Guilford Press.

Hobfoll, S. E., Halbesleben, J., Neveu, J.-P. & Westman, M. 2018. Conservation of resources in the organizational context: The reality of resources and their consequences. Annual Review of Organizational Psychology and Organizational Behavior, 5, 103-1028.

Hom, P. W. & Griffeth, R. W. 1991. Structural equations modeling test of a turnover theory: Cross-sectional and longitudinal analyses. Journal of Applied Psychology, 76, 350-366.

Jacobs, K., Hellman, M., Markowitz, J. & Wuest, E. 2013. Workload. In: Gellman, M. D. & Turner, J. R. (eds.) Encyclopedia of behavioral medicine. New York, NY: Springer.

Karasek, R., G., G., Pietrokovsky, C., Frese, M., Pieper, C., Schwartz, J., Fry, L. & Schirer, D. 1985. Job content instrument: Questionnaire and user's gudie, Los Angeles, CA, Unviersity of Southern California, Department of Industrial and Systems Engineering.

Kim, H., Mattson, L. D., Zhang, D. & Cho, H. J. 2022. The role of organizational and supervisor support in young adult workers' resilience, efficacy and burnout during the COVID-19 pandemic. Journal of Applied Communnication Research, 50, 691-710.

Kniffin, K., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhave, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L. L. & Johns, G. 2021. COVID-19 and the workplace: Implications, issues, and insights for future research and action. American Psychologist, 76, 63-77.

Kossek, E. E., Lautsch, B. A. & Eaton, S. C. 2008. "Good tele-working": Under what conditions does teleworking enhance employees' well-being. In: Amichai-Hamburger, Y. (ed.) Technology and psychological well-being. Cambridge, UK: Cambridge University Press.

Lequeurre, J., Gillet, N., Ragot, C. & Fouquereau, E. 2013. Validation of a French questionnaire to measure job demands and resources. Revue Internationale de Psychologie Sociale, 26, 93-124.

Lu, A. C. C. & Gursoy, D. 2016. Impact of job burnout on satisfaction and turnover intention: Do generationaal differences matter? Journal of Hospitality & Tourism Research, 40, 210-235.

Ministry of Trade and Industry. n.d. Industry transformation map overview [Online]. Available: https://www.mti.gov.sg/ITMs/Overview [Accessed 16 June 2023].

Osborne, H. 2021. Home workers putting in more hours since Covid, research shows. The Guardian, February 4.

Perry, S. J., Rubino, C. & Hunter, E. M. 2018. Stress in remote work: Two studies testing the demand-control-person model. European Journal of Work and Orgnizational Psychology, 27, 577-593.

Ramarajan, L. & Reid, E. 2013. Shattering the myth of separate worlds: Negotiating nonwork identities at work. Academy of Management Review, 38, 621-644.

Schaufeli, W. B., Bakker, A. B. & Salanova, M. 2006. The measurement of work engagement with a short questionnaire: A cross-national study. Educational and Psychological Measurements, 66, 701-716.

Siemsen, E., Roth, A. & Oliveira, P. 2010. Common method bias in regression models with linear, quadratic, interaction effects. Organizational Research Methods, 13, 456-476.

Thomas, M. & Tsai, C. I. 2012. Psychological distance and subjjective experience: How distancing reduces the feeling of difficulty. Jounal of Consumer Resarch, 39, 324-340.

Van Der Doef, M. & Maes, S. 1999. The Leiden Quality of Work Questionnaire: Its construction, factor structure, and psychometric qualities. Psychological Reports, 85, 954-962.

Wang, B., Liu, Y., Qian, J. & Parker, S. K. 2021. Achieveing effective remote working during the COVID-19 pandemic: A work design perspective. Applied Psychology: An International Review, 70, 16-59.

Yang, C. 2022. Overworked in S'pore: Study shows one in two logs extra hours since Covid-19 pandemic started. The Straits Times, January 24.

# THE BRIGHT SIDE OF SMART WORK: HOW THE NEW GENERATION OF WOMEN SEES REMOTE WORK

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## ABSTRACT

This research article examines the advantages of remote work from a woman's perspective in the post-pandemic era without leaving out the challenges. With the rise of remote work due to technological advancements and the COVID-19 pandemic, it is crucial to understand the specific benefits and opportunities that remote work offers women regarding work flexibility and career development. While previous studies have focused on the pessimist aspects of remote work, this research aims to fill the knowledge gap by exploring the positive impacts of remote work on women's professional lives and overall well-being. The study conducted indepth interviews with 10 women professionals who have been working remotely, analyzing their experiences and insights. The findings highlight the importance of factors such as productivity and performance, communication and collaboration, motivation and work-life balance, and the challenges of isolation and loneliness in remote work settings. It also brings gender and motherhood insights. The research provides valuable findings for organizations and future studies to maximize the benefits of remote work for women.

*Keywords: women , smart work , career , remote , benefits*

## INTRODUCTION

In the past decades, with technological development (Risi and Pronzato, 2021), remote work has gained significant traction, becoming a common practice across various industries. This shift has been accelerated by the COVID-19 pandemic, which obliged organizations and individuals to embrace smart work. Before the pandemic, remote work was mainly for specific roles or voluntary arrangements (Wang *et al.*, 2020). While remote work presents its own set of challenges, it also offers unique advantages, particularly for women in the workforce, who benefit from the work flexibility (Pillai and Prasad, 2022). Since the COVID-19 pandemic, a large and growing academic research has been exploring the implications of remote work. Many have a pessimist view, putting a focus into some of the possible issues with smart work, like increasing in isolation and loneliness (McDonald, Hite and O'Connor, 2022), (Wang *et al.*, 2020), and difficulties to balance professional and personal

responsibilities (Risi and Pronzato, 2021). However, with the end of the pandemic and many workers preferring to stay in remote work environments (Ozimek and Stanton, 2022), it remains unclear why and how remote work positively impacts professional lives and overall well-being, especially women. Some studies present remote work as a tool for a more flexible career that could attract more female talents (Johnson and Smith, 2021). This research focuses on the benefits of working remotely from a women's perspective in the post-pandemic era, while also addressing some of the challenges that were amply discussed during the last few years.

This study aimed to explore the specific advantages and opportunities of remote work from a women's perspective while acknowledging the associated challenges. By investigating the experiences and insights of female professionals, the research sought to identify the factors contributing to their success and satisfaction in remote work environments. The findings aimed to fill the knowledge gap regarding the positive aspects of remote work for women, providing valuable insights for organizations and future research. By examining how remote work enables women to overcome barriers, achieve work-life balance, enhance productivity, and pursue flexible careers, the study informs organisational practices and promotes inclusive work environments that better support women's career development. To accomplish this research objective, the experiences of women professionals working remotely are explored.

## LITERATURE REVIEW

Remote working has gained significant attention, even with studies pointing to some jobs becoming permanently remote (Sytch and Greer, 2020). In terms of productivity and performance, the understanding before the COVID-19 pandemic was often positive, with research showing increased productivity and job satisfaction. This may be due to the voluntary nature of remote working before the 2019's health crisis (Wang *et al.*, 2020). With the pandemic, the difficulties in dealing with the personal environment, misuse of technological tools and isolation issues led to a more pessimistic view on the matter (Risi and Pronzato, 2021). With the experience gained from remote work during the pandemic, some strategies were developed to improve remote work. The availability of adequate workspace at home has been an important point for successful adjustment to remote work and work-life balance (Shirmohammadi, Au and Beigi, 2022). There are some concerns about learning and development, especially in the early career. Remote work can bring obstacles for young employees to access important development chances such as missing out mentoring, and informal learning from experienced colleagues and fewer opportunities to build professional networks (Shirmohammadi, Au and Beigi, 2022). This can negatively impact their career growth. Effective communication tools can be an advantage in maintaining connection and making sure there is alignment and collaboration in

remote teams (Wang *et al.*, 2020) which gives people true freedom to decide when and where to respond and work (Glaveski, 2021). On one hand, smart work improves employees' perception of the work environment, increasing their control over their work and contributing to a better work-life balance, on the other hand it might also harm relationships with coworkers and the overall work environment.  Another study on work-life balance for remote workers concluded that while smart work offers the potential for improved work-life balance, it also presents challenges such as work intensification, space limitations, technostress, and isolation, and can increased housework and care demands. (Shirmohammadi, Au and Beigi, 2022).

A topic that comes often as a challenge for remote work settings is the social side. People find a sense of purpose and achievement in remote work, valuing the flexibility it provides. However, feelings of isolation and loneliness can be significant challenges. Even though remote workers can use technology for social interactions, a study from (Wang *et al.*, 2020) found that they still feel lonely. Online interactions often lack the closeness and intimacy people desire, contributing to loneliness. Surprisingly, this study also discovered a connection between job autonomy and loneliness. In remote work, individuals need to take the initiative to engage with others online. Job autonomy, which gives people the freedom to make decisions, can motivate them to reach out to others and reduce feelings of loneliness.  Also, building strong relationships with colleagues and supervisors are important factors in remote workers, not only to deal with loneliness, but also for their careers. The study from Gazit, Zaidman and Van Dijk (2021) reveals the importance of manager involvement for remote workers career success by finding that remote and on-location employees in high-tech organizations share responsibility for their careers, expecting support from their managers. Remote workers actively influence their careers like on-location employees, but they feel less supported by their managers. Building strong relationships with managers is crucial for remote employees' career advancement. While gender dynamics and motherhood impact women's experiences, remote work often enables them to continue pursuing their careers while being closer to their families.

This literature review highlights the significance of remote work. The findings show the importance of creating suitable work environments, maintaining work-life balance, building relationships, and addressing gender-related subjects. The insights gained from this review have implications for organizations and future research endeavours in the field of remote work. The qualitative research will explore those concepts from the female remote worker perspective.

## METHODOLOGY

This exploratory qualitative study examined remote work experiences among a sample of 10 women aged 21 to 39 years old. More data will be collected. The research aimed to gain insights into

the benefits, challenges, and perceptions of remote work from the perspective of working women. The methodology included participant recruitment, semi-structured interviews, thematic analysis, and limitations. Participants were selected purposively, ensuring diverse insights. Recruitment was based on professional networks. All women interviewed were from Brazil (mainly) and Portugal and worked for high-tech startups. The study included mostly HR department participants to explore communication and relationships in depth, given their frequent interactions. This department also had a higher percentage of women.

To be able to go deeper into this exploratory research and understand the nuances of the topic and the feelings generated by individual experiences, semi-structured interviews were conducted. Every interview, with the interviewee's consent, was recorded and transcribed, with a duration of up to 45-60 minutes (Wellard and McKenna, 2001). An interview guide with open-ended questions was used to cover topics such as communication, productivity, motivation, interpersonal relationships, work-life balance, and career progression.

Thematic analysis was employed to analyze the interview data. The research emphasizes the active involvement of informants during data gathering and analysis, ensuring their voices are prominently represented in the research reporting. This approach creates ample opportunities for uncovering new concepts rather than simply reinforcing existing ones (Gioia, Corley and Hamilton, 2013). Themes emerged through an iterative process, considering an inductive approach and direct quotes from interviews were used in the results.

## RESULTS

The subsequent section presents the findings obtained from the analysis of the interviews. Four primary themes emerged through this analysis and will be further examined in the subsequent sub-sections.

**Smart Working**

*Productivity and Performance*

After all the learnings from the COVID-19 period, some points become relevant for people who kept working remotely to feel productive and perform well. Having a proper and quiet workspace, organized schedules, and tasks planning, and taking breaks for other personal activities, are some of the strategies people developed. Balance with personal life and taking care of mental and physical health are also key points.

> *"I try to have a little corner in my house dedicated to the home office, so I can maintain a high performance. […] It's important to separate personal and work schedules, and also not be interrupted."*
> *(P7, F, Sourcer, 23 years old)*

Routine is key to keeping productive, so the idea of working from anywhere, and pictures seen with people working at the beach, or other fun venues are not the best strategy for a high performance in remote companies. It can also be a challenge for people who has difficulties in organization and self-discipline skills.

**Communication and Connection**

There's a worry that communication can be harder in remote sets, because you lose one form of contact. On the other hand, technology has developed deeply in the last years to provide different types of synchronous and asynchronous tools that has been used in remote companies.

> *"We communicate basically through an online platform. We have some periodic synchronous meetings, and everything else occurs asynchronously, usually by text. We only have other synchronous meetings when it's an emergency issue or if is going to be faster and more effective." (P5, F, Business Partner, 35 years old)*

Balancing the right tools for each communication needed and developing an effective manner to use them, is the path to maintain a proper connection and communication flow inside the organization.

> *"Our synchronous meetings are valuable for group decisions. Then we can solve a lot of things with asynchronous communication through messages. Writing in a way that ensures clarity and understanding is key." (P7, F, Sourcer, 23 years old)*

It's also possible to consider that communication is key to any organization, and the challenges are similar in all types of workspaces.

> *"How companies deal with communication and share information is more important than being remote or presential." (P1, F, Talent Acquisition Specialist, 28 years old)*

**Onboarding and Learning**

The learning and development experiences in remote companies can be challenging because people are limited for the "on the job" learning and it's harder to build connections in the beginning.

> *"The main challenge was not having someone by my side to ask questions and the fear of bothering people. The limited team meetings and lack of daily contact with everyone made it difficult to establish strong connections. It's taken a while to create a bond." (P10, F, HR Manager, 39 years old)*

But some strategies can be developed with e-learning tools and proper documentation to make it feasible.

*"One advantage of remote companies is that they have a high level of documentation about the company, so you can onboard and know the company faster. You don't need to ask people about everything." (P4, F, Business System SR Manager, 38 years old)*

**Motivation and Work-Life Balance**

*Motivation*

When trying to understand the main motivators for people who choose to work remotely, a sense of purpose and achieving results appears as an important part of feeling connected and relevant professionally.

*"I think the involvement. With work, with people, with what I do. It keeps you motivated, wanting to deliver results, helping the company." (P5, F, Business Partner, 35 years old)*

Also, the flexibility and time gained commuting, are part of the reasons people prefer to work in the environment and value the model.

*"Public transportation in my city is not good, so staying at home is a gift and having the opportunity to do other things at home while I'm working is a great motivator to me" (P2, F, Intern, 21 years old)*

*Isolation and Loneliness*

The comments from the interviewees highlight the challenge of isolation and loneliness in remote companies. It is emphasized that humans are social beings and the absence of in-person interaction can lead to feelings of isolation. However, individuals may adapt differently to this situation. One interviewee mentions that they personally enjoy working from home and don't mind the loneliness. On the other hand, another interviewee expresses that working remotely can increase feelings of isolation for those living alone. These mention the absence of shared meals and social interactions as particularly difficult.

*"Working from home is by itself something that is lonely. I don't care much because I like it, but that's why the company has actions to integrate people, like virtual happy hours." (P2, F, Intern, 21 years old)*

*"Very isolated. I think for those who live with other people, working from home is nice, because you can get closer to the family. You can have lunch and dinner with them. But for those who live alone, the opposite works. I'd have breakfast, lunch, and dinner by myself […] that part was too bad." (P9, F, Talent Acquisition Manager, 35 years old)*

Different individuals may adapt differently to remote work, with some enjoying the solitude while others struggle, especially those living alone. Personality traits and household situations play a role in how people deal with the lack of social contact in remote companies.

*Work-Life Balance*

There are two points about the work-like balance that emerged from the interviews. For people who live in big cities or had to travel, the commuting part was life-changing and positively impacted their health.

> *"Before, I had to wake up at 5 am to get back home around 9 pm, so I didn't have the time to do anything else. […] I used to stay 4 hours inside my car daily and arrived at work already stressed. I even had several anxiety crises while driving to work. Working remotely helped me deal with my anxiety issues." (P1, F, Talent Acquisition Specialist, 28 years old)*

Setting boundaries between personal and professional life is key to keeping a good work-life balance and can be very challenging. However, the interviews showed that people learn to deal with it and after an adaptation period, they have more time to take care of themselves and found a good balance.

> *"I've learned the importance of defining and prioritizing what is indispensable to me. I set specific working hours and avoid overworking myself. I also make time for activities that are important to me and don't hesitate to take breaks when needed." (P6, F, Analytics Specialist, 23 years old)*

> *"In the beginning, I learned a lot about setting boundaries and having a personal life. It can be challenging when work extends beyond time zones, with calls and interruptions at all hours. However, once you understand how it works, you gain balance." (P9, F, Talent Acquisition Manager, 35 years old)*

**Relationships and Teams**

*Colleagues and Supervisors*

In the interviews, the women agreed it is possible to build relationships with coworkers and managers, trust and transparency was shown as an important factor, since control and supervision is different in remote settings.

> *"In our team we have a lot of trust in each other, you can be very transparent, even when mistakes occur, not trying to hide it and such. You're always telling the truth." (P3, F, Finance Specialist, 36 years old)*

Interestingly, some personal contact, even achieved with video calls, where it's possible to see and hear the other person, appeared as a relevant aspect to build stronger relationships.

> *"To build strong relationships you need to increase the number of synchronous meetings, only asynchronous messages are not enough." (P4, F, Business System SR Manager, 38 years old)*

*Collaboration*

Collaboration and integration among different parts of an organization are relevant concerns in remote work. It can be challenging to create strong alliances, since they face obstacles like limited face-

to-face interaction and different time zones. It's important for people to be proactive in fostering those relationships, as exemplified in the interviews.

> *"In remote work, it's crucial to reach out and connect with as many people as possible. By engaging with different areas of the company, building relationships, and exchanging ideas, you'll identify key alliances for effective collaboration." (P8, F, HR Specialist, 29 years old)*

Some interviewees, expressed frustration with the remote work dynamic, highlighting the loss of cultural immersion and face-to-face interactions that contribute to bonding and credibility. Building trust across different areas and establishing credibility remains a struggle despite efforts to communicate effectively.

> *"The disadvantage is it loses a lot of the part of acculturating, of being close to people. The bond you have from the face-to-face, you don't have on remote." (P9, F, Talent Acquisition Manager, 35 years old)*

> *"We struggle to build trust in different areas, and I don't know why. Despite our efforts to communicate, we still lack credibility." (P3, F, Finance Specialist, 36 years old)*

These challenges emphasize the importance of finding effective strategies to foster collaboration, trust, and cultural integration in remote teams.

**Career, Gender and Motherhood**

*Career*

When asked about going back to working presential, many interviewees expressed a preference on continuing to work remotely, and some would only consider changing jobs to another smart company.

> *"Me and my husband work remotely and we wouldn't consider going back to presential work, I would choose only remote companies. Not only because of the convenience, but also to work with people from different cultures." (P4, F, Business System SR Manager, 38 years old)*

Besides the flexibility, there was an interesting point of view of smart companies opening the possibility to work with people from different culture, and even taking a different lifestyle, like becoming a nomad.

> *"I became a nomad, it's changed my life the way I live, changed by working remotely. Possibilities opened for me. I wouldn't go back. I'm seeing friends who must relocate to work face-to-face is something that today, it seems archaic. To move out of the house, apart from the family to pursue a job, can destroy your personal life." (P6, F, Analytics Specialist, 23 years old)*

*Gender*

Because all interviews happened with women, it was important to understand the differences they feel working remotely, compared to presential, in relation to being a woman. The participants often commented that remote work makes them feel safer against sexual harassment issues.

> *"With remote companies there're more safety against sexual harassment, you're less physically exposed." (P2, F, Intern, 21 years old)*

> *"I was harassed at work on several occasions. During coffee breaks or meetings in some director's office, men thought they had the freedom to say inappropriate things. Remote work acts as a barrier.." (P10, F, HR Manager, 39 years old)*

When asked if sexism was a bigger issue in the remote work compared to presential, interviewees recognized sexist attitudes as present in their work environment. Still, making it clear that this happens as a reflection of the society, not affected by smart working itself.

> *"In the world, yes, in life. I think that's reflected in remote work, but I don't think there's anything specific to make anything worse or better. Maybe one thing that gets better is harassment in relation to clothing, which I've suffered, in the workplace. But I've seen attitudes like, in a meeting, a woman is talking, and a man interrupts the woman to let another man talk. I've seen and lived this." (P3, F, Finance Specialist, 36 years old)*

*Motherhood*

Only two of the interviewees were mothers, but the topic came up often even for the other participants. The view was normally very positive, as remote work acted in favor to make it possible for women to continue pursuing their careers and still be closer to their families.

> *"Remote work allowed me to reenter a work environment I gave up as a mom. It meant sacrificing a career, and dreams. At that time, they were the priority. Focused solely on motherhood, a part of me was missing. Remote work filled that space." (P10, F, HR Manager, 39 years old)*

It was surprising that in this case, the difficulties of managing the household didn't come up. Their vision was that by being at home, they have more flexibility and time to manage those activities that are also important to them.

## DISCUSSION AND CONCLUSION

This study explored the experiences and perspectives of women working remotely after the end of the pandemic. The 10 in-depth interviews with women working in full remote startups showed that smart work in is preferred over presential work for this type of work and organization. Even with some social challenges and a need for adaptation, there was a positive perception with the advantages being more important than the disadvantages.

Most women started working remotely at the beginning of the COVID-19 pandemic, so they've experienced the hard adaptation. But only one of them changed to another company with a presential model, P9, who used to live alone, and the social aspect was important for her. Smart working strategies included having a dedicated workspace, organized schedules, and task planning. Communication tools and clear written communication were important for effective remote work. All interviews displayed that proper tool usage, such as task boards, scheduling tools, shared documents, instant messaging plugins, and the need for asynchronous communication is crucial for successful remote work and employee well-being (Glaveski, 2021). Self-discipline seems to be an important personal trait for a positive experience with smart working. Developing those skills can help achieving work effectiveness and well-being in the era of remote work (Wang *et al.*, 2020). Both of using the right strategies and developing self-discipline can help avoid the "always-on" issues for smart workers, brought to light on studies such as the one from Risi and Pronzato (2021), during the COVID-19 pandemic.

Motivation came from a sense of purpose and achievement, along with the flexibility and time gained from no commuting. A study from Palumbo et al. (2021) also concluded that smart work enhances employees' sense of meaning by allowing people to personalize their roles and responsibilities, fostering collaboration through digital tools, and promoting a sense of belonging and shared purpose despite physical distance. This leads to increased job satisfaction, organizational commitment, and overall well-being. All interviewees demonstrated a high level of those characteristics.

Loneliness and isolation were common challenges, some found virtual social events helpful, but a study from Wang et al. (2020) found that online interactions alone were not sufficient to address loneliness among remote workers. Surprisingly, job autonomy was linked to loneliness, highlighting the importance of taking initiative to engage with others online.

Setting boundaries between work and personal life was crucial for work-life balance. All the interviews showed an initial need to adapt with a consequent improvement on their work-life balance; therefore, this was seen as a benefit. Increased flexibility and control are key factors driving the preference for remote work (McDonald, Hite and O'Connor, 2022).

Building trust and transparency was vital for relationships and teams. Collaboration and acculturation in virtual teams presented challenges due to the loss of face-to-face interactions. The study from Palumbo et al. (2021) pointed out that smart work can lead to a lack of interpersonal interactions, causing professional and social isolation, as seen in the interviews as well. However, according to the authors Palumbo et al. (2021) this isolation harms employees' sense of belonging and their ability to build relationships with colleagues and managers. As a result, conflicts may arise

between smart workers and traditional office workers, leading to a decline in the organizational climate and overall performance. These effects seemed less relevant in the interviews, where people felt close to their teams and supervisors, and the issue only appeared in collaborating with different departments of the company. This can be since those women worked for fully remote companies, with everyone doing smart work, preventing those differentiations and conflicts between remote and presential workers in hybrid models. Remote work was preferred by many, offering advantages like working with diverse cultures and supporting motherhood. It provided a safer environment against physical harassment, though sexist attitudes still existed and allow for flexibility in balancing career and family responsibilities.

## LIMITATIONS AND FUTURE STUDIES

The limitations of this study include the small sample size and the focus on young women under 40 years old, which may affect generalizability. The study solely focused on women's experiences. Future studies can further investigate the long-term effects of remote work on employee well-being, performance, and organizational dynamics. It's been only a few years since the COVID-19 pandemic, and workers, researchers, and organizations are still understanding the development and opportunities related to remote work. Research can explore the impact of remote work on different industries, job roles, and demographics and identify best practice to maintain a healthy balance. Organizations should consider remote work as a career option, addressing gender and diversity issues and creating a family-friendly environment for working mothers (Johnson and Smith, 2021). Overall, the findings of this research highlight the positive aspects of remote work while also acknowledging the challenges. By implementing the recommended strategies and conducting further studies, organizations can create a supportive and inclusive remote work environment that maximizes employee well-being and performance.

## REFERENCES

Bloom, N. et al. (2023) "Research: Where Managers and Employees Disagree About Remote Work." Harvard Business Review Digital Articles. 1/5/2023, p1-7. 7p. Available at: https://hbr.org/2023/01/research-where-managers-and-employees-disagree-about-remote-work.

Donnelly, R. and Johns, J. (2020) "Recontextualising remote working and its HRM in the digital economy: An integrated framework for theory and practice," International Journal of Human Resource Management, 32(1), pp. 84–105. Available at: https://doi.org/10.1080/09585192.2020.1737834.

Gazit, L., Zaidman, N. and Van Dijk, D. (2021) "Career self-management perceptions reflected in the psychological contract of virtual employees: a qualitative and quantitative analysis," Career Development International, 26(6), pp. 786–805. Available at: https://doi.org/10.1108/cdi-12-2020-0334.

Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013) "Seeking Qualitative Rigor in Inductive Research," Organizational Research Methods, 16(1), pp. 15–31. Available at: https://doi.org/10.1177/1094428112452151.

Glaveski, S. (2021) "Remote Work Should Be (Mostly) Asynchronous." Harvard Business Review Digital Articles, 12/1/2021, p1-6, 6p. Available at: https://hbr.org/2021/12/remote-work-should-be-mostly-asynchronous.

Han, S.J. and Hazard, N. (2022) "Shared Leadership in Virtual Teams at Work: Practical Strategies and Research Suggestions for Human Resource Development," Human Resource Development Review, 21(3), pp. 300–323. Available at: https://doi.org/10.1177/15344843221093376.

Review, H.B. (2021) HBR Guide to Remote Work. Harvard Business Press.

Johnson, W.B. and Smith, D.G. (2021) Advancing Gender Equity as You Lead out of the Pandemic, Harvard Business Review Digital Articles. 10/11/2021, p1-5. 5p. Available at: https://hbr.org/2021/10/advancing-gender-equity-as-you-lead-out-of-the-pandemic#:~:text=Women%20(and%20men)%20are%20more,%2C%20benefits%2C%20and%20promotion%20opportunities.

Makarius, E.E., Larson, B.Z. and Vroman, S.R. (2021) "What Is Your Organization's Long-Term Remote Work Strategy?" Harvard Business Review Digital Articles. 3/24/2021, p1-9. 9p. Available at: https://hbr.org/2021/03/what-is-your-organizations-long-term-remote-work-strategy.

McDonald, K.S., Hite, L.M. and O'Connor, K. (2022) "Developing sustainable careers for remote workers," Human Resource Development International, 25(2), pp. 182–198. Available at: https://doi.org/10.1080/13678868.2022.2047148.

Ozimek, A. and Stanton, C. (2022) "Remote Work Has Opened the Door to a New Approach to Hiring." Harvard Business Review Digital Articles. 3/11/2022, p1-11. 11p. Available at: https://hbr.org/2022/03/remote-work-has-opened-the-door-to-a-new-approach-to-hiring.

Palumbo, R. et al. (2021) "Looking for meanings at work: unraveling the implications of smart working on organizational meaningfulness," The International Journal of Organizational Analysis, 31(3), pp. 624–645. Available at: https://doi.org/10.1108/ijoa-04-2021-2708.

Pillai, S.V. and Prasad, J. (2022) "Investigating the key success metrics for WFH/remote work models," Industrial and Commercial Training, 55(1), pp. 19–33. Available at: https://doi.org/10.1108/ict-07-2021-0053.

Risi, E. and Pronzato, R. (2021) "Smart working is not so smart: Always-on lives and the dark side of platformisation," Work, Organisation, Labour & Globalisation, 15(1). Available at: https://doi.org/10.13169/workorgalaboglob.15.1.0107.

Shirmohammadi, M., Au, W.C. and Beigi, M. (2022) "Remote work and work-life balance: Lessons learned from the covid-19 pandemic and suggestions for HRD practitioners," Human Resource Development International, 25(2), pp. 163–181. Available at: https://doi.org/10.1080/13678868.2022.2047380.

Sytch, M. and Greer, l.I (2020) "Is your organization ready for permanent WFH?" Harvard Business Review Digital Articles. 8/18/2020, p2-5. 4p. Available at: https://hbr.org/2020/08/is-your-organization-ready-for-permanent-wfh.

Wellard, S. and McKenna, L. (2001) "Turning tapes into text: issues surrounding the transcription of interviews," Contemporary Nurse, 11(2–3), pp. 180–186. Available at: https://doi.org/10.5172/conu.11.2-3.180.

Williams, J.C., Korn, R.M. and Boginsky, M. (2021) "Don't Lose the Democratizing Effect of Remote Work," Harvard Business Review Digital Articles, 8/4/2021, p1-8, 8p. Available at: https://hbr.org/2021/08/dont-lose-the-democratizing-effect-of-remote-work.

## APPENDIX I. PARTICIPANTS

| # | Gender | Role | Age |
|---|--------|------|-----|
| P1 | F | Talent Acquisition Specialist | 28 years old |
| P2 | F | Intern | 21 years old |
| P3 | F | Finance Specialist | 36 years old |
| P4 | F | Business System SR Manager | 38 years old |
| P5 | F | Business Partner | 35 years old |
| P6 | F | Analytics Specialist | 23 years old |
| P7 | F | Sourcer | 23 years old |
| P8 | F | HR Specialist | 29 years old |
| P9 | F | Talent Acquisition Manager | 35 years old |
| P10 | F | HR Manager | 39 years old |

# MONITORING LEVELS OF ADHERENCE TO RECOMMENDATIONS ON INNOVATIVE MEDICINES: A METHODOLOGY PROPOSAL

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## ABSTRACT

Introducing health technologies with a high financial impact requires continuous monitoring, especially in an economic crisis and shortage of healthcare personnel. Prioritizing the technologies to be evaluated and assessing whether the results match the guidelines appears necessary. The recent EU report 2021/2282 on HTA stipulated that the focus should be on drugs, especially cancer drugs, and ATM in the first three years. In addition, the European Cancer Plan calls for more efficient drug supply management. However, measuring and reporting adherence to guidelines is costly and is carried out minimally, and further research is needed to overcome this gap in oncology and innovative oncology drugs. This research aims to improve the methodological framework by providing a tool to monitor the level of adherence to recommendations that can determine whether the prescriptions made are appropriate. To pursue the research objectives, this work adopts the case study method and implements a Qlik Sense Hub data warehouse with the parameters to be monitored. The study made it possible to develop an original standard procurement procedure to measure the appropriateness of prescriptions, which can improve cost management and management of the supply of oncology drugs and innovative oncology drugs, strengthening the Health System.

Keywords: Oncology drug; Innovative oncology drug; Health Technology; Evidence-based decision making; Evaluation; Health Technology Assessment; GRADE; Transparency; Accountability; Sustainability

## INTRODUCTION

Health technology includes preventive and rehabilitation interventions, vaccines, pharmaceuticals and devices, medical and surgical procedures, and systems within which health is protected and

maintained (INAHTA). Health technologies are fundamental tools for ensuring access to quality healthcare, but their optimal use is challenging (Henshall et al., 2012; Hogervorst et al., 2022). New technologies, population age and demographic changes, economic growth and income growth, organization and financing of the healthcare system, and population expectations represent the main drivers of healthcare expenditure (Mckee et al., 2011; Chambers et al., 2013). The introduction of health technologies with high financial and organizational implications, therefore, requires the identification of a methodology capable of evaluating their adoption (Lettieri & Masella, 2007; Shuren & Califf, 2016; Dabak et al., 2019), especially in the European context where the economic crisis and shortage of healthcare personnel have negatively affected the healthcare system (Kroezen et al., 2015). *The main objectives of the evaluation (Arsenàl) concern improving care performance through advanced information technologies and the governance of expenditure, high technology, innovation in medical devices, and innovation in the pharmacological field.* In particular, economic assessments represent a tool for defining the value of medicine in terms of opportunity cost from the point of view of the patient, the NHS, and society as a whole (AIFA).

A critical point remains the choice of application of these processes. Priority setting (Sharma et al., 2020; Barlow et al., 2021) or prioritization, is a widely discussed topic, both internationally and nationally, as all systems have limited resources, which are insufficient to assess the totality of technologies introduced and used in the healthcare system. Moreover, not all technologies deserve to be evaluated, so it is necessary to prioritize the technologies to be assessed (National HTA Programme for Medical Devices, Strategy Document). The European Union report 2021/2282 envisaged a focus in the first three years on medicines, particularly oncology medicines and ATM (Regulation (EU) 2021/2282 on health technology assessment). In addition, the report adopted by the European Parliament on the EU Cancer Plan calls for effective prevention measures, better access to cross-border healthcare and clinical trials, and, in particular, more efficient management of the supply of medicines (European Parliament Resolution of 16 February 2022). The message from the European Union is that cancer is a health priority.

However, measuring and reporting adherence to guidelines is expensive and is done minimally (Chao et al., 2009). Most of the studies in the literature concern clinical aspects of cancer treatment or are aimed at cost-effectiveness evaluations (Yang et al., 2021). Some important proposed models concerning appropriateness have mainly focused on overseeing pharmaceutical expenditure (Masini et al., 2021), identifying the areas of wastage due to inappropriate interventions (Massa et al., 2017), and risk sharing (Palazzo, 2012). However, in oncological and innovative oncological drugs, further research is needed to overcome the gaps associated with technology assessment by addressing the challenges in evaluating the adherence of the data collected to the recommendations provided to

generate evidence for decision-making. Therefore, this study intends to head in that direction, as it is crucial to implement processes to monitor adherence to current (and future) regulations.

## THE EVALUATION PROCESSES

The most widely used tool to carry out the evaluation is the Health Technology Assessment. The organizations of the European Union Network of Health Technology Assessment have defined health technology assessment as a multidisciplinary process that summarizes information concerning medical, social, economic, and ethical aspects of the use of health technology in a systematic, transparent, impartial, and reliable manner (European Union Network of Health Technology Assessment, EUnetHTA). With this tool, it is possible to assess the actual and potential effects of technology, both a priori and throughout the life cycle, as well as the consequences that the introduction or exclusion of intervention may have for the healthcare system, the economy, and society (AGENAS). A comprehensive overview of the history of health technology assessment and its progressive spread can be found in the literature (Banta et al., 1997; Banta, 2009; Banta & Jonsson, 2009). Studies have investigated and attempted to implement all the different components of HTA: information (Ormstad et al., 2013), Priority setting (Henshall et al., 1997; Specchia et al., 2015), health economics (Walker et al., 2012; Husereau et al., 2013; Sullivan et al., 2014), patient involvement (Abelson rt al., 2016; Facey et al., 2017), ethics in health technology assessment (Assasi et al., 2014; Hofmann et al., 2015), deliberative processes (Culyer et al., 2009; Oortwijn et al., 2020), knowledge transfer (Strauss et al., 2009) and the influence of health technology assessment at the impact level (Hailey et al., 2016). The recent report of the ISPOR HTA Council Working Group (Kristensen et al., 2019) provides a comprehensive summary of good practices for various dimensions involved in HTA. In recent years, there has been an established view in the literature that Health Technology Assessment (HTA) is essential to data-driven health decision-making procedures in most EU countries (Facey et al., 2020), as it supports decision-makers through an evidence-based approach (Goodman, 1998; Oortwijn et al. 2017; O'Reilly et al., 2021; European Union Network of Health Technology Assessment, EUnetHTA). In this way, decisions can be made after proper evaluation, improving the accessibility, effectiveness, and sustainability of healthcare systems (European Commission). Although HTA bodies follow the principles of evidence-based medicine (EBM) and endorse international frameworks that assist evidence assessment and decision-making, the criteria considered and the weight given to each can vary widely (Vreman et al., 2020; Angelis et al., 2018). For this reason, the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) has introduced and is developing a holistic view of evidence certainty assessment. The framework is widely used and recognized worldwide (Institute of Health Economics). A clear and explicit

distinction between 'quality of evidence' and 'strength of recommendations' is necessary to produce recommendations more useful, valid, and reproducible (De Palma et al., 2009). GRADE represents a rigorous and explicit method for the classification of 'quality of evidence' and 'strength of recommendations' that avoids the inconsistencies that have emerged in existing ways (Atkins et al., 2004; Browman et al., 1995). The GRADE system classifies the quality of evidence into four categories: (1) high (we are very confident that the actual effect lies close to that of the estimate of the effect); (2) moderate (we are moderately confident in the effect estimate. The actual effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different); (3) low (our confidence in the effect estimate is limited: the actual effect might be substantially different from the estimate of the effect); and (4) very low (we have very little confidence in the effect estimate: the actual effect is likely to be substantially different from the estimate of effect) (Guyatt et al., 2011). In addition to assessing the methodological quality of the available evidence, this tool allows the analysis of the feasibility and transferability of the proposed intervention, the expected benefits and risks and their relevance, as well as the organizational, economic, social, and financial implications (Marinai, 2017; Schünemann et al., 2013).

Combining this methodology with HTA assessments allows for a more comprehensive health technology assessment (Marinai, 2017; AGENAS).

However, no model seems to have been described in the literature that starts from this point and takes the assessment of the actual adherence of prescriptions to the regional recommendations provided in the field of oncology to the next level. The present study wanted to set up a possible model to enable this specific assessment by filling the existing gap.


## EVALUATION IN ITALY AND THE VENETO REGION

*In Italy, the definition of innovativeness, its evaluation, and the conferment of the status of innovative medicinal products are the responsibility of the AIFA (Italian Medicines Agency) and its Technical-Scientific Commission. With particular reference to innovation in the pharmacological field, it determines no. 1535/2017, AIFA has identified the criteria for classifying innovative drugs and innovative oncological drugs according to article 1, paragraph 402, of the law of 11 December 2016, n. 232. This task presupposes evaluating three essential elements: therapeutic need, added therapeutic value, and robustness of the scientific evidence submitted by the company in support of the request for innovation.*

*In this way, an up-to-date list is drawn up of medicinal products which, in the opinion of the Technical-Scientific Committee, meet the requirement of total or conditional therapeutic innovation. The list represents the innovative products that must be made immediately available to patients, even without formal inclusion in the regional hospital therapeutic handbooks. The reference to the inclusion in the list is published in the Official*

*Gazette for each specialty about the indication for which reimbursement by the National Health Service is envisaged. This list also includes details of the products with access to the Innovative Oncological and Non-Oncological Drugs Fund. In the same list, the evaluation reports for recognizing innovativeness are available for therapeutic indication, according to the AIFA Resolution n. 1535/2017 provisions. The reports of medicines that have obtained a negative result in the assessment for innovation are also published. Based on the AIFA evaluations, the Regions, with their provisions, can draw up and approve evidence-based recommendations concerning the prescription of innovative oncological drugs.*

*At the regional level, the subjects involved in the health technology assessment process are the Multidisciplinary Working Group for Research and HTA, which was formalized by Decree No. 140 of 26 September 2008; the Regional Social Health Agency of Veneto and the Local Health Authority n. 12 Venetian for the administrative management of the PRIHTA (Programme for Research Innovation and Health Technology Assessment). In particular, in Veneto, with DGR 952 of 2013, a new Regional Pharmaceutical Technical Commission (CTRF) was established with the task of expressing opinions and recommendations on individual drugs or therapeutic categories, drawing up pharmacological guidelines and diagnostic pathways- therapeutics, monitor the appropriateness, safety, and cost of medicines, both in hospital and community settings. With Decree 199 of 12 November 2014, the Director General of the Health and Social Area established a Working Group on innovative drugs within the coordination of the Veneto Oncology Network (CROV), with the task of developing evidence-based recommendations on oncological new medicines to be submitted to the final evaluation of the CTFR. The Working Group issued 35 recommendations on oncological medications. These regional guidelines for the appropriate use of drugs aim to offer an updated summary of the benefits, risks, and costs of optimizing patient care. The recommendations, therefore, represent an information and support tool for clinicians, thanks to the analysis of evidence and expenses of the various therapeutic strategies within the limits of prescribing and reimbursement. Recommendations are appropriate for planning resource allocation and access to the best available treatments. They provide for local monitoring through audits to assess adherence to the advice and compliance with the prescriptive criteria established in the AIFA registers. Audits are an essential time to interpret and discuss prescriptive behavior collectively. The results of the audits are subject to evaluation by the Region. The monitoring activity required of health authorities consists of an audit for each patient who has received treatment with a recommended drug during the year to assess the appropriateness of the prescribed therapy through compliance with the indicators established by the indications. This activity consists of analyzing the percentage of expected utilization of patients eligible for treatment and estimating the number of patients eligible annually in the Region. The tool proposed below is a valuable and innovative way of doing this task consistently, taking this practice to the maximum diffusion and making it comparable.*

## CASE STUDY

The study was conducted at the Veneto Institute of Oncology (IOV). The UOC Pharmacy was chosen as a case study because, over the years, it has been very active in implementing systems aimed at monitoring pharmaceutical expenditure through monthly reporting, focusing on the areas subject to regional monitoring to ensure the achievement of health objectives and compliance with the cost limits set by the Region. The mission of the Pharmacy UOC is the appropriate and safe use of conventional and experimental drugs, medical devices, in vivo and in vitro diagnostics, infusion solutions, dialysis material, prosthetic material, vaccines, nutritional products, disinfectants, radiopharmaceuticals, narcotics, medical gases, contrast media, and blood products.

## MATERIAL AND METHODS

To pursue the research objectives, this paper adopts a case study method. A case study is appropriate when the researcher wants to understand a complex phenomenon in a specific context, with the aim being to provide an analysis of the context and processes that illuminate the theoretical issues being studied (Eisenhardt & Graebner, 2007; Yin, 2003; Yin, 2017) and is therefore particularly appropriate for the research under consideration as it focuses on specific drug categories. The case study was developed by sourcing information from systematic retrieval and desk analysis of available documentation regarding efficacy, safety, and costs; analysis of HTA reports; analysis of Recommendations regarding oncological and hematological drugs (Johansson, 2007). The study was conducted in Italian and covered the period from 1/1/2022 to 31/12/2022. The audits were conducted on incident patients treated at the Institute in 2022, identified through the selection of therapy cycle 1. The choice of the treatment protocol, treatment line, and therapeutic aim made it possible to identify the treatments subject to the recommendation in the setting envisaged by the recommendation itself; mutation information, when necessary, was obtained from individual medical records. The monitoring covered 26 recommendations and, 1 HTA report on oncology drugs, 16 recommendations, and 2 HTA reports on hematology drugs. The selected recommendations were aimed at judging the therapeutic alternatives (from guidelines/clinical experience), the quality of the evidence, the benefit/risk balance, and the cost compared to the other options. A Qlik Sense Hub data warehouse was implemented to pursue the research objectives. This tool was developed in collaboration with the clinicians of the Company Therapeutics Committee on Medicines and with Management Control. Data warehousing is a technique for collecting and managing data from varied sources, which aids the strategic use of data (Mora, 2020).

In recent years, such a tool has been applied in various health-related research and has proven helpful in analyzing large amounts of data (Gil et al., 2016; El Morr, 2019; Torres et al., 2021; Shaari et al.,

2022). The creation of the database made it possible to bring together the following analysis parameters: date of therapy, patient biographical data, diagnosis and site of pathology, treatment protocol, purpose, line of therapy, and treatment cycle number. Guidance on interpreting oncological data (Chiesa & De Benedetto, 2010) was considered when selecting the analysis parameters. A specific algorithm for data extraction was set up within the hub. In this way, the Data Warehouse structure made it possible to analyze two different types of recommendations. Precisely, in those cases in which the recommendation called for monitoring the rate of use of a drug concerning patients eligible for therapy, the rate of use was calculated concerning the setting identified by the specific recommendation, placing as the denominator (I) the patients affected by the pathology being monitored, (II) the therapeutic setting and (III) the line of treatment described by the recommendation. On the other hand, the second case study considered the required recommendation to estimate patients eligible for the recommended treatments. In this case, the utilization indicator was calculated by relating the recommended treatments to the number of total patients estimated at the regional level. Finally, an indicator of appropriateness was calculated for each recommendation. This indicator was calculated by comparing the number of appropriate treatments to the total number of treatments initiated for the recommendation under consideration. The data for calculating the indicator were obtained by consulting patients' medical records and comparing the information with the eligibility criteria (AIFA) and the regional recommendations.

## RESULTS

The contribution of this study was the development of a procedure that is standardized and replicable at the regional level. The methodology elaborated envisages a new pathway that considers the essential parameters for verifying the adherence of the data collected in the field of oncological and innovative oncological drugs concerning the recommendations provided at the regional level to generate evidence for decision-making. In particular, the model thus developed envisages the use of the following evaluation parameters: the expected utilization, understood as the percentage of utilization for patients eligible for treatment or the estimated annual patients expected in the Region - given by the recommendation; the total number of incident patients in the X year in the setting envisaged by the recommendation as the denominators of the indicators (calculated only for recommendations for which no regional patient estimate was provided) the number of incident patients treated in year X as the numerators of the indicators; the calculation of utilization indicators calculated as a percentage of the denominator or as a percentage of the regional estimate; and finally, the introduction of some appropriateness indicators indicated as the percentage of appropriate patients in the total number of treatments started.

Applying this monitoring procedure to the selected case study revealed a high level of prescriptive appropriateness (>95%) for oncology and hematology. This procedure also showed that the utilization rate aligned with regional estimates.

These results appear very important as no similar tool for the subsequent assessment of adherence to recommendations in the oncology field seems to have been previously highlighted in the literature. This tool, used by the Veneto Institute of Oncology (IOV), can also be applied to evaluate adherence in all other drug distribution centers to improve cost management and transparency. This study made it possible to propose an evaluation methodology for measuring and reporting compliance to guidelines, making it affordable and easily reproducible to promote its dissemination.

However, some issues still need to be covered. The criticalities and limitations found in this research can be summarized as follows. The presence of text fields in the file relating to the site of pathology and some mutations was found. Furthermore, it was impossible to compile the 'line of treatment' section for the oncohaematology setting, derive the setting for some cases, and update some recommendations concerning developing new indications/therapy lines or new molecules for the under-reviewed disease setting. Finally, the data required manual intervention when processing the audits.

In the future, it is proposed to implement the procedure and evaluate other health technologies that have previously undergone HTA and GRADE evaluation.

## CONCLUSION

The efforts made so far by public institutions and stakeholders show that the time is ripe to endorse a more transparent, objective, and rational process for health technology assessment. At the national level, however, there is still a significant divergence between the HTA assessment techniques adopted, and many realities still need to implement such procedures. This divergence will be remedied in 2025 when the HTA regulation at the European level will be fully implemented. However, measuring and reporting clinical outcomes and guideline adherence is done minimally. This practice, however, would be a fundamental building block for transparent and accountable health technology assessment. With this in mind, implementing a methodology to evaluate the adherence of the data collected concerning the recommendations provided to generate evidence for decision-making appeared fundamental. The development and diffusion of such a tool can lead to more efficient cost management and strengthen the public health system. This practice should be disseminated at the regional and national levels so the NHS can keep up with the most promising technologies. In this way, the principle of universalism and accessibility of care for cancer patients will be sustainable in the future.

## REFERENCES

Abelson J, Wagner F, DeJean D, Boesveld S, Gauvin FP, Bean S et al., (2016) "Public and patient involvement in health technology assessment: A framework for action." Int J Technol Assess Health Care. 32:256–64.

AGENAS https://www.agenas.gov.it/. Accessed 11 june 2023

AIFA, https://www.aifa.gov.it/farmaci-innovativi, accessed on 25 june 2022

Angelis, A, Lange, A, Kanavos, P. (2018) "Using health technology assessment to assess the value of new medicines: Results of a systematic review and expert consultation across eight European countries." Eur J Health Econ.19:123–52.

ARSENÀL, http://consorzioarsenal.it:8080/it/web/guest/health-technology-assessment, accessed 2 june 2022

Assasi N, Schwartz L, Tarride JE, Campbell K, Goeree R et al. (2014) "Methodological guidance documents for evaluation of ethical considerations in health technology assessment: A systematic review." Expert Rev. Pharmacoecon. Outcomes Res.;14:203–20.

Atkins D., Best D., Briss P.A., Best D., Briss P.A., Eccles M., Falck Ytter Y., Flottorp S., Guyatt G.H., Harbour R.T., Haugh M.C., Henry D., Hill S., Jaeschke R., Leng G., Liberati A., Magrini N., Mason J., Middleton P., Mrukowicz J., O'Connell D., Oxman A.D., Phillips B., Schunemann H.J., Edejer T.T., Varonen H., Vist G.E., Williams J.W. Jr, Zaza S., (2004). "Grade Working Group. Grading quality of evidence and strength of recommendations. A new method by the GRADE Working Group." Br Med J, 328: 1490-1497.

Banta, D. (2009). What is technology assessment?. International journal of technology assessment in health care, 25(S1), 7-9.

Banta, D., & Jonsson, E. (2009). History of HTA: introduction. International journal of technology assessment in health care, 25(S1), 1-6.

Banta, H. D., Werkö, L., & Cranovski, R. (1997). Report from the EUR-ASSESS Project. International Journal of Technology Assessment in Health Care, 13(2), 133-340.

Barlow E, Morton A, Dabak S, Engels S, Isaranuwatchai W, Teerawattananon Y, et al., (2021) "What is the value of explicit priority setting for health interventions? A simulation study." ResearchGate. https://doi.org/10.13140/RG.2.2.23649.63841

Browman G.P., Levine M.N., Mohide E.A., Hayward R.S., Pritchard K.I., Gafni A., Laupacis A. (1995) "The practice guidelines development cycle: a conceptual tool for practice guidelines development and implementation." Journal of Clinical Oncology, 13: 502-512.

Chambers JD, Lord J, Cohen JT, Neumann PJ, Buxton MJ., (2013). "Illustrating potential efficiency gains from using cost-effectiveness evidence to reallocate medicare expenditures." Value Health J Int Soc Pharmacoeconomics Outcomes Res.16(4):629–38.

Chao, H. H., Schwartz, A. R., Hersh, J., Hunnibell, L., Jackson, G. L., Provenzale, D. T., ... & Rose, M. G. (2009). "Improving colorectal cancer screening and care in the Veterans Affairs Healthcare system." Clinical colorectal cancer, 8(1), 22-28.

Chiesa, F., & De Benedetto, L., (2010) "Fattori prognostici, interpretazione dei dati oncologici e loro analisi." metodologia clinica applicata in orl, 123.

Culyer A. (2009). "Deliberative processes in decisions about health care technologies: Combining different types of evidence, values, algorithms, and people." London: Office of Health Economics.

Dabak SV, Teerawattananon Y, Win T., (2019). "From design to evaluation: applications of health technology assessment in Myanmar and lessons for low or lower middle-income countries". Int J Technol Assess Health Care.35(6):461–6.

De Palma, R., Liberati, A., Papini, D., Bandieri, E., Belfiglio, M., Ceccarelli, M., ... & Roila, F. (2009). "La produzione di raccomandazioni cliniche con il metodo GRADE: l'esperienza sui farmaci oncologici."

Eisenhardt, K. M. & Graebner, M. E. (2007) "Theory Building From Cases: Opportunities And Challenges." Academy of Management, 50, 25-32.

El Morr, C., Ali-Hassan, H., El Morr, C., & Ali-Hassan, H. (2019). "Healthcare, data analytics, and business intelligence". Analytics in healthcare: a practical introduction, 1-13.

European Commission. eHealth Digital health and care—electronic cross-border health services. Available from: https://ec.europa.eu/health/ehealth/electronic_crossborder_healthservices_en. Accessed 21 june 2023

European Parliament resolution of 16 February 2022 on strengthening Europe in the fight against cancer - Towards a comprehensive and coordinated strategy.

Facey K, Ploug Hansen H, Single A, editors. (2017) "Patient involvement in health technology assessment". Springer Nature Singapore Pte Ltd.

Facey, K., Rannanheimo, P., Batchelor, L., Borchardt, M., & De Cock, J. (2020). "Real-world evidence to support Payer/HTA decisions about highly innovative technologies in the EU—actions for stakeholders." International Journal of Technology Assessment in Health Care, 36(4), 459-468. doi:10.1017/S026646232000063X

Gil, M., Pinto, P., Simões, A. S., Póvoa, P., Da Silva, M. M., & Lapão, L. V. (2016). "Co-design of a computer-assisted medical decision support system to manage antibiotic prescription in an ICU ward." In Exploring complexity in health: An interdisciplinary systems approach (pp. 499-503). IOS Press.

Goodman CS., (1998) "Healthcare technology assessment: Methods, framework, and role in policy making". Am J Manag Care. 4:SP200–14.

Guyatt GH, Oxman AD, Kunz R, Brozek J, Alonso-Coello P, Rind D, et al., (2011) "GRADE guidelines 6. Rating the quality of evidence—imprecision". Journal of clinical epidemiology. 64(12):1283-93.

Hailey D, Werko S, Rosen M, Macpherson K, Myles S, Gallegos Rivero V et al., (2016) "Influence of health technology assessment and its measurement". Int J Technol Assess Health Care. 32:376–84.

Henshall C, Oortwijn W, Stevens A, Granados A, Banta D., (1997) "Priority setting for health technology assessment: Theoretical considerations and practical approaches. Priority setting sub-group of EUR-ASSESS Project". Int J Technol Assess Health Care. 13:144–85.

Henshall, C., Schuller, T., & Mardhani-Bayne, L. (2012). "Using health technology assessment to support optimal use of technologies in current practice: the challenge of "disinvestment"." International journal of technology assessment in health care, 28(3), 203-210.

Hofmann B, Oortwijn W, Bakke Lysdahl K, Refolo P, Sacchini D, van der Wilt GJ et al., (2015) "Integrating ethics in health technology assessment: Many ways to Rome". Int J Technol Assess Health Care. 31:131–37.

Hogervorst, M. A., Vreman, R. A., Mantel-Teeuwisse, A. K., & Goettsch, W. G. (2022). "Reported challenges in health technology assessment of complex health technologies." Value in Health, 25(6), 992-1001.

Husereau D, Drummond M, Petrou S, Carswell C, Moher D, Greenberg D et al., (2013) "Consolidated health economic evaluation reporting standards (CHEERS)—explanation and elaboration: A report of the ISPOR health economic evaluations publication guidelines good reporting practices task force". Value Health. 16:231–50.

INAHTA, http://www.inahta.org/HTA/. Accessed 12 May 2022

Institute of Health Economics, Evidence grading systems used in health technology assessment practice. Institute of Health Economics. (2018). Available from: https://www.ihe.ca/advanced-search/evidence-grading-systems-used-in-health-technology-assessment-practice.

IOV Veneto, https://www.ioveneto.it/unit/uoc-farmacia/, accessed 6 june 2022

Johansson, R. (2007). "On case study methodology". Open house international, 32(3), 48-54.

Kristensen FB, Husereau D, Huic M, Drummond M, Berger ML, Bond K et al., (2019) "Identifying the need for good practices in health technology assessment: Summary of the ISPOR HTA Council Working Group report on good Practices in HTA". Value Health. 22:13–20.

Kroezen, M., Dussault, G., Craveiro, I., Dieleman, M., Jansen, C., Buchan, J., Sermeus, W. (2015). "Recruitment and retention of health professionals across Europe: a literature review and multiple case study research." Health Policy, 119(12), 1517-1528.

Lettieri, E. & Masella, C. (2007). "Spesa sanitaria e valutazione delle tecnologie sanitarie." Giornale Italiano di Nefrologia, 40, 22-36.

Marinai, C. (2017). "Schema organizzativo per valutare con il metodo GRADE i farmaci oncoematologici con classificazione Cnn." Innovazione e sostenibilità del Servizio sanitario, 38, 107.

Masini, C., Gallegati, D., Gentili, N., Massa, I., Ciucci, R., & Altini, M. (2021). "The Challenge of Sustainability of High-Cost Oncological Drugs: A Budgeting Model in an Italian Cancer Center." International Journal of Environmental Research and Public Health, 18(24), 13413.

Massa, I., Balzi, W., Burattini, C., Gentili, N., Bucchi, L., Nanni, O., ... & Altini, M. (2017). "The challenge of sustainability in healthcare systems: frequency and cost of inappropriate patterns of breast cancer care" (the E. Pic. A study). The Breast, 34, 103-107.

McKee, M., Figueras, J., & Saltman, R. B. (2011). EBOOK: Health Systems, Health, Wealth and Societal Well-being: Assessing the case for investing in health systems. McGraw-Hill Education (UK).

Mora, J. M. L. (2020). "Qlik sense implementation: dashboard creation and implementation of the test performance methodology" (Doctoral dissertation).

National HTA for Medical Devices Programme, Strategy Document (2017), 6.

Oortwijn W, Determann D, Schiffers K, Tan SS, van der Tuin J., (2017) "Towards integrated health technology assessment for improving decision making in selected countries". Value Health.20:1121–30.

Oortwijn W, Jansen M, Baltussen R., (2020) "Use of evidence-informed deliberative processes by Health Technology Assessment Agencies Around the Globe". Int J Health Policy Manag. 9:27–33. 10.15171/ijhpm.2019.72

O'Reilly D., Audas R., Campbell K., Vanstone M., Bowen J.M., Schwartz L., Assasi N., Goeree R. (2021). "Evidence-Based Decision Making 3: Health Technology Assessment", Methods Mol Biol.

Ormstad SS, Isojarvi J. (2013) "Keeping up to date with information retrieval research: Summarised Research in Information Retrieval (SuRe Info)". J Eur Assoc Health Infor Libr. 9:17–19.

Palozzo, A. C. (2012). "New drugs--how much are they worth? The Italian registries: a model to evaluate appropriateness and effectiveness." European Journal of Hospital Pharmacy: Science and Practice, 19(4), 398–403. doi:10.1136/ejhpharm-2012-000071

Regulation (EU) 2021/2282 on health technology assessment.

Schünemann H., Brożek J., Guyatt G., Oxman A. (2013). GRADE Handbook https://gdt.gradepro.org/app/handbook/handbook.html

Shaari, H., Durmić, N., & Ahmed, N. (2022). "Modern ABI platforms for healthcare data processing". In Advanced Technologies, Systems, and Applications VI: Proceedings of the International Symposium on Innovative and Interdisciplinary Applications of Advanced Technologies (IAT) 2021 (pp. 187-202). Springer International Publishing.

Sharma M, Teerawattananon Y, Luz A, Li R, Rattanavipapong W, Dabak S., (2020). "Institutionalizing evidence-informed priority setting for universal health coverage: lessons from Indonesia". Inq J Med Care Organ Provis Financ.57:46958020924920 (32513029).

Shuren, J., & Califf, R. M. (2016). "Need for a national evaluation system for health technology." Jama, 316(11), 1153-1154.

Specchia ML, Favale M, Di Nardo F, Rotundo G, Favaretti C, Ricciardi W et al., (2015) "How to choose health technologies to be assessed by HTA? A review of criteria for priority setting". Epidemiol Prev. 39:39–44.

Strauss S, Tetroe J, Graham I, editors. "Knowledge translation in health care: Moving from evidence to practice". West Sussex, UK: Wiley-Blackwell; 2009.

Sullivan SD, Mauskopf JA, Augustovski F, Caro JJ, Lee KM, Minchin M et al., (2014) "Budget impact analysis—principles of good practice: Report of the ISPOR 2012 budget impact analysis good practice II task force". Value Health. 17:5–14.

Torres, D. R., Cardoso, G. C. P., Abreu, D. M. F. D., Soranz, D. R., & Oliveira, E. A. D. (2021). "Applicability and potentiality in the use of Business Intelligence tools in Primary Health Care". Ciência & Saúde Coletiva, 26, 2065-2074.

'What is Health Technology Assessment (HTA)?' Common Questions. Retrieved 8 August, 2021, from https://www.eunethta.eu/about-eunethta/

Vreman, RA, Mantel-Teeuwisse, AK, Hövels, AM, Leufkens, HGM, Goettsch, WG. (2020) "Differences in health technology assessment recommendations among European jurisdictions: The role of practice variations". Value Health. 23:10–6.

Walker DG, Wilson RF, Sharma R, Bridges J, Niessen L, Bass EB et al., (2012) "Best practices for conducting economic evaluations in health care: A systematic review of quality assessment tools". Rockville, MD: Agency for Healthcare Research and Quality.

World Health Organization (n.d.) Health Technology Assessment. https://www.who.int/health-topics/health-technology-assessment. Accessed 21 june 2023

World Health Organization. (2015). Using health technology assessment for universal health coverage and reimbursement systems. https://www.who.int/health-technology-assessment/HTA_November_meeting_report_Final.pdf. Accessed 17 Aug 2021.

Yang, Q., Zhong, X., Zhang, W. et al. (2021). "Cost-effectiveness of different surgical treatment approaches for early breast cancer: a retrospective matched cohort study from China." BMC Cancer 21, 107. https://doi.org/10.1186/s12885-021-07840-6

Yin, R. K. (2003). "Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2017) "Case study research and applications: Design and methods", Sage publications.

# PROJECT MANAGEMENT FOR ARTIFICIAL INTELLIGENCE IN HEALTHCARE – THE 'SAMBIAS' CASE STUDY

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## ABSTRACT

Artificial Intelligence (AI) is revolutionizing the functioning models of the entire society, with inevitable scientific, professional, and economic implications. These digital transformations are impacting any sector, even the very critical ones, such as healthcare. In these dynamics, it is essential that IT developments must be carefully considered also from an organizational and managerial point of view, especially when dealing with delicate processes such as those operating in the healthcare sector. This research, based on the case study of the 'SAMBIAS' project, aims to highlight the main problems and the possible relative solutions in the field of project management related to the development of AI in healthcare, in this peculiar case with a focus on medical imaging. The study has uncovered a fundamental aspect, namely the crucial role of knowledge management, from both the semantic and the organizational point of view. The research provides specific scientific and managerial implications, relating on the one hand to the methodological flag of clinical discernment and on the other hand to the need for continuous interaction between project stakeholders as a prerequisite for valid and reliable semantic development of the AI platforms.

*Keywords: Artificial intelligence; Project management; Agile; Knowledge management; Healthcare; Medical imaging.*

## INTRODUCTION.

Artificial Intelligence (AI) has been coined as the next printing press for it has the potential to be even more transformative; while the printing press made books and information widely accessible, benefiting many sectors, AI makes problem-solving and rapid analysis of mass data available. AI today has the potential to impact all aspects of the technology, the economy, and the society while it

transforms many industries for its potential to accelerate developments in research and create innovations (Mehta and Devarakonda, 2018).

The concept can be broken down into two terms. 'Artificial', referring to something created by humans, and 'Intelligence', referring to the ability to reason, such as when machines can possess human-like abilities such as learning, problem-solving, and so on; consequently, it can be defined as a 'human-made thinking' (Mondal, 2020).

In the context of this research, AI is a technological term dealing with the intelligent behavior of machines, especially computer programs, with the objective that machines can imitate/support/perform intelligent human behavior. Furthermore, while the general concept of 'AI' refers to human-like intelligence, more specific concepts like Machine Learning (ML) and Deep Learning (DL) refer respectively to algorithmic learning/predicting (ML) and using layered Neural Networks (NNs) for recognition (DL) (Bini, 2018).

AI has been generating great advances in recent years, and especially in the healthcare sector. Even more in the years to come, it will be increasingly widespread and therefore, it is essential to be prepared for this imminent revolution, at least if considering the elaboration date of this study (i.e., 2023) (Chatterjee et al., 2022; Saranya and Priya, 2023).

As in the development of any IT (Information Technology) project, not only specific hardware and software knowledge is required, but also the more general knowledge relating to the engineering of the life cycle of the various operations, about analysis and development, of the IT platform (i.e., the 'Life Cycle Engineering Software') (De Silva and Alahakoon, 2022). The study in question focuses precisely on this aspect, adopting as a case study the IT project titled 'SAMBIAS', which will be described in detail below, to bring out a possible good practice of Project Management (PM) applied to AI in healthcare.

## CASE STUDY BACKGROUND.

The main objective of the SAMBIAS project, developed by the Casa di Cura Tortorella S.p.a., an important private healthcare center in Southern Italy, located more precisely in Salerno (Campania), is the creation of a system of integrated platforms – for the data collection, generation, classification, contextualization, and augmentation – to increase the effectiveness and the efficiency of the clinical decision-making processes. It is to highlight, as will be repeatedly underlined, that these are IT systems with a decision-making support value, given that the final clinical decision connected to the use of these platforms must always be taken by a clinical operator (in accordance with the principle of 'clinical discernment'), but naturally with the assistance of the IT solutions in question, i.e., with the support of ever greater precision (Barrett et al., 2019).

The heart of the platform in question is an AI environment, capable of generating, by virtue of systems based on ML and DL, starting from the Computerized Tomography (CT) scans normally produced in diagnostic imaging operations, additional 'synthetic' DICOM (Digital Imaging and Communication in Medicine) images (i.e., CT slices), more and more precise, to increase the tank of data from which the NNs, on which the AI system is based, can draw information, through appropriate discrimination/classification, to increase their training on the subject and consequently, their knowledge on the subject, in order to provide ever greater decision-making support to clinical operators called to work with the clinical cases connected to the CT scans in question. Alongside the AI platform, another system that has been created is the one relating to the Data Collection/Sharing (developed starting from the Open Source platform known as CKAN.org), which draws from the various computer systems of the Casa di Cura Tortorella (importing and therefore not manipulating the original data) the various information that could be of further support, due to the consequent enrichment and relative contextualization, for the constant increase of the validity and reliability of the clinical decision, as well as for further clinical research, even with an epidemiological nature and even in collaboration with other public and/or private entities; every outcome that is produced by the generative AI on the aforementioned AI platform (CT slices) flows into the Data Collection/Sharing platform (Lassau et al, 2020).

Particular attention, in both platforms, has been dedicated to IT security (access, redundancy, and so on) and to privacy (anonymization, encryption, and so on). Naturally, the IT security system has been developed in accordance with the three pillars of any Information System (IS) – i.e., hardware and software equipment, procedures, and people – also with reference to the evolution of the IT security approach during the development cycle and the life cycle of the SAMBIAS software (Hlávka, 2020; Chaudhuri et al., 2022).

## AIMS AND METHODS.

The main purpose of this study is the exploratory identification of the main problematics related to PM about AI in healthcare, with a subsequent description of some good practices. The methodology that has been adopted is naturally that one of the case study, by virtue of in-depth observation and data triangulation (deriving from the IS of the Casa di Cura Tortorella, from the project implementation activities, and from the development of the AI platform).

## THE CASE STUDY DESCRIPTION.

In any IT project and therefore, even more in the case of an IT project aimed at developing an AI platform, it is necessary to carry out, in addition to the analysis activity and the coding activity in the

strict sense, a constant organization, information, and communication of the data flows, to ensure an orderly evolution of the project both in objective terms (goals of the project and related activities to be carried out) and in subjective terms (the various actors involved in the execution of the project), due to 1) the complexity of the issue (industrial research and experimental development), 2) the dynamics of the project development, and 3) the number of players involved (in the case study in question, the staff of the Casa di Cura Tortorella and the staff of the various consultants) (Forman et al., 2023).

As regards the Software Life Cycle Engineering, it essentially began with the start of the project and essentially ended with the conclusion of the project. In truth, however, this activity in some ways is intended to go beyond the duration of the project, containing in a nutshell, as a design of the life cycle, the directives at least in terms of expectations regarding the future life of the platform beyond its technical installation (cf. the following life cycle of the SAMBIAS software) (Buschmeyer et al., 2022). The first PM activity concerned the organization of the analysis, the design, and the development ('engineering') of the life cycle for generating the overall system of integrated platforms about AI and Data/Collection Sharing. In carrying out this activity (cf. Fig. 1), an 'Agile' approach was adopted (Vial et al., 2023).
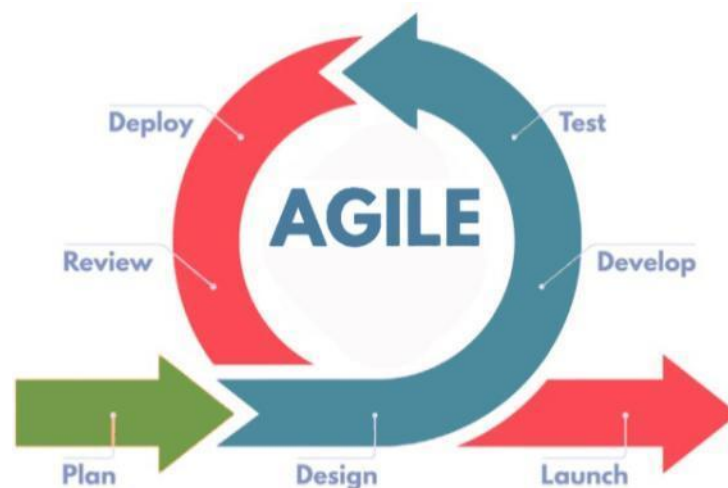


Fig. 1. Schematic diagram of the Software Life Cycle Engineering in the SAMBIAS project.
Source: authors' elaboration.

The approach in question differs from the 'waterfall' methodology due to the greater flexibility and the consequent greater adaptability to the development context, increasing the probability of effectiveness/efficiency of the software impact. Furthermore, this approach also differs from the exclusively 'prototyping' methodology, because it is based on a rough backbone that is also sequential in its own nature (in Fig. 1, Plan > Design > Launch) (Sardana and Sharma, 2023).

The essential characteristic of this vision lies, as abovementioned, in the high flexibility ('agility') of which the model is potentially capable. This possibility has been continuously used when organizing the life cycle of the SAMBIAS software (understood as a system of integrated platforms) and in fact,

the various activities in this regard have been uninterruptedly reviewed during the development of the project, as a sort of another facility for the same SAMBIAS life cycle.

The contents of the various phases in question are described below and for each one, the main expectations, problems, and solutions that have been respectively implemented, addressed, and prepared are summarized, also in organizational terms and not only from an IT viewpoint exclusively. As concerns the management of the various operations in all the macro-phases ('Plan', 'Design', and 'Launch'), it should be noted that the PDCA (Plan-Do-Check-Act) scheme has been continuously adopted (Smith et al., 2022), while the consultants involved in the specific coding operations got support also from the GitHub environment (Mashkoor et al., 2022).

*Plan*

This phase, within the life cycle in question, has also included the analysis part, i.e., the identification of the expectations, of the state of the art, and of the requirements of the clinical operators of the Casa di Cura Tortorella regarding the overall SAMBIAS software to be developed. As per the project, it is to remember that it is a system of integrated IT platforms, essentially consisting of a Data Collection/Sharing platform, which is (also) fed by outputs from a platform based on Artificial Intelligence, with this latter environment (AI) constituting the heart of the project in question.

First, an analysis was carried out about the main IT platforms already used in the Casa di Cura Tortorella, which is equipped with adequate hardware and software solutions for the standard clinical operations, to be interfaced with more innovative and sophisticated software, such as the one associated with the SAMBIAS project. In this respect, this analysis concerned not only the inventory of the IT platforms in use, but also and above all the interface and the interoperability methods between the various platforms.

After carrying out this inventory and the related interface/interoperability analysis, the development of the Data Collection/Sharing platform was defined; in this regard, in a vision of full operation of the SAMBIAS system, all the clinical data of the Casa di Cura Tortorella could/should converge, but also, if relevant, the technical and administrative data processed by the other various platforms of the organization. It will be precisely in the context of this IT environment – i.e., the Data Collection/Sharing platform – that it will be possible to proceed with further contextualization, enrichment, and therefore augmentation of the data, to ensure that an overall and integrated vision of the various clinical contexts is created, concerning elements in common for different patients, different pathologies, different exams, different therapies, different follow-ups, and so on.

Instead, as regards the AI platform, intended to increase the effectiveness and the efficiency of the clinical processes of the Casa di Cura Tortorella (in this first development, in the area of the diagnostic imaging), a set of real biomedical images was initially identified to be subsequently used for

experimental purposes. This set of data, in the planning/analysis phase, concerned even more specifically the category of cerebral vasculopathies, representing the highest number of existing diagnoses within the perimeter of the Radiology Information System (RIS).

Once these planning/analysis activities were carried out, the 'Design' phase, from which the adoption of the 'Agile' methodology essentially started, was elaborated. It should be noted that all the partners of the SAMBIAS project (i.e., the staff of the Casa di Cura Tortorella and the staff of all the various consultants) have always been widely involved in all phases of the cycle (as per the 'Agile' requirement).

*Design*

Within the planning/development phase ('Design'), by adopting the 'Agile' methodology represented in Fig. 1, there are various sub-phases, which constitute the flexibility potential ('agile') inherent to the approach in question, called 'Develop', 'Test', 'Deploy', and 'Review', which, in a circular perspective, constitute the macro-phase of the 'Design' in their continuous interactions. The development of the SAMBIAS software was therefore set up according to a prototype approach, but constantly reviewing the design based on the feedbacks from the prototype development, starting from the main inputs received from the 'Plan' macro-phase (planning/analysis).

Naturally, the 'Design' macro-phase is the one that has absorbed the greatest project resources. In this regard, we mean above all the man-hours relating to the personnel of the various subjects that have been involved, but also some specific IT assets (for example, the services relating to IaaS – Infrastructure as a Service to size the environment in which the overall SAMBIAS software should reside).

According to an 'Agile' perspective, an attempt was made to continuously verify the expectations of the clinical operators of the Casa di Cura Tortorella regarding the two platforms (AI and Data Collection/Sharing); in this respect, the approach that has been adopted was to continuously provide rapid and flexible development levels of the overall SAMBIAS software. The constant interaction with the staff of the Casa di Cura Tortorella has therefore allowed to work for ongoing approximations and subsequent evolutions of the integrated platforms (in fact, from an 'Agile' perspective, users and developers work together during the various phases of the project).

The interaction was mainly carried out through online meetings with the personnel that was contextually concerned, and also the 'Agile' development of the platforms took place mainly remotely, given that, due to connection speed requirements, the machine providing the Cloud Computing services enabling the setting of the integrated platforms was temporarily established at the premises of the Casa di Cura Tortorella, accessible via VPN (Virtual Private Network) to the other project

partners. Periodically, but above all in the presence of particularly critical aspects, specific face-to-face meetings were held, above all when dealing with particularly strategic contents.

Although the approach in question, as previously highlighted, is oriented towards the production of rapid and flexible levels of software development, it should be noted that both the contents of the analysis meetings (and therefore, starting from the 'Plan' macro-phase) and the contents of the design/development meetings (i.e., in the 'Design' macro-phase) were primarily produced in natural language, i.e., through conversations, mainly via e-mail, to subsequently define the guidelines to be applied specifically and concretely to the subject of the conversation within the 'Agile' process. These exchanges took place both with the clinical personnel (in particular, with the Radiology Department) and with the technical/administrative personnel (in particular, with the ICT – Information and Communication Technology Department) of the Casa di Cura Tortorella.

In this way, it was possible to activate relevant control over the development of the SAMBIAS software both at the endogenous (i.e., continuously involving all the various interested parties) and the exogenous levels (i.e., postponing the progress of the software to specific verification moments). Consequently, the sub-phases of 'Test' and 'Review' have allowed not only the corroboration of the results, but also and above all a shared evolution of the situations of use (i.e., the clinical contexts relating to patients and related treatments in the Casa di Cura Tortorella) and the connected software solutions (generated through collaboration between the staff of the Casa di Cura Tortorella and the staff of the various consultants).

Precisely the endogenous type of control, based on the sharing of skills, experiences, and sensitivity, has made it possible to generate, by virtue of this continuous collaboration, even further project outputs. In fact, part of the staff involved in the development of the SAMBIAS software also formed the backbone of the scientific and professional dissemination activities to the community of interest at the internal (inside the Casa di Cura Tortorella) and the external levels (outside the Casa di Cura Tortorella) of the project results, from a Knowledge Management perspective, as further evidence of the sharing/collaboration activated during the project development.

*Launch*

At the end of the various interactions that were carried out in the 'Design' macro-phase, the SAMBIAS software, intended as previously mentioned as an integrated system of platforms, was released. In particular, the system, from a software point of view, can be divided into two essential components, as follows.

a) CT AI platform (Generation/Classification/Anonymization/Analysis).

b) Docker container including the CKAN platform (Big Data Management).

Naturally, there are other IT services that make up the system in question (i.e., Cloud Computing services, RDBMS – Relational Data Base Management System services, logs, and so on), but the two that have been aforementioned are the essential components from a development perspective. It is therefore this system, understood as the fundamental output of the SAMBIAS project, which has been released for the use by the Casa di Cura Tortorella.

At this point it should be considered, given the industrial research and experimental development imprint of the SAMBIAS project, that the integrated system in question (the SAMBIAS software) does not constitute the final stage, in the sense of the IT version, being destined to be more and more integrated, in the future, within the normal functioning of the technological, organizational, and operational processes of the Casa di Cura Tortorella. In this regard, therefore, it is important a vision of this platform from the point of view of the PLC – Product Life Cycle (cf. Fig. 2), in which the reference to the quantities on the Y axis refers in this case to access/use over time by the operators of the Casa di Cura Tortorella (or other public or private organizations).
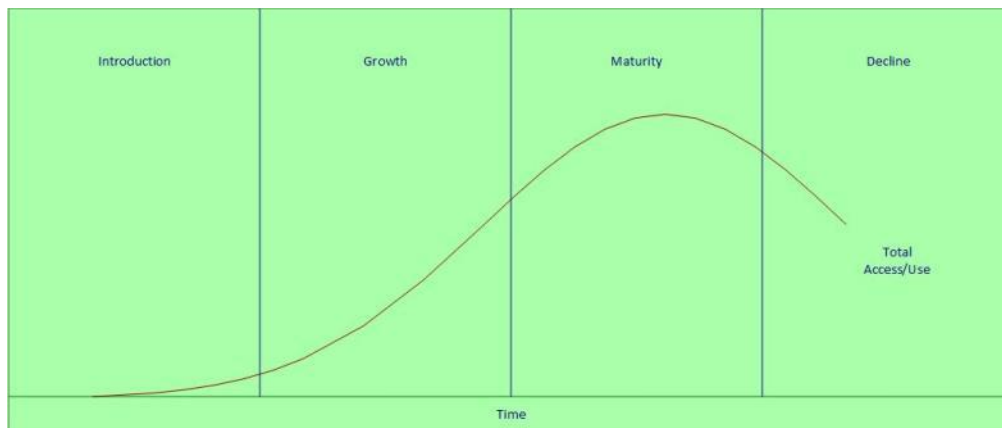


Fig. 2. Hypothesis of evolution about the SAMBIAS life cycle.
Source: authors' elaboration.

The SAMBIAS project, intended as an integrated system of activities aimed at developing the SAMBIAS software, 'ends' with the phase relating to the 'Introduction' (cf. Fig. 2) of the SAMBIAS life cycle, although still in the phase of experimental development within the perimeter of the clinical activities carried out by the Casa di Cura Tortorella. In this regard, i.e., still having to deal with the phases of growth, maturity, and decline (cf. Fig. 2), without considering at the moment the further possible developments of the SAMBIAS platform, the IT staff of the Casa di Cura Tortorella was also involved in the maintenance operations to be carried out in the 'Launch' phase, even though, actually, this happened also in the 'Design' phase.

## IMPLICATIONS

The main theoretical implications concern the need to adopt an approach to the development of IT projects concerning AI in healthcare always keeping in mind the methodological flag of the clinical discernment. The NNs underlying the decision of the AI platform must function as a support and not as a substitute for the clinical decision and therefore, their design must necessarily consider this aspect (Pasquale, 2019; Saraiva et al., 2021; Wan, 2022).

The main practical implications concern the organization and the management of the knowledge developed by the working group, which becomes a real COP (Community-Of-Practice) during the course of the project. The continuous interactions between the subjects involved in the project, especially with the continuous exchange – in this case – of medical, technological, and newly medical knowledge, is a prerequisite for the valid and reliable semantic development of the AI platform, in addition to all the positive externalities that may derive from similar scientific and professional dynamics (Nekrasova and Gromova, 2020; Dovleac et al. 2021; Georgiev, 2023).

## LIMITS

The research was based on a single case study and therefore, the results of the survey, although exploratory, cannot be extended to other similar realities. An evolution of the study is then necessary, augmenting the perimeter investigation, both in terms of qualitative research (i.e., continuing with the methodology of the case study and increasing the number of similar case studies) and/or in terms of quantitative research (i.e., aiming at descriptive or inferential investigations).

Another limit could concern the specific unit of analysis, i.e., the medical imaging. Other branches of radiology and even more, other medical specialties may require different approaches in the project management of appropriate AI platforms.

## CONCLUSION.

AI is the technology that in recent times has been demonstrating the greatest potential for development and application. One of the most effective impacts, if not the greatest, is believed to concern more specifically the world of healthcare.

In this study, some of the main issues connected to the development of an AI platform in the medical field have been highlighted, with specific reference to the case study of the SAMBIAS project conducted by the Casa di Cura Tortorella S.p.a. (Salerno, Italy), with a focus on the branch of medical imaging. The survey revealed a crucial aspect for contexts that are similar to the one investigated (i.e., IT development of AI in the medical field), namely the decisive role of knowledge management, both

from the semantic viewpoint (always placing the doctor's medical knowledge at the center of the decision-making process) and from the organizational viewpoint (always adopting as collaboration mechanisms, for all the personnel involved in the project, the techniques of socialization, internalization, externalization, and combination envisaged in the spiral of knowledge by Nonaka and Takeuchi).

## ACKNOWLEDGEMENTS

## REFERENCES

Barrett, M., Boyne, J., Brandts, J. et al. (2019), "Artificial intelligence supported patient self-care in chronic heart failure: a paradigm shift from reactive to predictive, preventive and personalised care", EPMA Journal, Vol. 10 No. (2019), pp. 445-464.

Bini, S.A. (2018), "Artificial Intelligence, Machine Learning, Deep Learning, and Cognitive Computing: What Do These Terms Mean and How Will They Impact Health Care?", The Journal of Arthroplasty, Vol. 33 No. 8, pp. 2358-2361.

Buschmeyer, K., Hatfield, S., Heine, I., Jahn, S., & Markus, A.L. (2022), "Expectation management in AI implementation projects: a case study", EuroMed Journal of Business, Vol. (ahead-of-print) No. (ahead-of-print), pp. 1-11.

Chatterjee, S., Chaudhuri, R., Thrassou, A., & Vrontis, D. (2022), "Technology disruption in healthcare: artificial intelligence application, challenges, and policy recommendations in India", International Journal of Internet Marketing and Advertising, Vol. 17 No. 3-4, pp 394-414.

Chaudhuri, R., Chatterjee, S., & Vrontis, D. (2022), "Antecedents of privacy concerns and online information disclosure: moderating role of government regulation", EuroMed Journal of Business, Vol. (ahead-of-print) No. (ahead-of-print), pp. 1-20.

De Silva, D., & Alahakoon, D. (2022), "An artificial intelligence life cycle: From conception to production", Patterns, Vol. 3 No. 6, Article 100489, pp. 1-14.

Dovleac, R., Ionica, A., & Leba, M. (2021), "Knowledge Management Embedded in Agile Methodology for Quality 4.0", Proceedings of the 2021 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), 13-16 December, Singapore, Singapore, pp. 1260-1264.

Forman, N., Avornicului, M.S., & László, S. (2023), "Unlocking Success in IT: A Systematic Exploration of Soft and Hard Skills and Their Collaborative Dynamics across Information Technology Roles", International Journal of Advanced Natural Sciences and Engineering Researches, Vol. 7 No. 4, pp. 246-252.

Georgiev, D. (2023), "Exploring knowledge management from a software engineering perspective", Proceedings of the 24th European Conference on Knowledge Management, Vol. 24 No. 2, pp. 1571-1578.

Hlávka, J.P. (2020), "Security, privacy, and information-sharing aspects of healthcare artificial intelligence", Security, privacy, and information-sharing aspects of healthcare artificial intelligence", pp. 235-270. Bohr, A., & Memarzadeh, K. (Eds.), Artificial Intelligence in Healthcare. Amsterdam, NL: Elsevier.

Lassau, N., Bousaid, I., Chouzenoux, E. et al. (2020), "Three artificial intelligence data challenges based on CT and MRI", Diagnostic and Interventional Imaging, Vol. 101 No. 12, pp. 783-788.

Mashkoor, A., Menzies, T., Egyed, A., & Ramler, R., (2022), "Artificial Intelligence and Software Engineering: Are We Ready?", Computer, Vol. 55 No. 3, pp. 24-28.

Mehta, N., & Devarakonda, M.V. (2018), "Machine learning, natural language programming, and electronic health records: The next step in the artificial intelligence journey?", The Journal of Allergy and Clinical Immunology, Vol. 141 No. 6, pp. 2019-2021.

Mondal, B. (2020), "Artificial Intelligence: State of the Art", pp. 389-425. Balas, V., Kumar, R., & Srivastava, R. (Eds.), Recent Trends and Advances in Artificial Intelligence and Internet of Things. Cham, Switzerland: Springer.

Nekrasova, T., & Gromova, E. (2020), "Agile Team as an Effective Tool of Knowledge Creating in Industry", Proceedings of the 17th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, University of Toronto, Canada, 15-16 October, Virtual, pp. 310-315.

Pasquale, F. (2019), "Professional Judgment in an Era of Artificial Intelligence and Machine Learning", boundary 2, Vol. 46 No. 1, pp. 73-101.

Saraiva, M.M., Ferreira, J.P.S., Cardoso, H. et al. (2021), "Artificial intelligence and colon capsule endoscopy: development of an automated diagnostic system of protruding lesions in colon capsule endoscopy", Techniques in Coloproctology, Vol. 25 No. (2021), pp. 1243-1248.

Saranya, S., & Priya, S. (2023), "Healthcare Revolution and Integration of Artificial Intelligence", pp. 67-79. Ram Kumar, C., & Karthik, S. (Eds.), Translating Healthcare Through Intelligent Computational Methods. Cham, Switzerland: Springer.

Sardana, A., & Sharma, V.K. (2023), "Agile Framework Adaptation Issues in Various Sectors", pp. 23-38. Hooda, S., Sood, V.M., Singh, Y. et al. (Eds.), Agile Software Development: Trends, Challenges and Applications. Hoboken, NJ, USA: Wiley.

Smith, T.G., Norasi, H., Herbst, K.M. et al. (2022), "Creating a Practical Transformational Change Management Model for Novel Artificial Intelligence–Enabled Technology Implementation in the Operating Room", Mayo Clinic Proceedings: Innovations, Quality & Outcomes, Vol. 6 No. 6, pp. 584-596.

Vial, G., Cameron, A.-F., Giannelia, T., & Jiang, J. (2023), "Managing artificial intelligence projects: Key insights from an AI consulting firm", Information Systems Journal, Vol. 33 No. 3, pp. 669-691.

Wan, T.T.H. (2022), "Convergence of artificial intelligence research in healthcare: Trends and approaches", Journal of Integrated Design and Process Science, Vol. (ahead-of-print) No. (ahead-of-print), pp. 1-15.

# EXPLORING FINANCIAL AND NON-FINANCIAL REPORTS IN IDENTIFYING EARNINGS MANAGEMENT AND SUSTAINABILITY MANAGEMENT - A RESEARCH NOTE FROM ITALIAN LISTED COMPANIES

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## ABSTRACT

In order to achieve desired strategic company goals, accounting managers can purposefully vary the outcomes of financial reports of a company by applying earnings management methods. The scope of earnings management is revealed by discretionary accruals, which are estimated in an industry-specific regression, taking into consideration key balance sheet and income statement variables. Discretionary accruals for 25 selected Italian MIB FTSE listed companies in the period from 2017 to 2021 are calculated and correlations between key company ratios and abnormal accruals are examined. According to the European Non-Financial Reporting Directive (Directive 2014/95/EU), companies of public interest need to include a non-financial statement into their published annual company report, which provides details on their sustainability efforts. Companies often tend to focus on sustainability issues that they consider strategic, in order to differentiate themselves from their competitors. In a research study, environmental and social aspects of annual sustainability reports of selected MIB listed companies from 2019 to 2021 are examined and relevant key sustainability concepts are analyzed. This contribution in the empirical accounting research field aims at helping readers of annual integrated company reports, such as shareholders, analysts and institutions, to identify earnings management and sustainability management of a firm by providing insights that can support their interpretation of financial and non-financial statement information.

*Keywords: Earnings Management, Sustainability, Non-Financial Reporting, Directive 2014/95/EU, Italy.*

## 1. INTRODUCTION

The main **purpose** of this case study is to examine the sustainability efforts of Italian corporations and to find out about the possible expected correlations between accrual based earnings management and corporate ratios. In the following case study, earnings management of 25 MIB FTSE listed companies

in the period from 2014 to 2021 is calculated and correlations between key company ratios and abnormal accruals are analyzed. Moreover, annual sustainability reports for the sample companies are analyzed under "environmental" and corporate governance aspects. The **objectives** of this paper is to point out possibilities for financial and nonfinancial statement readers to interpret published information more accurately and for management to find ways to shape stakeholder relations more effectively by earnings management and strategic sustainability management publication.

In recent years, trust in financial statement information has been significantly reduced due to accounting scandals, excessive earnings management and the negatively affected information usefulness of published earnings. Identifying earnings management can be useful for investors in order to assess current company performance as well as for making predictions for future firm profitability. When the threshold between legally permitted and non permitted accounting tactics is crossed, it is no longer earnings management but fraudulent financial reporting that takes place, which is often leading to huge economical losses in society. In both cases, company management, board of directors as well as internal and external audits play an important role in ensuring reliability of financial statement information. A practical question is, whether earnings management strategies could be linked to key company ratios. Empirical research in this area can contribute to financial statement reader awareness in interpreting published accounting numbers.

In regards to nonfinancial company reports, European Nonfinancial Reporting Directive Directive (NFRD) 2014/95/EU is obliging large companies of public interest to include a "[…] non-financial statement in the annual report with details on environmental, social, personnel, and safeguard for human rights" (Di Vaio et al., 2020, p. 2). It is important for a company to consider and implement corporate social responsibility measures, not only because of the European Nonfinancial Reporting Directive, but because stakeholders demand and value certain business ethics behaviors.

## 2. LITERATURE REVIEW

In accounting research literature, accrual-based earnings management measurement methods are widely accepted approaches of earnings management quantification. To understand the term accruals, it can be useful to first explain the definition of total accruals: Total accruals of a company in a fiscal year can be defined as the "difference between reported earnings and cash flows from operations" (Healy, 1985, p. 86). The relationship between cash flows and earnings, also known as a "link between accounting and finance" (Brief and Peasnell, 1996), had been discussed in accounting research literature under the term "clean surplus accounting (see Preinreich, 1936, p. 131). This principle implies that the "sum of a firm's income over all years must equal the sum of its cash flows" (Jones,

1991, p. 210). As a consequence, either earnings increasing, or earnings decreasing accruals-based accounting decisions of a company are, at some point in time, expected to be reversed in the future. Total accruals can be segmented in to a discretionary and a nondiscretionary part, and it is assumed that systematic earnings management can be spotted in the discretionary part of total accruals (see Dechow et al., 1995, p. 203). One possible definition of earnings management can be the following: „Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Healy and Wahlen, 1999, p. 368). In this context, earnings **benchmarks** or "earnings thresholds" are often taken into consideration in earnings management decisions (see Brown and Caylor, 2005, p. 423, see Watts and Zimmerman, 1990, p. 134). Different types of benchmarks or benchmark goals can be distinguished in financial statement reports. One possible hierarchy of benchmark goals was discovered in an empirical study by Brown and Caylor, where companies of the sample prioritized analyst forecast benchmarks, followed by earnings improvement benchmarks and loss avoidance benchmarks (see Brown and Caylor, 2005). **Analyst forecast benchmarks** are defined as benchmarks that companies use as a goal for their published earnings, in order to meet or beat analysts` earnings forecasts. **Earnings improvement benchmarks** are earnings targets that firms have, in order to show higher earnings compared to a prior period, usually compared to the last year. **Loss avoidance benchmarks** describe the earnings target that companies set for themselves, on order to publish a small profit rather than a small loss, when they find themselves around the zero earnings level (see Hansen, 2010, p. 460).

Important **theoretical approaches** that can serve as a motivational basis for financial and nonfinancial information publication are legitimacy theory, stakeholder theory, agency theory (see Alkurdi et al., 2023). According to agency theory, managers act opportunistically and there is a need for monitoring mechanisms that reduce information asymmetry, such as annual financial and nonfinancial statements, as well as certain corporate governance characteristics which can protect shareholder interests. Similarly, stakeholder theory is focusing on the necessity of companies to meet the needs its of stakeholders. Legitimacy theory, on the other hand, highlights the importance of societal acceptance as a prerequisite of a company`s survival. It states that the survival of an organization depends on whether it operates in a socially acceptable way. Legitimacy can be defined as a "generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within the same socially constructed system of norms, values, beliefs and definitions" (see Suchman, 1995, p. 574).

The application of the **European Non Financial Reporting Directive** (Directive 2014/95/EU) is a response to expectations of society and provides sustainability and accountability information (see Campra et al., 2020) that stakeholders are interested in. EU Directive 2014/95/EU, transposed into Italian law by Legislative Decree 254/2016, applies to annual sustainability (or "integrated") reports of large companies of public interest, starting from the year 2017. It obliges these companies to include a report on their sustainability efforts into their annual company reports. **Sustainability** can be defined in the following way: "Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life" (United Nations, 1987 p. 54). "**Corporate Social Responsibility** can be reflected in sustainability governance programs that cover social, environmental and economic activities" (Maglio et al., 2019). On a more practical level, EU Regulation 2020/852, so called **taxonomy regulation**, defines a "classification system (or taxonomy) to establish market clarity on what economic activities can be considered environmentally "sustainable"" (Gortsos, 2021, p. 341). In creating a common terminology, the regulation gives more clarity and transparency to investors and can increase investor trust (see Oostrum, 2021, p. 21). However, the phenomenon of "greenwashing", which means that companies could influence shareholder perceptions in a favorable way without actually putting efforts into a strong sustainability performance, may still be a problem that nonfinancial statement readers need to consider (see Papoutsi and Sodhi, 2020, p. 1). This problem highlights the need for shareholders to read sustainability reports critically.

## 3. RESEARCH QUESTIONS AND METHODOLOGY

*<u>The following research questions are addressed in the empirical case study:</u>*

*Are there significant correlations between earnings management and financial company ratios in the sample?*

*How do listed Italian companies, that comply with Directive 2014/95/EU, cope with global sustainability challenges?*

In the sample of the empirical case study concerning financial statement information, 25 selected FTSE MIB listed companies are included. Earnings management is measured for 5 years, from 2017-2021 (see appendix). Earnings management is measured by the most well-known model for measuring abnormal accruals, the "modified Jones Model", where a regression, based on accounting numbers of the sample companies and an OLS estimation is used (see Jones, 1991, p. 212; see Dechow et al., 1995, p. 195). Due to missing data, not all MIB FTSE listed companies could be included. Financial statement

data is extracted from the ORBIS Europe database, and correlations between earnings management and selected financial company ratios are calculated and discussed.

Identifying Earnings Management can be important in order to interpret the current economic position of a company and to possibly predict future profitability, especially from the point of view of shareholders who are considering their investment decisions. In figure 1, the mean of earnings management of technology companies and public utility companies from 2017-2021 is represented, which shows that in some years, earnings management decisions were very different for different industry groups.
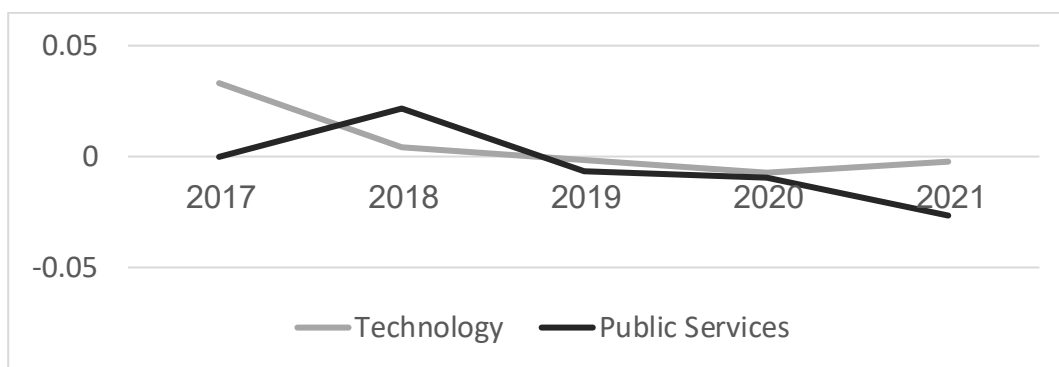


Figure 1. Mean of Earnings Management in different Industry groups from 2017-2021
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

Current research on sustainability report quality is often focusing on a content analysis of key sustainability categories, arguing that, the more detailed explanations on certain sustainability procedures occur, the more a company could be invested in making actual efforts to enhance its sustainability efforts in that area (see Papoutsi and Sodhi, 2020, p. 4, see Closs et al., 2011, p. 109-212). The following case study on **sustainability reports** relates to the years 2019-2021 focuses on the concepts "sustainable", "innovation" and "corporate governance". Moreover, the relevance of corporate governance incentives of the sample companies is analyzed. The sample of the sustainability case study includes 25 companies of Italian FTSE MIB listed companies, which is the same sample as for the previously mentioned financial statement analysis. They are segmented into 4 industry sectors, the largest group being "technology"[1], with 14 companies. Other categories are "energy"[2], "health"[3] and "public utility"[4] (see figure 2). For the analysis of the level of sustainability efforts in the of each company or group of companies, a primary document analysis of sustainability (or "integrated") reports is conducted, which were all published online.

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[1] The companies are: Atlantia, Buzzi Unicem, CHN Industrial, Campari, Ferrari, Interpump, Inwit, Leonardo, Moncler, Pirelli, Prysmian, Stellantis, STM and TIM.
[2] Eni, Saipem, Snam and Tenaris.
[3] Amplifon, Diasorin and Recordati.
[4] A2A, Enel, Hera and Terna.
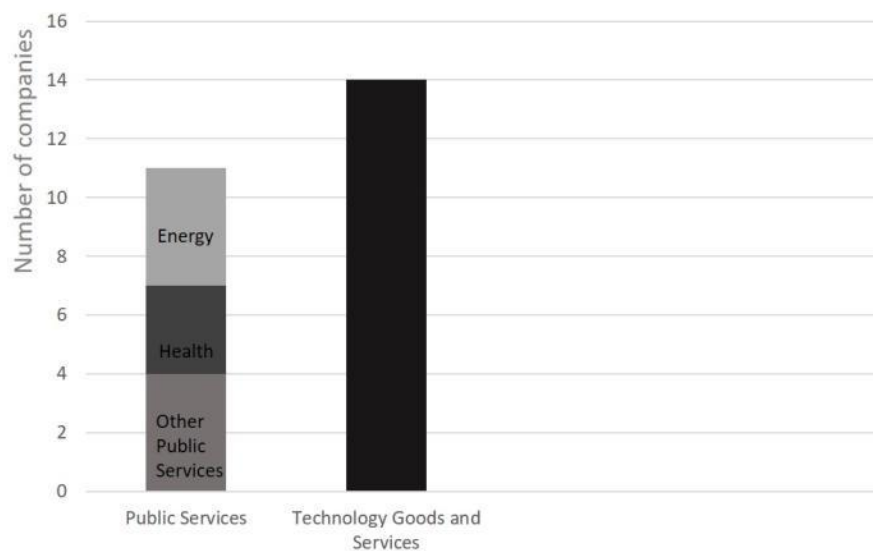
Figure 2. Selected FTSE MIB companies from different industries
Source: Own representation, based on information from Borsa Italiana Webpage (2022)

## 4. RESULTS

### 4.1. Financial Information - Correlation of Company Ratios and Earnings Management

Identifying Earnings Management can be important in order to interpret the current economic position of a company and to possibly predict future profitability, especially from the point of view of shareholders who are considering their investment decisions. Discretional, or abnormal, accruals of a company are a proxy for earnings management. The most well-known model for measuring abnormal accruals is the modified Jones-Model, which has been used for earnings management estimation. When reading key financial ratios in annual reports, such as ROA, ROE and profit margin, financial statement readers are advised to interpret them cautiously and consider the possibility of earnings management tactics, which might be linked to these financial company ratios.

Return on assets **(ROA)** is a measure that directly shows earnings in relation to a firm's assets, and is a widely accepted measure of firm performance among financial statement analysts. Kothari et al. (2005) suggest that accruals based earnings management could be positively influenced by a company's performance, measured by ROA, therefore a positive correlation can be expected (see also regression analysis in Keating and Zimmerman, 2000, p. 385, where a positive relationship was established). Moreover, an empirical study of Capalbo et al. (2014) discovered that, especially for the sample of state owned Italian companies, accrual based earnings management is more likely for companies with a greater profitability, which was measured by ROA (see Capalbo et al., 2014, p. 1035). The ratio return on equity (**ROE**), which can be obtained by dividing a firm's net income by its shareholder equity, is expected to have a positive correlation with earnings management (see regression analysis in

Bardetscher, 2011, p. 1511). The reason for an expected positive correlation of key profitability ratios and earnings management, could be in the phenomenon explained in the "bonus plan hypothesis", which states that managers tend to manage earnings to achieve bonus plan goals (see Watts and Zimmerman, 1990, p. 138; see Healy, 1985, p. 87). Income smoothing activities could also apply, where earnings are usually managed in such a way that they appear relatively smooth throughout the years, with the intention to avoid extreme shifts of reported earnings (see Beidleman, 1973, p. 653). It is also possible that companies strategically shape key financial ratios, which are sometimes the basis of loan contracts. A **profit margin** of a company can be defined as a ratio of operating income and sales (Jansen et al., 2011. p. 221). In general, upward earnings management can cause the profit margin to increase, therefore a positive correlation can be expected. For example, upward earnings management and an increased profit margin can be achieved through an overstatement of accounts receivables, in the case of understating bad debt expenses (see Jansen et al., 2011, p. 228), or in the case of depreciation choices or estimate revisions, which are affecting the time-series of depreciation expenses (see Keating and Zimmerman, 2000, p. 363). Changes in asset turnover (ratio of sales and net operating assets) and profit margin, which move in opposite directions, might signal earnings management because earnings management usually impacts operating income and net operating assets in the same direction (see Jansen et al., 2011, p. 228). In the following case study, the correlation between earnings management and three company ratios is studied. This analysis is limited to the scope of companies and sectors in this study. The specific company ratios are: ROA using net income, ROA using profit or loss before taxes, ROE using net income, ROE using profit or loss before tax and profit margin. The correlation has been calculated with a correlation coefficient for a 5 year period, for 2017 - 2021. For none of the sectors, earnings management seems to be significantly correlated with ROA. This applies for both versions, ROA using net income, as well as profit or loss before tax (see table 1 and 2).

| Sectors | Correlation Earnings Management , ROA using net income |
|---|---|
| Technology | 0,0079 |
| Energy | 0,1930 |
| Health | 0,1508 |
| Public Services | 0,1343 |

Table 1. Correlation earnings management and ROA using net income
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

| Sectors | Correlation Earnings Management, ROA using profit or loss before tax |
|---|---|
| Technology | 0,0620 |
| Energy | 0,1992 |
| Health | 0,1063 |
| Public Services | 0,1516 |

Table 2. Correlation earnings management and ROA using profit or loss before tax
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

The correlation of earnings management with ROE using net income and with ROE using profit or loss before tax is not high either, but slightly better than the correlation with ROA. Especially for the sectors energy and public services a slight positive correlation can be found (see tab. 3 and 4).

| Sectors | Correlation Earnings Management, ROE using net income |
|---|---|
| Technology | -0,0561 |
| Energy | 0,2247 |
| Health | 0,0409 |
| Public Services | 0,2282 |

Table 3. Correlation Earnings Management and ROE using net income
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

| Sectors | Correlation Earnings Management, ROE using profit or loss before tax |
|---|---|
| Technology | 0,0079 |
| Energy | 0,2262 |
| Health | -0,0970 |
| Public Services | 0,2783 |

Table 4. Correlation Earnings Management and ROE using profit of loss before tax
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

The correlation between earnings management and profit margin seems to be relevant only for the public services sector, where a relatively high positive correlation of 0,4 exists (see table 5).

| Sectors | Correlation Earnings Management and profit margin |
|---|---|
| Technology | 0,0037 |
| Energy | - 0,0380 |
| Health | 0,1245 |
| Public Services | 0,4029 |

Table 5. Correlation earnings management and profit margin
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

In summary, a relevant positive correlation in relation to earnings management could be found for **ROE** using net income for energy and public services, as well as **profit margin** for the sector public services, and also a slight positive correlation for the health sector.

**Return on equity** is an important measure of the profitability of a business in relation to its equity, and the reason for the positive correlation with earnings management could be, among various other reasons, income smoothing or in order to reach internally or externally communicated benchmarks in the energy and public service companies of the sample. **Profit margin** is a popular profitability measure as well, which is focusing on a firm`s net profit (earnings) relative to its revenue. The positive correlation of the profit margin with accrual based earnings management in the public services sector could be due to the fact that the earnings in the numerator can be in some cases managed stronger than company sales. As a result, a high profit margin can sometimes be an indicator of upward earnings management.

### 4.2 Non-Financial Information – Analysis of Sustainability Reports

The European Non Financial Reporting Directive 2014/95/EU, transposed into Italian law by legislative decree 254/2016, is obliging large companies of public interest to include a non-financial statement into their annual reports "with details on environmental, social, personnel, and safeguard for human rights" (Di Vaio et al., 2020, p. 2), starting from the year 2017. Prior to that, corporate social responsibility information had been published on a voluntary basis. The European Nonfinancial Reporting Directive represents a requirement of sustainability information representation and accountability of companies (see Campra et al., 2020, p. 4). In the following explanations, key environmental and social concepts of the empirical case study are discussed. Based on the study of Papoutsi and Sodhi (2020) and their detected relevant indicators in sustainability reports, sustainability is analyzed with the help of keywords within the two main categories *environmental* and *social* information (see Papoutsi and Sodhi, 2020, p. 4; see Closs et al., 2011, p. 109). In **figure 3**, the occurrence of keywords for the category "environmental" concerning the topics "sustainable" and "innovations" are presented graphically.
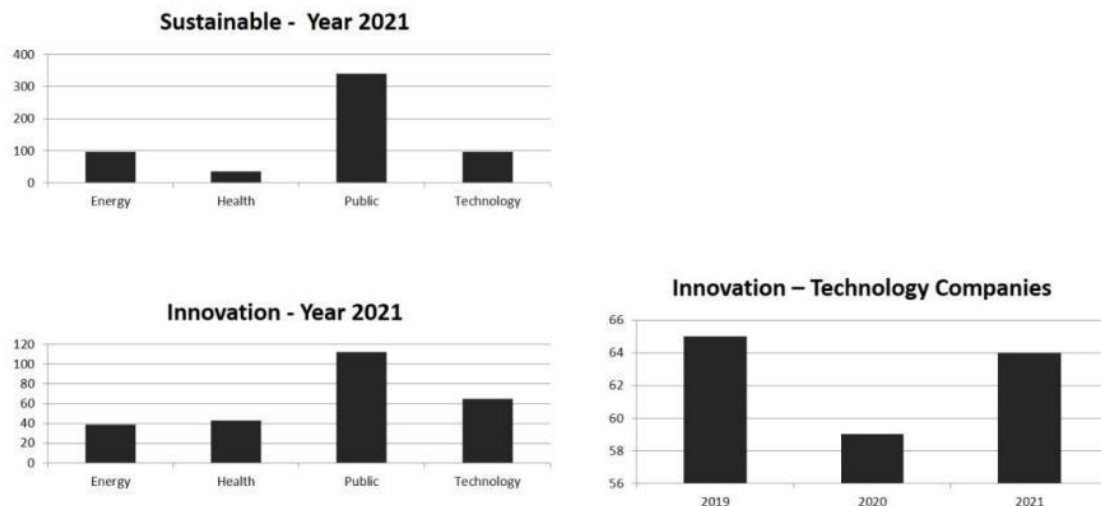
**Figure 3.** Occurrence keywords in sustainability reports of selected MIB FTSE companies for the category "environmental"
Source: Own representation, based on selected MIB FTSE listed sustainability reports from 2019-2021

**Sustainability** can be defined in the following w "*Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life*" (United Nations, 1987 p. 54). On a more practical level, EU Regulation 2020/852, so called *taxonomy* regulation, defines a "classification system (or taxonomy) to establish market clarity on what economic activities can be considered environmentally "*sustainable*"" (Gortsos, 2021, p. 341). In creating a common terminology, this regulation gives more clarity and transparency to investors and can increase investor trust (see Oostrum, 2021, p. 21). The most detailed explanations of sustainable activities in the sample in the year 2021 can be found in the public utilities sector (see figure 3).

In **figure 4**, the occurrence of the word "sustainable" in nonfinancial company reports of all the companies of the sample is represented. The top 3 companies are: Hera, Enel and A2A. The sustainability reports of these companies are analyzed in further detail.
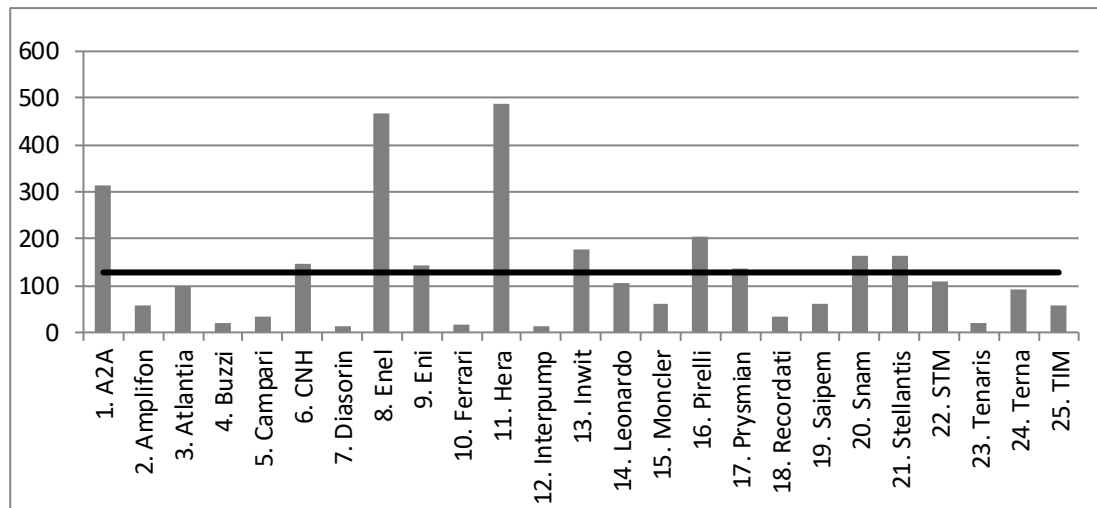
Figure 4. Occurrence of the keyword "Sustainable" in 2021 in sustainability reports of selected MIB FTSE companies
Source: Own representation, based on selected MIB FTSE listed sustainability reports in **2021**

*Hera* has a strategy for climate change mitigation which includes the use of renewable energy for business activities, increasing renewable energy production. Hera introduced circular economy initiatives, such as recycling and production of biomethane from organic waste (see Hera, 2022, p. 57). The company carried out assessments in the production of hydrogen from methane for the production of fertilizers for the agricultural sector, where hydrogen is the basic molecule in the end product (see Hera, 2022, p. 53). Other strategic efforts of Hera for climate change mitigation include technological innovation projects and reductions in the carbon footprint through energy efficiency plans (see Hera, 2022, p. 57).

*Enel* has implemented several circular economy initiatives. The *circular economy activities* of Enel are the following: Reduction of waste production, reduction of the pollutant load of wastewater, increase in recovery and recycling rate of produced waste and drain water, exploitation of by-products for use as raw materials in external production processes, reuse in second life equipment and products, careful selection of disposal service providers and use of IT systems for waste traceability (see Enel, 2022, p. 211).

*A2A* has made a commitment to sustainable water management, such as an integrated water cycle network (A2A, 2022, p. 91). Cooling water at hydroelectric plants is returned to the same water bodies with the same quality characteristics (A2A, 2022, p. 127). The group manages environmental risks according to long- and short-term perspectives (A2A, 2022, p. 58).

There is a broad agreement in academic literature that **innovation** is required to foster the need of de-carbonization of the economy since innovation processes could lead to production processes that are more energy efficient and less resource consuming (see Bosetti et al., 2011, p. 1313). In the detailed

description of "innovation/s" between 2019 and 2021 in the sustainability reports of the technology sector, the average occurrence of these words dropped sharply in 2020, whereas during 2021, the number grew again, nearly reaching the same level as in 2019 (see figure 3). A possible explanation for the drop in innovation efforts of technology-oriented companies in the year 2020 could be the covid pandemic. Since the sample contains exclusively Italian companies, it is relevant to discuss the specifics of the Italian economy in the time frame 2019-2021, which contains the years of pre-covid, lockdown and economic recovery. Among all European countries, Italy suffered one of the sharpest private consumption drops in the year 2020, of about 10% compared to the previous year, and a strong increase in the savings rate (see Guglielminetti and Rondinelli, 2021, p. 5). As a result, company innovation efforts strongly decreased in 2020, because the strong economic recession in Italy caused a shift of focus, away from innovation, since most investment activity was disrupted during that time (see Mofijur et al., 2021, p. 343). **Figure 5** shows the occurrence of keywords in the area human rights and corporate governance.
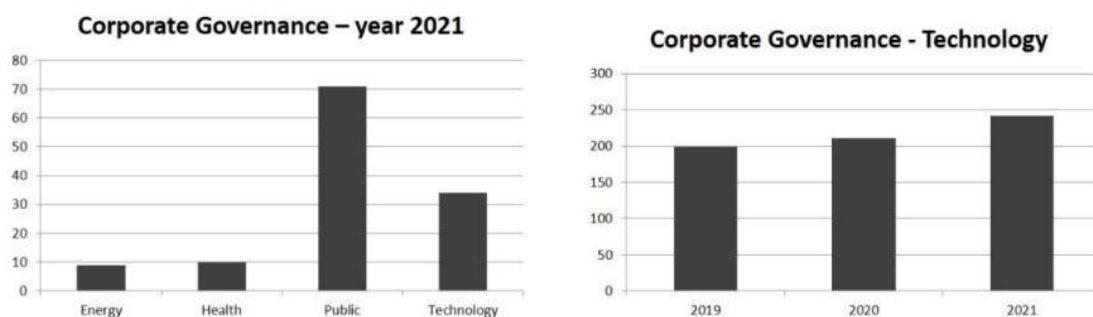


 Figure 5. Occurrence keywords in sustainability reports of selected MIB FTSE companies for the category "corporate governance"
Source: Own representation, based on selected MIB FTSE listed sustainability reports from 2019-2021

**Corporate governance** refers to the "set of mechanisms that influence the decisions made by managers when there is a separation of ownership and control" (Larcker et al., 2007, p. 963). The separation of ownership and control and the consequential information asymmetry and agency problem between management and shareholders create the need for ratification and monitoring mechanisms in order to "diffuse decision control systems of complex organizations'" (Fama and Jensen, 1983, p. 323). "A good corporate governance structure helps ensure that the management properly utilizes the enterprise's resources in the best interest of absentee owners and fairly reports the financial condition and operating performance of the enterprise" (Lin and Hwang, 2010, p. 59). The Italian "Codice di Corporate Governance" (updated in 2020), which is valid for "all companies with shares listed in the Italian main market MTA)" (Comitato Corporate Governance, 2020, p. 1), includes corporate

governance practices as recommendations that listed companies are supposed to follow, according to the "comply or explain" rule. The market pressures for following the recommendations of the Italian Corporate Governance Code are very strong, which makes these rules de facto binding for listed companies. On the European level, there are a number of relevant directives and regulations concerning corporate governance. Most notably, directive (EU) 2017/828, also known as **"Shareholder Rights Directive II"** (SHRD II), puts shareholder engagement rules on companies with shares that are traded on EU regulated markets. SHRD II had been implemented by Italian legislative decree no. 49/2019, and is "aiming at improving corporate governance through the promotion of effective and sustainable shareholder engagement and the improvement of transparency along the investment chain" (Katelouzou and Sergakis, 2021, p. 208). The Shareholder Rights Directive describes a general principle of equal treatment by stating that companies are supposed to secure equal treatment for all shareholders who are in the same position concerning participation and the exercise of voting rights in the general meeting (see Mucciarelli, 2021, p.11).

Corporate governance explanations in nonfinancial company reports of the sample in technology based companies grew from 2019 to 2021, and in the year 2021, the most detailed corporate governance explanations can be found in the sustainability reports of public utility companies of the sample.

## 5. CONCLUSION

The scope of earnings management can be revealed by discretionary accruals, which are estimated in an industry-specific regression, taking into consideration key balance sheet and income statement variables. Most **correlations** between earnings management and selected financial ratios of the sample companies are not very strong. These results could be explained by the small sample size and because of the heterogeneity of the units in the sub-samples. In fact, the least correlated sector seems to be "technology", which is the largest and most heterogeneous sector. Such heterogeneity levels can be expected when analyzing financial information of large companies. Even though these correlations might be relatively low, company ratios can be used as tool by financial statement readers, in order for them to assess company performance in a more accurate way, also because financial ratio benchmarks and trends tend to be considered in earnings management decisions (see Watts and Zimmerman, 1990, p. 139).

Moreover, an analysis of the **sustainability report content** of the sample companies could highlight the importance of **innovations** and **systematic sustainability risk management** in environmental sustainability efforts of Italian MIB FTSE listed corporations, since innovation is the basis for environmentally friendly production processes and nonfinancial risk management is a necessary tool

in achieving social responsibility goals in the corporate world. The empirical results of the nonfinancial company report analysis have shown the importance of environmental key sustainability concepts on which companies often tend to focus their efforts, in order to specialize and distinguish themselves, by providing detailed non-financial reporting explanations specifically on these concepts in their nonfinancial reports.

**The study`s contribution to accounting research** can be found in its various insights about empirical earnings management results and strategic sustainability management of Italian listed companies. Future research could focus on different regions with other laws and regulations than the European context. Studies on this topic can benefit both managers and policy makers, since "strong" corporate governance systems, which respect the **recommendations** of the Italian Corporate Governance Code, could protect shareholder interests and reduce **information asymmetry** between stakeholders and can play a crucial role in a sustainable development of a company (see Neves et al. 2022, p. 2).

A corporate governance system, which respects the guidelines of the Italian Corporate Governance Code, could, in reality, improve the reliability and market transparency for both financial and nonfinancial statement information.

In fact, the empirical results of the case study could show that corporate governance explanations in nonfinancial company reports of technology based companies grew from 2019 to 2021, which can be interpreted as a growing company awareness in the area of creating sophisticated corporate governance systems.

**A practical contribution of the case study** can be found in the fact that the results highlight the possibility of managers to use reporting strategies according to the **European Reporting Directive 95/2014/EU** to influence their relationship with their stakeholders in a positive way by publishing sustainability information purposefully and strategically in order to distinguish themselves from their competitors (see Perrini, 2006, p. 96). The future will show how much the **European taxonomy regulation** will be able to promote sustainability transparency of large companies and make it possible for sustainability report readers to distinguish between green marketing and greenwashing, and how much existing and future innovation incentives can contribute to climate change mitigation. A further analysis, starting from these results, could be conducted in future works with regard to sustainability reports of other regions or continents in comparison to EU regulations.

## REFERENCES

A2A (2022), 2021 Integrated Report, online available at: https://content.gruppoa2a.it/sites/default/files/2022-06/A2A-integrated-report-2021.pdf, 12.12.2022.

Alkurdi, A., A. Hamzeh and S. Khatib (2023), The mediating role of carbon emissions in the relationship between the board attributes and ESG performance: European evidence, in: Euromed Journal of Business.

Bardetscher, B. (2011), Overvaluation and the Choice of Alternative Earnings Management Mechanisms, in: The Accounting Review, 86.5, 1491-1518.

Beidleman, C. (1973), Income Smoothing, The Role of Management, in: The Accounting Review, 48.4, 653-667.

Borsa Italiana Webpage (2022), online available at https://www.borsaitaliana.it/azioni/azioni/azioni.htm, visited on 14. May 2022.

Bosetti, V., C. Carraro, R. Duval and M. Tavoni (2011), What should we expect from innovation? A model-based assessment of the environment and mitigation cost implications of climate-related R&D, in: Energy Economics, 33.6, 1313-1320.

Brief, R.P. and K.V. Peasnell (1996), Clean Surplus - A Link Between Accounting and Finance, New York, USA.

Brown, L. and M. Caylor (2005), A temporary analysis of quarterly earnings thresholds: propensities and valuation consequences, in: The Accounting Review, 80 (2), 423, 440.

Capalbo, F., A. Frino, V. Mollica and R. Palumbo (2014), Accrual-based earnings management in state owned companies: Implications for transnational accounting regulation, in: Accounting, Auditing & Accountability Journal 27.6, 1026-1040.

Campra, M., P. Esposito and R. Lombardi (2020), The engagement of stakeholders in nonfinancial reporting: New information-pressure, stimuli, inertia, under short-termism in the banking industry, in: Corporate Social Responsibility and Environmental Management, 27.3, 1-9.

Clarke, T. and M. Boersma (2017), The Governance of Global Value Chains: Unresolved Human Rights, Environmental and Ethical Dilemmas in the Apple Supply Chain, in: Journal of Business Ethics, 143.1, 111-131.

Closs, D., C. Speier and N. Meacham (2011), Sustainability to support end-to-end value chains: the role of supply chain management, in: Journal of the Academy of Marketing Science, 39.1, 101-116.

Comitato per la Corporate Governance (2020), Corporate Governance Code, Milan, Italy.

Dechow, P., R. Sloan, and A. Sweeney (1995), Detecting Earnings Management, in: The Accounting Review, 70.2, 193-225.

Di Vaio, A., R. Palladino, R. Hassan and F. Alvino (2020), Human resources disclosure in the EU directive 2014/95/EU perspective: A systematic literature review, in: Journal of Cleaner Production, 257, 1-18.

Enel (2022), Sustainability Report 2021, online available at: https://www.enel.com/content/dam/enel-com/documenti/investitori/sostenibilita/2021/sustainability-report_2021.pdf, 12.12.2022.

Fama, E. and M. Jensen (1983), Separation of Ownership and Control, in: Journal of Law and Economics 26, 301-325.

Gortsos, C. (2021), The Taxonomy Regulation: More Important than just as an Element of the Capital Markets Union, in: Sustainably Finance in Europe, Palgrave Macmillan, 351-395.

Guglielminetti, E. and Rondinelli, C. (2021), Consumption and saving patterns in Italy during Covid-19, in: Bank of Italy Occasional Paper, 620, 1-43.

Hansen, J.C. (2010), The effect of alternative goals on earnings management studies: An earnings benchmark examination, in: Journal of Accounting and Public Policy, 29, 459-480.

Healy, P. (1985), The Effect of Bonus Schemes on Accounting Decisions, in: Journal of Accounting and Economics, 7.1-3, 85-107.

Healy, P. and J. Wahlen (1999), A Review of the Earnings Management Literature and Its Implications for Standard Setting, in: Accounting Horizons, 13.4, 365-383.

Hera (2022), 2021 Sustainability Report, online available at: https://eng.gruppohera.it/group_eng/sustainability/sustainability-report/sr, 12.12.2022.

Jansen, I. P., S. Ramnath and T. L. Yohn (2011), A Diagnostic for Earnings Management using Changes in Asset Turnover and Profit Margin, in: Contemporary Accounting Research, 29.1, 221-251.

Jones, J. (1991), Earnings Management During Import Relief Investigation, in: Journal of Accounting Research 29.2, 193-228.

Katelouzou, D. and K. Sergakis (2021), When Harmonization is Not Enough: Shareholder Stewardship in the European Union, in: European Business Organization Law Review, 22, 203-240.

Keating, A. and J. Zimmerman (2000), Depreciation-policy changes: tax, earnings management, and investment opportunity incentives, in: Journal of Accounting and Economics, 28, 359-389.

Kothari, S., A. Leone, and C. Wasley (2005), Performance Matched Discretionary Accrual Measures, in: Journal of Accounting and Economics, 39.1, 163-197.

Larcker, D., S.Richardson, and I. Tuna (2007), Corporate Governance, Accounting Outcomes, and Organizational Performance, in: The Accounting Review, 82.4, 963-1008.

Lin, J. and M. Hwang (2010), Audit Quality, Corporate Governance and Earnings Management: A Meta Analysis, in: International Journal of Auditing 14, 57-77.

Maglio, R., A. Ray, F. Agliata and R. Lombardi (2019), Exploring sustainable governance: Compliance with the Italian related party transactions regulation for the legal protection of minority shareholders, in: Corporate Social Responsibility and Environmental Management, 272-282.

Michelon, G. and A. Parbonetti (2012), The effect of corporate governance on sustainability disclosure, in: Journal of Management and Governance, 16.3, 477-509.

Mofijur, M., I. Fattah, A. Alam et al. (2021), Impact of COVID-19 on the social, economic, environmental and energy domains: Lessons learnt from a global pandemic, in: Sustainable Production and Consumption, 26, 343-359.

Mucciarelli, F. (2021), General Principles of EU Corporate and Insolvency Law, in: ECGI Working Paper Series in Law, Working Paper No. 562/2021, 1-18.

Neves, M., A. Santos, C. Proença and C. Pinho (2022), The influence of corporate governance and corporate social responsibility on corporate performance: an Iberian panel data evidence, in: EuroMed Journal of Business.

Oostrum, C. Van (2021), Sustainability Through Transparency and Definitions: A Few Thoughts on Regulation (EU) 2019/2088 and Regulation (EU) 2020/852, in: European Company Law Journal, 18.1, 15-21.

ORBIS Europe Database (2022), online available at https://orbiseurope.bvdinfo.com/, visited on 14. May 2022.

Papoutsi, A. and M. Sodhi (2020), Does disclosure in sustainability reports indicate actual sustainability performance? In: Journal of Cleaner Production, 260, 1-10.

Perrini, F. (2006), The practitioner's perspective on non-financial reporting, in: California Management Review, 48, 73-103.

Preinreich, G. (1936), The Fair Value and Yield of Common Stock, in: The Accounting Review 11.2, 130-140.

Shen, C.-H. and H.-L. Chih (2007), Earnings Management and Corporate Governance in Asia's Emerging Markets, in: Corporate Governance: An International Review, 15.5, 999-1021.

Schilling-Vacaflor, A. (2021), Integrating Human Rights and the Environment in Supply Chain Regulations, in: Sustainability, 13.17, 1-15.

Suchman, M. (1995), Managing Legitimacy: Strategic and Institutional Approaches, in: Academy of Management Review, 20.3, 571-610.

Watts, R. and J. Zimmerman (1990), Positive Accounting Theory: A Ten Year Perspective, in: The Accounting Review, 65.1, 131-156.

United Nations (1987), Report of the World Commission on Environment and Development: Our common future, online available at: Report of the World Commission on Environment and Development : (un.org), 08.03.2023.

**APPENDIX**

| | 1. A2A | 2. Amplifon | 3. Atlantia | 4. Buzzi Unicem | 5. CNH Industrial | 6. Campari | 7. Diasorin |
|---|---|---|---|---|---|---|---|
| 2017 | -0,0062 | 0,029 | -0,0183 | -0,0061 | 0,4808 | - | - |
| 2018 | 0,0157 | 0,0414 | 0,0462 | -0,0517 | -0,0255 | 0,0154 | 0,026 |
| 2019 | -0,0165 | -0,037 | 0,0411 | 0,0159 | -0,1558 | 0,0378 | -0,036 |
| 2020 | -0,0055 | -0,0308 | -0,0396 | 0,0388 | 0,0454 | -0,003 | -0,001 |
| 2021 | -0,0067 | -0,0688 | -0,024 | -0,0043 | 0,0005 | -0,0473 | -0,026 |
| | 8. Enel | 9. Eni | 10. Ferrari | 11. Hera | 12. Infrastructure Wireless | 13. Interpump | 14. Leonardo |
| 2017 | -0,0021 | 0,0078 | 0,0547 | 0,0279 | -0,0045 | -0,0081 | -0,0397 |
| 2018 | 0,0202 | 0,014 | 0,0455 | -0,007 | 0,0089 | -0,0261 | -0,0129 |
| 2019 | 0,0006 | -0,0188 | -0,0895 | 0,0201 | 0,018 | 0,0197 | -0,0097 |
| 2020 | -0,0208 | -0,0115 | 0,0088 | -0,0131 | -0,0248 | -0,0006 | 0,047 |
| 2021 | -0,0135 | 0,0076 | -0,0754 | -0,0162 | -0,0062 | 0,0033 | 0,0147 |
| | 15. Moncler | 16. Pirelli | 17. Prysmian | 18. Recordati | 19. Saipem | 20. Snam | 21. Stellantis |
| 2017 | -0,0137 | -0,0063 | 0,0043 | -0,0112 | 0,095 | 0,0203 | -0,0559 |
| 2018 | 0,0189 | 0,0045 | -0,0071 | 0,003 | 0,0303 | 0,0185 | 0,029 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2019 | -0,0367 | 0,0101 | 0,0002 | -0,0167 | -0,0355 | 0,0051 | 0,0122 |
| 2020 | -0,0045 | -0,0341 | -0,0271 | 0,003 | -0,0149 | 0,0131 | 0,0003 |
| 2021 | 0,0118 | 0,0042 | 0,0066 | -0,005 | -0,0416 | -0,1009 | 0,011 |

| | 22. STMicroelectronics | 23. Telecomitalia | 24. Tenaris | 25. Terna | Sum of Earnings Management for each year for all companies (1-25) |
|---|---|---|---|---|---|
| 2017 | -0,0246 | 0,0106 | 0,0479 | -0,0675 | 0,5141 |
| 2018 | 0,0166 | -0,0106 | 0,0249 | 0,0508 | 0,2889 |
| 2019 | -0,01 | -0,0136 | 0,0187 | 0,0418 | -0,2345 |
| 2020 | -0,0593 | 0,0492 | -0,0431 | 0,0175 | -0,0808 |
| 2021 | 0,0528 | -0,0614 | -0,0175 | -0,0311 | -0,4334 |

Table A. Discretionary Accruals for selected MIB FTSE companies
Source: Own representation and calculation in R Studio, based on data from ORBIS Europe Database (2022)

# CHANGES IN THE PERCEPTION OF ETHICS IN INTERNATIONAL BUSINESS AMONG SLOVAK STUDENTS

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## ABSTRACT

Today, more and more attention is being placed on corporate ethics, since the greatest and only interest of the firm is not only its riches and revenue, but also its reputation. No business should ignore the fact that the duration of its successful operation on the domestic or international market is not only determined by numbers and profit but also by the number of satisfied customers who pay attention to not only the price and quality of the products or services they purchase, but also the ethical practices of the business. The primary purpose of the article was established on this premise. The article's major aim is to define the perception, meaning, and significance of ethics in international business from the perspective of Slovak students. For a more sophisticated examination of the researched topic, we performed our research over two time periods, allowing us to track the evolution and discover changes in students' perceptions of ethics in the corporate context. The major approach used in the research's execution was a questionnaire, including responses from students in Slovak universities. They responded to ten questions on corporate ethics in 2018 and 2023. Based on the questionnaire responses and a subsequent comparison of the two observable eras, we highlight the most significant changes and information connected to corporate ethics in this article. Students do not consider the current ethical standards to be sufficient. According to the respondents, ethics in business have deteriorated, and one can also see the initial manifestations of distrust in changes in business ethics. The article's limitation is that it only focuses on students from one nation.

*Keywords: ethics, ethics in international business, unethical behavior, change, students, Slovakia*

## INTRODUCTION

Business ethics is created by the entities that make up the business environment, and its functioning is conditioned by compliance with the ethical standards of all entities that influence it. Ethics is a globally researched issue and is addressed by many authors. The authors have developed several studies that relate to ethics in international business, but the authors deal with a wide range of

different aspects related to it. The studies are limited by their nature, complexity, and specificity of the investigated aspect of ethics in the international environment.

A lot of authors recognized the significance of students, or young people, who offer a future development viewpoint in this field. They narrowed their investigation to their perceptions and opinions on ethics in the international context.

The methodology used by the writers in their research also distinguishes them. When researching ethics in an international setting from the perspective of students, the most commonly utilized source of information is a questionnaire and its following statistical analysis. This input is then analyzed using models. The authors' research focuses on the analysis of ethics in international commerce using diverse nations as examples.

Based on the information presented above, we recognized a gap in the literature and established the main purpose of the essay as well as the research question. The primary purpose of this essay is to define changes in Slovak students' perceptions of the meaning and value of ethics in international business.

**Research Question:** Has the perception of ethics from the student's point of view improved over the years?

## THEORETICAL BACKGROUND

De George (1987) discussed the origins of business ethics in the Journal of Business Ethics, stating that business ethics evolved alongside a religious orientation to events in the corporate world and the interest of management education in social concerns. Although the topic of business ethics is as old as human history, it is only recently that it has emerged as an academic subject of study.

According to Lane et al. (1997) ethics is the study of morals, of systems of morality and principles of conduct. It is a set of principles that must be followed before any transaction may take place. Parts of them are or may be, protected by law. They are, however, neither comprehensive nor up-to-date. Furthermore, rules and regulations are frequently the product of a distinct and sanctionable set of morals that establish and enforce them (Schnebel and Bienert 2004). According to Svensson and Wood (2008), business ethics is the process through which a company establishes its principles, norms, and beliefs to be compatible with social standards and achieve its expectations. We shall reinforce the assertion with the insight of Leclair et al., (2000) who argue that ethics in international business is particularly hard and necessitates knowledge of both corporate operations and cultural expectations.

The notion that business ethics is an oxymoron, according to Crane and Matten (2016), implies that it does not exist in business. Ethics, according to Sharma et al. (2019), is a tool that directs human conduct, attitudes, and actions. They also underline the importance of ethics in organizations in building an individual's feeling of honesty, sincerity, transparency, equality, and trusting connection with colleagues and other associates who work in the same organization. Treviño et al. (2014) discuss behavioral business ethics. It is about understanding the key motivations of good and bad ethical decision-making, according to him.

Pojman and Fieser (2017) identify main roles of ethis: preventing society from falling apart, lowering human suffering, supporting human development, finding just solutions for conflicts of interest and revwarding or punishing right and wrong behaviour.

Poór et al. (2014) and Poór et al. (2015) concentrated on studying corporate ethics in the nations of Central and Eastern Europe, including Slovakia. Poór et al. (2015) claim that just as the ethical perspectives of the dominant nations affect minorities' attitudes toward universal laws and norms, so can cultural and historical origins. These two studies demonstrate that respondents' idealistic ideas, attitudes, and actions are more typical than those of their relativistic counterparts.


## METHODOLOGY

For the aim of processing the article, several scientific methods of study were applied. The collection and analysis of accessible literature sources served as the foundation for processing the theoretical portion of the work. It was mostly research done by writers whose findings were published in the Web of Science or Scopus databases.

We used the inquiry technique – a questionnaire – to process the empirical component of the article, and we acquired useful information for our research. For us, the target demographic was predominantly students, although the largest group was university students, with smaller groups of working people ranging in age from young to middle-aged to elderly. The realization that the future construction and perception of ethics is dependent on young people, and thus primarily students, made it easy for us to select the primary target population. We then classified these data by asking additional questions on gender, religion, and level of religiosity. We also concentrated on determining the exact field in which students are enrolled, as well as its more precise definition (additional information is supplied in a separate paragraph below in the article).

Lumsden and Fatoki, (2013), Okechukwu and Otu (2019), and Royaee et al. (2013) all used the questionnaire to gather information for studies on ethics in international commerce. The questionnaire responses were then analysed using regression models to assess the relationship between the selected

variables. Poór et al. (2015) and Poór et al. (2016) applied a questionnaire in their research, where one of the main groups of respondents was represented by students with a focus on business.

Our questionnaire had ten questions, which we labeled with the letters Q1 – Q10. The questions in this area deal with basic business ethics issues and are oriented at society or business ethics in general. Respondents were asked to rate our claims on a seven-point scale, from strong disagreement (1) to strong agreement (7). The table below provides a summary of the questions that were posed to the responders.

| Q1 | It is possible to improve ethics in business. |
|---|---|
| Q2 | Current ethical standards correspond to the needs of society. |
| Q3 | A change in business ethics will affect our standard of living and way of life. |
| Q4 | Business ethics will improve in the future. |
| Q5 | Business ethics have deteriorated over the years. |
| Q6 | Ethical aspects should be considered when designing company policies. |
| Q7 | Business ethics take a backseat to government regulation and inflation. |
| Q8 | Current ethical standards meet the needs of our business. |
| Q9 | Businesses in the EU are expected to operate at a higher ethical level than businesses in other countries. |
| Q10 | The ethics of business people are worse than the ethics of individuals in government. |

Table 1. *Questions*
*Source: processed by authors according to the questionnaire*

Following the collection of all responses, the data were analysed using statistical and mathematical methodologies. We processed the discovered data in the form of graphs to enable a clearer display of the results. From this perspective, it is important to note that the investigation was conducted across two time periods: 2018 and 2023. The data and the first round of the questionnaire from 2018, which form the bulk of the final thesis, were derived entirely from a survey conducted by professors Dr. Arthur Rubens of Gulf Coast University (FGCU) and professor Sonia Ferencikova, PhD. in collaboration with a team from the EU's Department of International Trade.

We compared the results in the two observed periods using the comparison approach and described the fundamental findings and changes in students' attitudes on ethics in international business using the synthesis method after performing the research in 2023 and processing the data.

## RESULTS AND DISCUSSION

The chapter's major topic will be the analysis of the study results for 2023 and their comparison with

the results from 2018. Using the comparison, we will determine which sections or components have seen the most changes, or which circumstances are viewed the same as in 2018. For clarity, questions Q1 – Q10 were broken into two tables of five questions each, allowing us to illustrate changes in results between 2018 and 2023 on the overview graphs. The findings of questions Q1 – Q5 are presented in Graph 1.
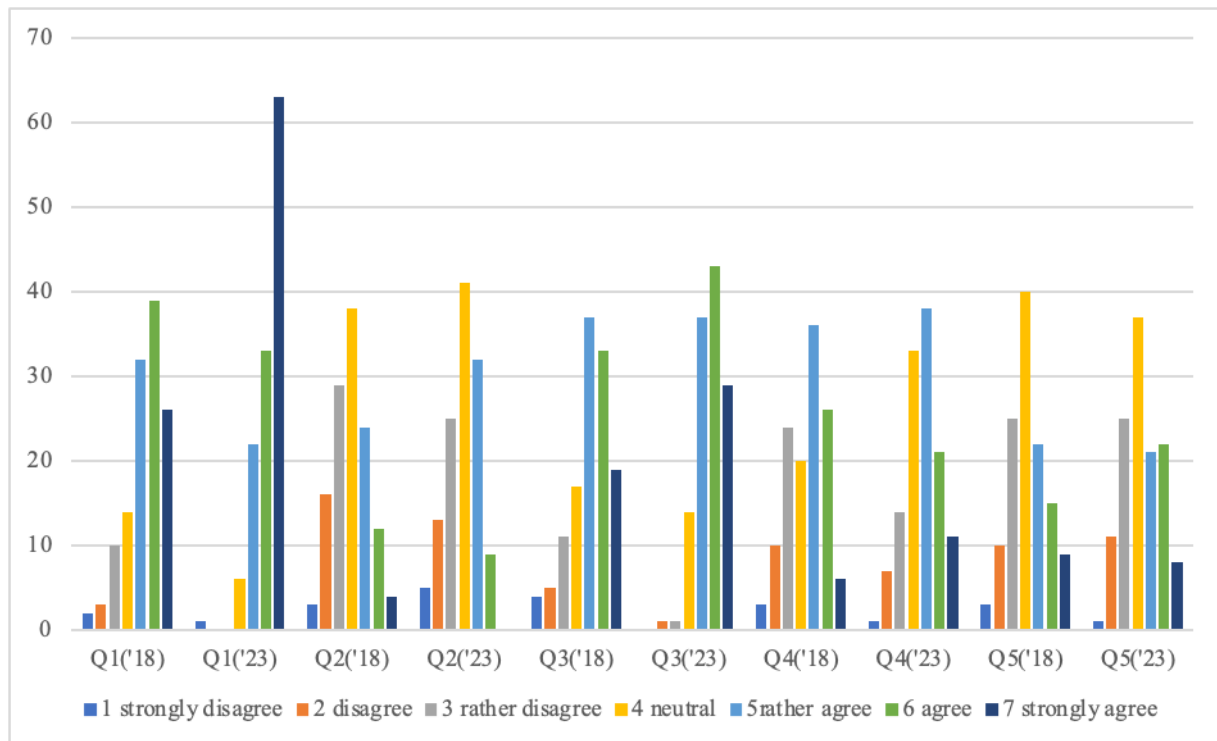


Figure 1 Comparison of results for 2018 and 2023 questions A1 – A5
Source: processed by authors according to the questionnaire (2018, 2023)

In 2023, we notice a shift in the findings for the issue of whether it is feasible to enhance company ethics. In 2018, respondents said that it is feasible to enhance ethics. As we can see, the rate of agreement is higher in 2023, indicating that students consider the need to enhance ethics and the opportunity for growth in ethics as being greater than in 2018. We also begin with the fact that, even when we look at the responses from a broader spectrum, we notice the greatest change in the degree of agreement in comparison to 2018, when answers of the opposite character and hence disagreement are nearly nonexistent. The cause for this might be either less ethical behavior by corporations in 2018 or improved knowledge of unethical behavior and unethical practices by companies, resulting in a better understanding and the accompanying need for change.

As previously said, human society as a whole evolves with time, as do its ideals, and changes in ethical standards should follow suit. Based on our study, we can infer that, as in 2018 and 2023, the majority of them have a neutral stance, and the number of students who hold this view has even risen. However, we may see a difference in the findings even here. At first look, the greatest conceivable

degree of agreement (7) does not appear in the replies in 2023, while the level of absolute disagreement has grown. So, just as in 2018, students did not believe that present ethical norms were adequate; in 2023, this attitude has increased, and, despite a greater degree of uncertainty, we see a greater degree of disagreement.

Changes in corporate ethics influence on the country's population's level of life. The style of life and level of living is also going in the same direction as corporate ethics since they impact one another. We see a higher degree of agreement in 2023 with the assertion that a shift in corporate ethics would affect people's way of life and standard of living. While we might see a diversity of answers in 2018, despite a high level of agreement, these answers are more clear and tend to accord in 2023. The graph above also shows a smaller proportion of confusing replies. According to the findings, respondents in 2023 will be more conscious of the link between changes in company ethics and their way of life. Previous questions regarding the improvement of business ethics and the sufficiency of current ethical standards and their achieved results indicate that it is important to pay increased attention to changes in business ethics and to try to achieve positive changes, the effect of which is an increase in the population's standard of living, and thus countries as a whole.

During Q4, we looked into methods to increase ethics in the future. According to Graph 1, there are differences in the attained outputs between the monitored years. Even though that the degree of agreement is strong in both studied periods and therefore offers a picture of contemporary Slovak student opinion, it is vital to note the growth in the answer that reflects uncertainty. Respondents' uncertainty may reflect an early stage of skepticism about the prospect of enhancing ethics in international business in the future. These sentiments may have a detrimental influence on the endeavor to modify international business ethics and the ethical behavior of persons operating in this setting.

We felt it was vital to find out whether, according to the respondents, corporate ethics had deteriorated through time to have a more thorough picture of the perception of changes in ethics, whether looking to the future or reflecting changes from the present to the past. In 2018, we saw very confusing responses, and only after further analysis did we conclude that, according to the respondents, corporate ethics has deteriorated. Despite the still substantial proportion of uncertain answers in 2023, we notice that the amount of agreement with the supplied statement has grown, implying that students in 2023 see a worsening of corporate ethics than students in 2018. However, we would like to draw attention to the occurrence of several unforeseen occurrences that, in their unique way, quickly and dramatically impacted many elements of business and ethics. In the following graph, we present the results resulting from questions Q6 – Q10.
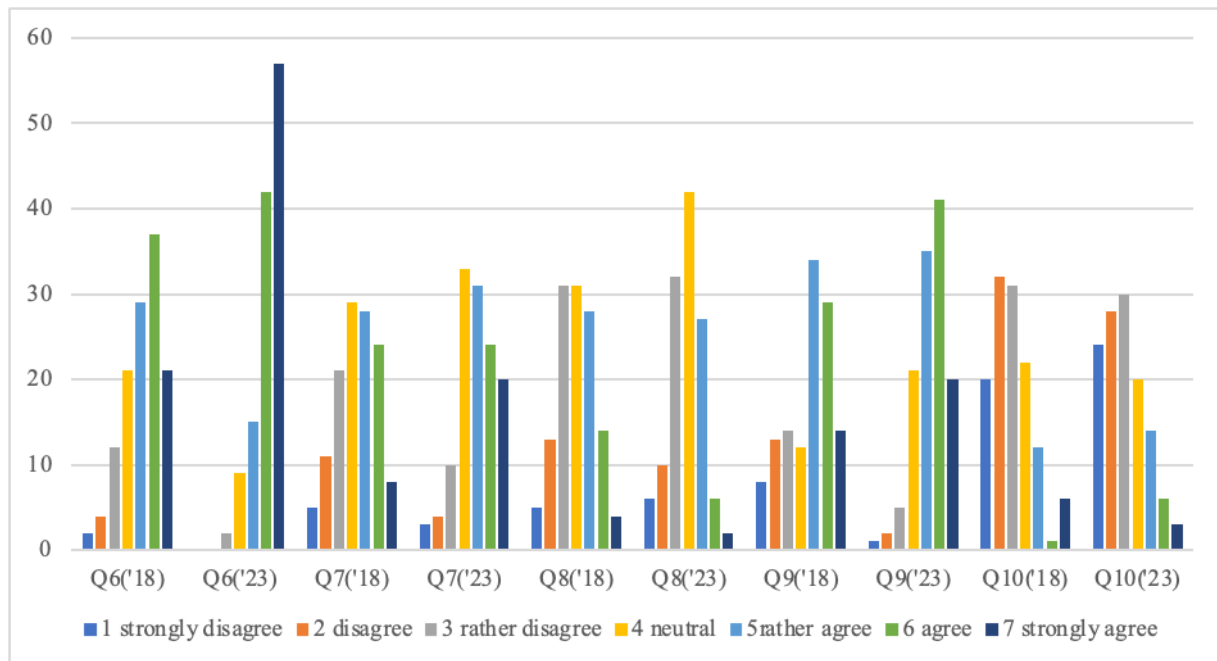
Figure 2 Comparison of results for 2018 and 2023 questions A6 – A10
Source: processed by authors according to the questionnaire (2018, 2023)

The need for corporations to develop new policies and be mindful of the ethical issues that may arise during their implementation was already recognized by our respondents in 2018. Based on Graph 2, we may conclude that in 2023, there was a significant increase in strong agreement and a decline or even absence of negative responses, i.e. disagreement. It can be argued that during five years, not only entrepreneurs but also students, have become more cognizant of the necessity of business ethics. These findings also indicate that the enhancement of corporate ethics in the future has a lot of promise.

As in 2018, issues about politics and government engagement in business and ethics are increasingly difficult to address clearly in 2023. Nonetheless, a movement toward affirmative responses may be seen in 2023. Students agreed more strongly and visibly in 2023 with the assertion that corporate ethics are sacrificed to government regulation and inflation. Another aspect that affected respondents' responses was the fact that inflation in 2022 reached 12.8 %, which is more than ten percentage points more than in 2018 (Statistical Office of the SR, 2023).

The question of whether ethical standards fit our company's demands (Q8) has also evolved. The graph shows that the ratio of unclear attitudes rose in 2023 compared to 2018. Based on the graph's data, it is possible to conclude that present ethical norms do not match the demands of business. In the context of this issue, a link may be made with question Q6, which dealt with the need of considering ethical concerns while developing company policy.

A certain level of ethical behavior is expected from businesses in the EU, as part of the grouping of developed countries. In 2018, respondents assessed that companies in the EU should operate at a higher ethical level, and in 2023, as we can see on the graph, respondents expressed a higher degree of agreement with our statement and therefore expect a higher ethical level of from companies in the EU compared to businessmen from other countries outside the EU.

In the case of Q10, it can be claimed that, according to the respondents, the ethics of entrepreneurs were better than the ethics of government employees in 2018. This assertion may be supported and related by the perception of entrepreneur credibility as measured by Transparency International's CPI index. Slovakia received a score of 53 out of 100 in 2022, placing it 49th out of 180 nations (Transparency International, 2023). In 2023, we witness a shift in the character of respondents' responses, with an increase in not just the amount of replies indicating agreement with the provided statement, but also answers that are closer to agreement or do not show strong opposition. On the one hand, Slovakia has improved in the CPI index compared to 2018, which suggests that the perception of trustworthiness, and thus the ethics of individuals in government, has improved; on the other hand, it also suggests that the ethics of entrepreneurs has deteriorated significantly since 2018, to the point where they have lost or approach the ethical level of individuals in government.

Because our study was limited to Slovak students, they thought it was important to learn how they see business and ethics in Slovakia. To say the least, the findings of this question were intriguing, with up to 57% of students believing that entrepreneurs in Slovakia do not operate more ethically than entrepreneurs in other nations. The additional question was to ask people to indicate in which nation Slovakia does not act more ethically. Western European countries such as Germany, Switzerland, the Netherlands, Austria, Finland, Norway, Denmark, Belgium, and Canada were the most commonly mentioned. We also asked which nations are more ethical than Slovakia, and the most often mentioned countries were Russia, Serbia, India, and Turkey. This also leads us to the conclusion that Slovakia could take inspiration from other countries in creating a code of ethics and adopt their ways of solving ethical dilemmas in business.

## DISCUSSION

The statistical sample for our study was made up of students from Slovakia. In 2018,             the questionnaire was completed by 77 % of full-time students and 23 % of external students. In terms of gender, more women (69 %) than males (31 %), participated in the survey, and   the majority of respondents (90 %), were single. In terms of age, the majority of respondents (80 %) were between the

ages of 20 and 25 while 12 % were between the ages of 26 and 40. More than 87 % majored in business, with management (44 %), other majors (28 %), marketing (18 %), and finance (6 %).

In 2023, the questionnaire was completed by 92 % of full-time students and 8% of part-time students. Even in 2023, women (70.4 %) outnumbered males (28.8 %) and representatives of the other gender (0.8 %) in the questionnaire. In terms of age, the great majority (83.2 %) were between the ages of 20 and 25, with 12.8 % being between the ages of 26 and 40. The majority of students had an economic (68.8 %) or other (16.8 %) academic focus, although there were also a few technical, natural science, and medical students. Management (40 %), marketing, and another degree were the most prevalent majors among economically focused students. Finance and accounting representatives were also present. Based on the information provided, it is possible to deduce that the respondents in our questionnaire were more commonly women than males, were between the ages of 20 and 25, and most frequently studied economics and management, which may have an impact on the conclusions produced.

The authors' research focuses on the relationship between the perception of ethics in international business and the statistical sample used to conduct the research. According to Lumsden and Fatoki (2013), there is no substantial difference in the opinions of business and non-business students about corporate ethics. Sunaryanto et al. (2018) compared three groups of accounting, management, and economic development students. This study also looked at the impact of the study time on students' perceptions of the role of ethics in business. Using one-way ANOVA and the independent t-test, it can be inferred that there was a significant difference in student attitudes on the role of ethics in business across accounting, management, and economic development students. According to Royaee et al. (2013), there is no significant link between independent variables such as responder group, gender, age, and experience and dependent variables such as the value of ethics and the importance of aims of ethics education.

## CONCLUSION

Ethics is vital in society since it is a component of everyday life, not just corporate life. As a result, it should be given more attention, alongside ethical problems, not just in corporate circles. Based on our findings, we can infer that even university students understand the significance and value of ethics in international business and that as time passes, they place a greater emphasis on it. Table 2 summarizes the important findings of our research.

| Nr. | Results |
|---|---|
| Q1 | The number of students who strongly agree with the assertion that it is feasible to consistently enhance corporate ethics has increased dramatically |
| Q2 | The respondents consider the current ethical standards to be sufficient |
| Q3 | Respondents are increasingly aware of the link between changes in company ethics and lifestyle |
| Q4 | There are early signs of skepticism about the likelihood of increasing ethics in international business in the future |
| Q5 | Business ethics worsened in 2023 compared to 2018 |
| Q6 | Not only businesspeople but also students have become increasingly cognizant of the necessity of corporate ethics |
| Q7 | Government regulation and inflation affect business ethics |
| Q8 | Current ethical standards do not meet business needs |
| Q9 | They expect a higher ethical level from businesses in the EU compared to businessmen from non-EU countries |
| Q10 | The ethics of businessmen are better than the ethics of individuals in government |

Table 2. *Main findings*
Source: processed by authors

The ethical behavior of enterprises throughout the world should be reinforced, either via the development of recommendations by international organizations or inside the state itself. Furthermore, school students' understanding of business ethics should be developed and they should be educated in a way that will assist them make ethical judgments.

According to the results of the questionnaire, we discovered positive changes that could improve the overall image of the country in business circles in the future and make Slovakia a popular country for investors not only because of cheap labor, tax benefits, and geographical location but also because of the friendly and ethical business environment.

Our research is limited by the fact that it can only be conducted on the territory of one nation, as well as the larger engagement of respondents whose studies are focused on economic directions. International business or our queries may be posed to students from other nations and compared to research conducted in Slovakia.

## ACKNOWLEDGEMENTS

# REFERENCES

De George, R.T. (1987) 'The status of business ethics: Past and future', Journal of Business Ethics, 6(3), pp. 201–211. doi:10.1007/bf00382865.

Iyer, G.R. (2000) 'Approaches to ethics in International Business Education', Journal of Teaching in International Business, 11(1), pp. 5–20. doi:10.1300/j066v11n01_02.

Crane, A. and Matten, D. (2016) Business Ethics : Managing Corporate Citizenship and Sustainability in the Age of Globalization. 4th ed., Oxford University Press, Oxford.

Lane, H. W. (1997). International Management Behaviour. 3rd ed., Blackwell Publishers Inc., Malden.

Leclair, D.T. et al. (2000) 'Ethics in international business education', Journal of Teaching in International Business, 11(1), pp. 43–71. doi:10.1300/j066v11n01_04.

Lumsden, J. and Fatoki, O. (2013) 'An investigation into the attitudes of business and non-business university students toward Business Ethics in South Africa', The Anthropologist, 15(3), pp. 249–253. doi:10.1080/09720073.2013.11891315.

Okechukwu U. F. and Otu, M.S. (2019) 'Effect of exposure to business ethics courses on students' perceptions of the linkage between ethics education and Corporate Social Responsibility', Journal of Education for Business, 95(4), pp. 242–247. doi:10.1080/08832323.2019.1646698.

Pojman, L.P. and Fieser, J. (2017) Ethics: Discovering right and wrong. Boston, MA: Cengage Learning.

Poór, J. et al. (2015) 'Idealism and relativism in ethics: The results of empirical research in seven CEE countries and one North European country', Journal of East European Management Studies, 20(4), pp. 484–505. doi:10.5771/0949-6181-2015-4-484.

Poór, J. et al. (2016) 'Evaluation of ethical position in eight CEE countries and Finland – results of an empirical research', Journal of Eastern European and Central Asian Research, 3(2). doi:10.15549/jeecar.v3i2.121.

Royaee, R. and Ahmadi, S. A. and Jari, A. (2013) 'Students' and faculty members' perceptions of the importance of business ethics and accounting ethics education: Iranian case' Asian Journal of Business Ethics, 2(2), pp. 163-171. doi: 10.1007/s13520-012-0023-7.

Sharma, A., Agrawal, R. and Khandelwal, U. (2019) 'Developing ethical leadership for business organizations', Leadership &amp; Organization Development Journal, 40(6), pp. 712–734. doi:10.1108/lodj-10-2018-0367.

Schnebel, E. and Bienert, M.A. (2004) 'Implementing ethics in business organizations', Journal of Business Ethics, 53(1/2), pp. 203–211. doi:10.1023/b:busi.0000039409.58757.a8.

Statistical Office of the SR (2023) Inflation: Consumer price indices in the year 2022. , Slovak.statistics.sk. Available at: https://susr.statistics.sk/wps/portal/ext/products/informationmessages/inf_sprava_detail/!ut/p/z0/fY7Rb4IwGMT_Gh-_fAWKg0cwmQPnEmMWsS9LCx0irq1tZdt_b9nefbpccve7Q4YNMsWnoed-0Ipfgj-y5cfuqcrKMioIKV8TUtWb_dvL6jlev6e4lwprZP1Fi_94bLerbY_McH-CQX1qbL6Nw8Zo6-eE_PHBWN3dWu_m6mN-IA7n65UVyFqt_F9bC8dPINWMBz76BZl37Fc4PSkJzlg-_S7I5KQfg2adkDGnKZAobYFGOYWcdgTyZCmFoJnIowTNuD4UwI53udPS5Q!!/ (Accessed: 02 March 2023).

Sunaryanto et al. (2018) 'Student views of ethics position in business (comparison among students of accounting, management, and Economic Development Department)', KnE Social Sciences, 3(3), p. 442. doi:10.18502/kss.v3i3.1902.

Svensson, G. and Wood, G. (2007) 'A model of business ethics', Journal of Business Ethics, 77(3), pp. 303–322. doi:10.1007/s10551-007-9351-2.

Transparency International (2023). Corruption perceptions index. Available at: https://www.transparency.org/en/cpi/2022/index/svk

Treviño, L.K., den Nieuwenboer, N.A. and Kish-Gephart, J.J. (2014) '(UN)ethical behavior in organizations', Annual Review of Psychology, 65(1), pp. 635–660. doi:10.1146/annurev-psych-113011-143745.

# SUCCESSION OF DAUGHTERS IN FAMILY BUSINESS

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## ABSTRACT

Succession is one of the main problems affecting family firms longevity, and it is very much influenced by gender and stereotypes. Despite all contrary evidence, male successors abound among these organisations since predecessors insist on excluding their daughters from the succession process. This conceptual paper intends to examine daughters' succession in family businesses, to comprehend the factors that enhance and condition it. It finds that daughters scarcity relates to the traditional role that precedes them, which not only conflicts with the entrepreneur position but also contributes to their capabilities to remain invisible and undervalued. However, ascension to management for daughters can happen in critical or sudden situations. Even so, daughters' succession offers the business potential economic and social benefits over sons.

*Keywords: Daughter succession; Family firms; Daughter involvement; Gender*

## INTRODUCTION

This study aims to develop and continue the theories around daughters' succession and fill some of the literature gaps mentioned next. Its principal goal is to examine how their succession unfolds, by comprehending its context and effects, to understand the reasons inherent to daughters' dearth or avoidance in family businesses.

Family firms have always been a cornerstone of countries' social and economic well-being (Aldamiz-Echevarría et al., 2017, Franco et al., 2023). In Portugal, more than 70% of the firms are of this type, ensuring about 65% of work and contributing to more than 50% of the GDP (Pimentel, 2022, Franco et al., 2023).

One major problem with family enterprises is business continuity for the following generations (Wang, 2010, Meroño-Cerdán, 2022). Only 30% of the companies survive the transition to the second generation, and most successions fail after the second one takes control (Miller et al., 2003, Urban and Nonkwelo, 2020, Avloniti et al., 2013, Franco et al., 2023). Therefore, succession planning and the selection of a successor assume prominent roles (Franco et al., 2023).

However, studies reveal this selection is not always well-considered and thoughtful (Aldamiz-Echevarría et al., 2017, Vera and Dean, 2005, Wang, 2010). In fact, male successors are chosen over females (Overbeke et al., 2013, Urban and Nonkwelo, 2020, Vera and Dean, 2005, Meroño-Cerdán, 2022, Franco et al., 2023) because of macro factors related to social and cultural attitudes, or micro associated with familial and individual characteristics (Wang, 2010). Nevertheless, daughters can succeed when critical or sudden events happen (Meroño-Cerdán, 2022, Overbeke et al., 2013, Wang, 2010, Marín-Palacios, 2023).

Consequently, female succession and the involvement of women in family firms have been gaining interest among authors, although it has yet to be thoroughly investigated.

Firstly, there needs to be more consensus among theories and concepts concerning the visibility and role of women in family firms. For example, some authors argue that women experience more glass ceiling in family companies (Almlöf and Sjögren, 2021) and others state the opposite and affirm that familial contexts are the most favourable for daughters to develop their path as leaders (Campopiano et al., 2017, Jimenez, 2009, Maseda et al., 2021, Meroño-Cerdán, 2022).

Secondly, little light was shed on some topics. On the one hand, several studies focus on the factors that facilitate and/or affect daughters succession, namely gender and the challenges women face when in these positions (Maseda et al., 2021, Mussolino et al., 2019, Overbeke et al., 2013). On the other hand, few address the roles, contributions and involvement of daughters in the business (Jimenez, 2009, Bağış et al., 2022, Maseda et al., 2021), their individual motivations to achieve leadership positions, their managerial style, or personal goals (Sharma, 2004) or even the problem of underutilisation of women (Overbeke et al., 2013). In addition, it lacks studies about cases where daughters have succeeded, especially in critical events (Mussolino et al., 2019, Meroño-Cerdán, 2022) as well as about the facets of father-son and father-daughter succession (Smythe and Sardeshmukh, 2013, Overbeke et al., 2015). Moreover, little was said about overcoming daughters' scarcity as successors (Maseda et al., 2021, Overbeke et al., 2013, Vera and Dean, 2005) or the differences between the family firms that choose them to succeed and the ones that do not.

Therefore, this work will answer the following research question: how does the succession of daughters occur in family firms?

It will be addressed by understanding how the succession of daughters is processed, namely in which contexts and motivated or restricted by which factors. To this end, it is important to determine their role in the firm regarding functions, visibility, and leadership style. Likewise, it matters study the factors that enhance succession and the obstacles to it, along with the cultural differences between family firms with and without daughters successors.

After that, a conceptual framework will be presented to summarise the principal notions about the theme under analysis.


## LITERATURE REVIEW

Family firms represent many organisations (Le Breton-Miller et al., 2011, Franco et al., 2023). Because of this, several authors have tried to understand what differentiates them from others (cf. (Howorth et al., 2010, Daspit et al., 2021, Pounder, 2015)) and how the succession process is developed (Brockhaus, 2004, Chua et al., 2003, Venter et al., 2005).

*Family businesses*

Family business is a complex and broad concept. Even though many authors have tried to define it, by articulating theoretical and operational notions and reviewing existing definitions, there is a lack of consensus on its universally accepted meaning (Gherardi and Perrotta, 2016, Howorth et al., 2010, Sharma, 2004, Astrachan et al., 2002, Chua et al., 1999). In fact, *"defining the family firm is the first and most obvious challenge facing family business researchers"* (Handler, 1989 in Astrachan et al., 2002).

 Authors believe the simplest way to define a family business is as a company owned and/or managed by a family (Pounder, 2015, Chua et al., 1999). Nevertheless, some definitions can be too narrow and limited, and others too far-reaching (Zachary, 2011), including firms that are not family and excluding others that are (Howorth et al., 2010). However, many other notions exist, and investigators can opt for the one more suitable for their studies.

Firstly, a family firm can be explained by comparing it to a non-family. According to some authors, a family enterprise is distinct because of family members' ties and role in the business (Howorth et al., 2010, Stasa and Machek, 2022). In fact, family companies have unique succession purposes, financial and non-financial goals, governance systems, values and results (Daspit et al., 2021) whereas non-family businesses differ in dimensions as entrepreneurial activities, performance, and consciousness of environmental opportunities and threats (Sharma, 2004).

Secondly, an article from Astrachan et al. (2002) mentions that family businesses can be defined considering the succession factor. Thus, family businesses are those which are owned and managed at least by a second generation and there is an intention to keep ownership among the family (Achtenhagen et al., 2022).

Thus, considering the Three-Circle Model (Figure 1), a family firm can be defined as a complex system, compound by three subsystems – ownership, business, and family – which are intertwined and influence each other (Gersick et al., 1999, Moores, 2009, Maseda et al., 2023). This model identifies seven situations in which the individual can be linked to the firm. However, each person can only frame one of the following classifications: family member without any connection to the organisation;

shareholder without family ties and who does not work in the company; firm worker with no family connection and no shareholder participation; family member with an equity interest in the business, but not working in it; shareholder and employee, but not belonging to the family; family member and employee, without shareholder participation; family member, worker, and shareholder (Gersick, 1997).

**The Three-Circle Model**

Ownership
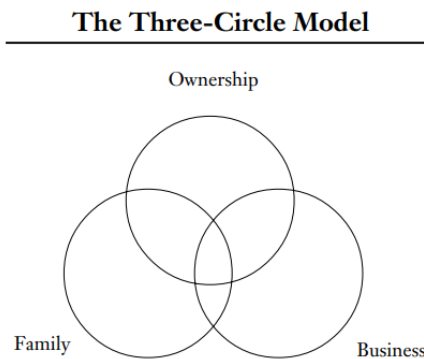
Family                    Business

This model highlights unclear boundaries between the family and the business context. The fact is that managers are not always able to separate these dimensions, being the decisions affected by all the contexts (Morris et al., 1997, Maseda et al., 2023). Hence, it can be deduced that these interconnections characterise and distinguish family firms from the remaining.

*Succession in family businesses*

Succession is one of the most critical barriers family businesses must overcome to ensure continuity (Ibrahim et al., 2001, Morris et al., 1997, Ferrari, 2021). It can be defined as the transference of business ownership and management to a younger generation to maintain control within the family (Wang, 2010). Consequently, founders choose, at first, their children, then other family members and, only if none of them is available, non-family employees (García-Álvarez et al., 2002).

The choice to perdure the business in the family relates to the need to preserve the values, conserve the family reputation, and take advantage of the several benefits of this type of company (Lambrecht, 2005).

Family succession can be divided into four categories. The first one is sudden succession, which happens when an unexpected event occurs that hinders CEOs from performing their functions and forces the selection of a new successor, several times not prepared. Secondly, the rushed succession, which precludes a previous planning, exists a time interval, wherein information and assets can be exchanged. Thirdly, natural immersion relates to a natural succession, where the incumbent gradually steps aside, and the chosen successor takes on the new position. Here, it is common that the successor has never had any professional experience other than this. Finally, the planned succession includes formalizing the transfer of ownership and control to the previously selected follower generation (Steier, 2001, Franco et al., 2023).

Scholars advance that succession develops through three stages: the planning, which is an intended and formal procedure that eases the transfer of management from the predecessor to the follower (Marshall et al., 2006) and involves selecting viable successors; the training and transmission of critical knowledge to them; the taking control of the business by the chosen successor; and the incumbent stepping aside (Ibrahim et al., 2001, Daspit et al., 2021, Meroño-Cerdán, 2022). To emphasise that planning succession arises from the founder's predisposition to pass on the business, and the successor's willingness to join (Meroño-Cerdán, 2022).

According to Meroño-Cerdán (2022), succession can be motivated by institutionalisation, imposition, implosion, and individualisation. The first one derives from a heavy desire for business continuity and the preservation of family harmony whereas imposition takes place when exists the desire for continuity, due to favourable business performance, but a poor relationship between family members. Here, the founder usually opts for the primogeniture rule. Thirdly, implosion relates to unprepared successors and unclear plans because there is not only weak family harmony but also no ambition for the business to proceed. Finally, individualisation means selling the company to conserve a good relationship within the family.

Despite its significance, many firms failed to succeed, namely owing to non-existent or unclear succession plans – about 32% to 50% of the companies do not have a plan (Meroño-Cerdán, 2022) –, unprepared successors, family conflicts (Miller et al., 2003, Nave et al., 2022, Caputo et al., 2019, Avloniti et al., 2013), and a poor relationship between the incumbent and the successor (McAdam et al., 2021). Incumbents' unwillingness to relinquish their position and power also affects this process (Caputo et al., 2019).

On the other hand, there are successful successions when the continuity of the firm, the harmony within the family, and higher levels of performance are assured (Urban and Nonkwelo, 2020, Bozer et al., 2017). Successful successions are eased by previous good interpersonal relationships between incumbents and successors, the latter's ability to learn the transferred knowledge, their commitment to the business (Royer et al., 2008, Bozer et al., 2017), and the existence of family protocols (Nave et al., 2022).

Note that gender has a significant impact on family succession since males prevail over females (Meroño-Cerdán, 2022, Jimenez, 2009, Bağış et al., 2022, Wang, 2010, Vera and Dean, 2005, Urban and Nonkwelo, 2020, Ip and Jacobs, 2006, Franco et al., 2023). This is connected to the primogeniture rule (Vera and Dean, 2005, Haberman and Danes, 2007, Franco et al., 2023), wherein the first-born male child is chosen to succeed. In companies where this does not apply, many founders opt to sell the business or designate a non-family CEO instead of choosing their daughters (Maseda et al., 2021, Aldamiz-Echevarría et al., 2017, Vera and Dean, 2005). Daughters typically succeed in unplanned and

rushed successions (Meroño-Cerdán, 2022), although their position is constantly threatened by a male family member (e.g.: sons-in-law) or a male employee (Wang, 2010).

However, evidence suggests primogeniture is becoming less important as succession is based less on personal and emotional principles and more on successors' qualifications and technological and managerial know-how (Brockhaus, 2004, Maseda et al., 2021). In fact, authors state that education and work experience are critical criteria to take on business management (Venter et al., 2005, Brockhaus, 2004). To improve their experience and competencies, successors should either work in other enterprises or perform functions than management in their family firms (Brockhaus, 2004).

*Daughters' role and involvement in the business*

Daughters tend to be underestimated when it comes to succeeding or carrying out top management functions in the firm, which derives from a role conflict they face – family vs business (Jimenez, 2009, Marín-Palacios, 2023).

On the one hand, daughters must play the traditional roles of caring for and helping the family, ensuring harmony and peace (Jimenez, 2009, KPMG, 2021, Marín-Palacios, 2023, Franco et al., 2023, Gashi Nulleshi and Kalonaityte, 2023). On the other hand, daughters have the know-how and skills needed for the business, but do not know if they should question their father's business decisions and give different inputs or simply behave as good and compliant daughters (Smythe and Sardeshmukh, 2013, Wang, 2010).This variety of roles can commit their opportunity to succeed (Bozer et al., 2017), since they prefer rather not to demonstrate their abilities than to be considered disrespectful or fail to their family duties (Wang, 2010, Mussolino et al., 2019). Many of them even exclude working in their family company and managing to avoid these conflicts (Wang, 2010, Aldamiz-Echevarría et al., 2017).

In fact, daughters do not acknowledge their possibility of ascending to leadership since they are not integrated into the business as young as their brothers are (Wang, 2010, Smythe and Sardeshmukh, 2013, McAdam et al., 2021, Franco et al., 2023). It relates to an absence of parental support that constrains daughters from obtaining important knowledge, skills, and experience, making them think they are unsuitable for succession (Urban and Nonkwelo, 2020).

Note that this lack of support can be explained either by a father's attempt to protect their daughters from the risks of businesses, keeping them away and treating them as the "daddy's little girl" (Urban and Nonkwelo, 2020, Vera and Dean, 2005, Wang, 2010, Aldamiz-Echevarría et al., 2017, Bağış et al., 2022, McAdam et al., 2021, Franco et al., 2023) or by gender issues. Indeed, daughters are perceived as less capable of performing high-level tasks (Vera and Dean, 2005, Aldamiz-Echevarría et al., 2017) than men, being designated to them mainly administrative or secretarial functions (Wang, 2010, Marín-Palacios, 2023).

Consequently, daughters face the invisibility problem (Urban and Nonkwelo, 2020, Vera and Dean, 2005, Campopiano et al., 2017, Gashi Nulleshi and Kalonaityte, 2023, Franco et al., 2023, Marín-Palacios, 2023). Not only family members but also other stakeholders question daughters' credibility and doubt their abilities (Vera and Dean, 2005, Jimenez, 2009, Aldamiz-Echevarría et al., 2017, Gherardi and Perrotta, 2016). This forces daughters to strive hard to prove their worth and be accepted (Jimenez, 2009, Akhmedova et al., 2020, McAdam et al., 2021).

Besides, daughters choose to work in the family firm for several reasons, namely to help the family, to improve the business performance (Aldamiz-Echevarría et al., 2017), to occupy an unwanted job, and to have more flexibility, satisfaction (Vera and Dean, 2005, Jimenez, 2009) and security (Wang, 2010, Jimenez, 2009). Additionally, they want to perpetuate the family name and tradition (Akhmedova et al., 2020, Aldamiz-Echevarría et al., 2017). Furthermore, a family company can facilitate the entry into other sectors (Wang, 2010, Jimenez, 2009) and help daughters to improve their expertise and knowledge (Wang, 2010, Aldamiz-Echevarría et al., 2017). However, some disadvantages are pointed out by Vera and Dean (2005), particularly, the lack of personal life, a non-separation of family and firm environment, and the criticism for their leadership style based on the incumbent's management. Despite all the forementioned considerations, evidence suggests that having a female leader running the family firm helps to improve its performance (Urban and Nonkwelo, 2020, Bağış et al., 2022, KPMG, 2021), being these businesses more productive than the male-owned ones (Vera and Dean, 2005). Moreover, daughters have more success in attaining the firm financial and socioemotional objectives (Marín-Palacios, 2023) as well as in perpetuating the family's name and its values, and enhancing commitment between employees and family members (Bağış et al., 2022).

*Daughters' leadership*

Women are considered transformational leaders, which means they are cooperative and work for the good of the organisation and the team (Vera and Dean, 2005, Aldamiz-Echevarría et al., 2017, KPMG, 2021).

In fact, daughters have a more communicative, interactive, and transparent leadership style (Haberman and Danes, 2007), since they are amenable to sharing information and integrating employees (Brockhaus, 2004). Moreover, they are perceived as flexible, loyal, thoughtful, kind, and careful (Vera and Dean, 2005, Aldamiz-Echevarría et al., 2017), as well as more concerned with the emotional and relational side of the business (Jimenez, 2009, Aldamiz-Echevarría et al., 2017). As a result, daughters' succession tends to be more collaborative (KPMG, 2021) rather than disharmonious, clashing (Wang, 2010) or competitive (Smythe and Sardeshmukh, 2013, Jimenez, 2009) as they prefer to work with their fathers rather than substitute them (Wang, 2010) or achieve career goals (Urban and

Nonkwelo, 2020). Conflicts happen only when daughters compete against a third person, the mother or an important non-family member (Jimenez, 2009, Wang, 2010).

On the contrary, sons have a more dictatory, instrumental and hierarchical style (Haberman and Danes, 2007). Additionally, the relationship between fathers and sons usually is conflicting as sons want to tower above their fathers and attain more power and control (Smythe and Sardeshmukh, 2013, Urban and Nonkwelo, 2020, Vera and Dean, 2005). Because sons attempt to exceed their fathers, the firm's performance can be neglected due to imprudent decisions and precipitated changes (Vera and Dean, 2005).

*Daughters' succession*

Although family companies offer daughters more opportunities to lead and pursue an entrepreneurial career path (Maseda et al., 2021, Meroño-Cerdán, 2022, Marín-Palacios, 2023), evidence suggests a scarcity of daughters among successors (Overbeke et al., 2013).

It can be explained, firstly, by rivalries within the business (Vera and Dean, 2005, Campopiano et al., 2017). Sibling rivalry is linked to tensions among brothers and sisters and occurs when inequalities and privileges are noticed between them (Vera and Dean, 2005). Non-family disagreements happen when non-family employees perceive themselves as the "right-hand" of the founder, which makes them feel threatened by the daughters' possibility of succeeding. Finally, mother-and-daughter conflicts derive from comparisons between daughters' and mothers' leadership styles by employees, so daughters do not feel the business belongs to them (Vera and Dean, 2005). Besides, mothers feel threatened by the fathers' and daughters' approximation, which can interfere with their own relationship (Campopiano et al., 2017). Therefore, mothers tend to consider the succession of their daughters undesirable, preferring they work in other companies (Wang, 2010).

Additionally, gender issues related to daughters' traditional roles influence their succession (Wang, 2010, Ferrari, 2021, Franco et al., 2023). The idea that men have innate features, which make them more suitable for running a business, results in daughters' self-exclusion (Overbeke et al., 2015, Meroño-Cerdán, 2022). It also increases the likelihood of daughters' capacities remaining invisible and underutilised (Wang, 2010). Note that these are more prominent in male-oriented sectors, where characteristics perceived as feminine are incompatible and rejected (Constantinidis and Cornet, 2008, Constantinidis and Nelson, 2010). Along with the abovementioned, contradictory messages about whether daughters should behave as a mom or as an entrepreneurial woman, namely from their fathers, enhance their self-exclusion (Vera and Dean, 2005, Marín-Palacios, 2023).

Equally important is the father's indisposition to abdicate his position and control, which not only reduces the opportunities for daughters to lead but also hinders them from managing independently since they have the father's shadow always behind them (McAdam et al., 2021).

On the other hand, daughters' succession can be eased by their characteristics such as being organised (Campopiano et al., 2017), caring, nurture and collaborative with their fathers (Smythe and Sardeshmukh, 2013, Vera and Dean, 2005). Having a heavy desire to perpetuate and run the family business and being aware of their own skills and knowledge increase daughters' possibilities of being selected (Akhmedova et al., 2020). Besides, the level and field of education, previous work experience, and a strong leadership style facilitate their succession (Campopiano et al., 2017), along with sharing a vision (McAdam et al., 2021, Wang, 2010, Almlöf and Sjögren, 2021, Overbeke et al., 2015), goals, and interests with their fathers (Overbeke et al., 2015, Maseda et al., 2021). Parental support, guidance (Overbeke et al., 2013, Maseda et al., 2021), and endorsement (McAdam et al., 2021) are also relevant. Furthermore, daughters are usually considered for succession when a critical and unexpected event occurs (Overbeke et al., 2013, McAdam et al., 2021, Wang, 2010, Aldamiz-Echevarría et al., 2017, Humphreys, 2013, Haberman and Danes, 2007, Marín-Palacios, 2023). It happens when there are no male heirs, the succession is not planned, the organisation's performance is in decline or the business is financially at risk (Wang, 2010, Meroño-Cerdán, 2022). In addition, daughters are chosen when they are the only of the children concerned about the business, their father passes away or gets sick abruptly (Wang, 2010, Meroño-Cerdán, 2022) or when there is a bad family orientation (Meroño-Cerdán, 2022). In fact, many daughters do not ponder succession until one of these events happens (Meroño-Cerdán, 2022).

In these cases, daughters' succession depends on the context and is based on emergency and not on their suitability. This choice can be explained by the fact that companies value more feminine characteristics, such as emotional sensitivity or relational leadership style, when facing difficult situations (Meroño-Cerdán, 2022). Many times, daughters do not have the option to refuse the position and lead only until the critical event is overcome, subsequently replaced by another successor (Wang, 2010, Meroño-Cerdán, 2022). This results in a waste of useful resources and contribute to diminishing daughters' willingness to join their family business, if they go through bad experiences (Meroño-Cerdán, 2022).

All the above considered, daughters becoming successors involves a transition. Daughters must gain visibility by constructing their own entrepreneurial identity and separating themselves from the idea of being "daddy's little girl". They should be confident, take part in firm decisions, and create a vision of the business, which must resemble their father's (Wang, 2010).

A conceptual framework was developed to summarise the factors facilitating daughters' succession and the barriers restricting it (see Figure 2).

## IMPLICATIONS

This investigation proves to be relevant when contextualising daughters' succession in family businesses and presenting its major obstacles and enhancers.

One of the main remarks that can be drawn from this study is that gender exerts a great influence in the succession process and involvement of daughters in family firms (Meroño-Cerdán, 2022, Urban and Nonkwelo, 2020, Marín-Palacios, 2023, Franco et al., 2023, Ferrari, 2021). Indeed, most of the obstacles are based on gendered assumptions that favour the rise of sons to greater positions and make the daughters' existence invisible. The idea about men having innate managerial characteristics (Meroño-Cerdán, 2022) results on prejudices against women's capacities and leadership style that leads them to play secondary roles (Marín-Palacios, 2023, Gashi Nulleshi and Kalonaityte, 2023). Besides, family obligations that seem to be required only of women constrains their ascendancy to entrepreneur positions and forces them to leave functions of greater responsibility for men (Marín-Palacios, 2023).

Additionally, family appears to constrain their succession (Marín-Palacios, 2023)with rivalries arising between family members and predecessors not wanting to relinquish their position and power (Campopiano et al., 2017, McAdam et al., 2021) which can difficult their succession or even push them away.

Even though the obstacles may be quite significant, there are some contexts that are more prone to enhance daughters' succession than others. It is the case of the existence of predecessor's endorsement, support, and guidance (McAdam et al., 2021, Maseda et al., 2021), or of a critical or sudden event (Meroño-Cerdán, 2022, Marín-Palacios, 2023) as the mentioned above. Moreover, daughters work on developing some features valued by predecessors and improving their academic and professional experience can also help them to ascend.

Therefore, this study contributes to the literature and management, filling a gap in the subject of daughters' succession in family businesses and raising awareness about the problematic of underutilisation of women that affects their ascendancy. Indeed, it problematises the several barriers daughters must overcome to succeed, showing that gender is the most significant one and enabling to conclude that sons seem to be considered the natural successors and those naturally responsible for performing top management functions.

## CONCLUSION

Throughout the literature review, succession in family firms was studied, along with how this is reflected in the role daughters play in the company.

Succession can occur in two different ways: the business is passed on to a family member or the management is assigned to an external person (García-Álvarez et al., 2002). Despite this, the vast majority prefer family succession to preserve the values, conserve the family legacy, and take advantage of the benefits of this type of firm (Lambrecht, 2005). Even so, for a successful succession, it is necessary to verify a good relationship between the parties involved and a predisposition of the successor to learn and commit himself to the business (Bozer et al., 2017; Royer et al., 2008).

Note that gender impacts predominantly female succession (Bağış et al., 2022; Jimenez, 2009), since literature highlights a prevalence of male successors compared to female ones (Vera & Dean, 2005; Wang, 2010). Indeed, incumbents prefer to choose sons, male members, externals or even sell the firm to select daughters (Maseda et al., 2021; Vera & Dean, 2005).

Despite the dearth of daughters among successors, several authors argue that female management benefits the business's performance, productivity, and growth (Bağış et al., 2022; Mussolino et al., 2019; Urban & Nonkwelo, 2020). Nonetheless, their role turns out to be invisible since daughters play secondary and supportive functions (Wang, 2010).

Consequently, a suggestion for future research is apply the conceptual framework to real cases to analyse the similarities and the differences between the theory and the reality. Examine daughters' succession in the different sectors and establishing comparisons between them would also be an interesting research point.

## ACKNOWLEDGEMENTS

## REFERENCES

ACHTENHAGEN, L., HAAG, K., HULTÉN, K. & LUNDGREN, J. 2022. Torn between individual aspirations and the family legacy – individual career development in family firms. Career Development International, 27, 201-221.
AKHMEDOVA, A., CAVALLOTTI, R., MARIMON, F. & CAMPOPIANO, G. 2020. Daughters' careers in family business: Motivation types and family-specific barriers. Journal of Family Business Strategy, 11.
ALDAMIZ-ECHEVARRÍA, C., IDÍGORAS, I. & VICENTE-MOLINA, M.-A. 2017. Gender issues related to choosing the successor in the family business. European Journal of Family Business, 7, 54-64.
ALMLÖF, H. & SJÖGREN, H. 2021. Owner-manager when death do us part – roles of a widow in sudden succession in family firms. Journal of Family Business Management.
ASTRACHAN, J. H., KLEIN, S. B. & SMYRNIOS, K. X. 2002. The F-PEC Scale of Family Influence: A Proposal for Solving the Family Business Definition Problem. Family Business Review, 15, 45-58.
AVLONITI, A., IATRIDOU, A., KALOUPSIS, I. & VOZIKIS, G. S. 2013. Sibling rivalry: implications for the family business succession process. International Entrepreneurship and Management Journal, 10, 661-678.
BAĞIŞ, M., KRYEZIU, L., KURUTKAN, M. N. & RAMADANI, V. 2022. Women entrepreneurship in family business: dominant topics and future research trends. Journal of Family Business Management.
BOZER, G., LEVIN, L. & SANTORA, J. C. 2017. Succession in family business: multi-source perspectives. Journal of Small Business and Enterprise Development, 24, 753-774.

BROCKHAUS, R. H. 2004. Family Business Succession: Suggestions for Future Research. Family Business Review, 17, 165-177.

CAMPOPIANO, G., DE MASSIS, A., RINALDI, F. R. & SCIASCIA, S. 2017. Women's involvement in family firms: Progress and challenges for future research. Journal of Family Business Strategy, 8, 200-212.

CAPUTO, A., PELLEGRINI, M. M., VALENZA, G. & ZARONE, V. 2019. Conflicts and Negotiations in the Intergenerational Succession of Family Firms: A Literature Review. The Anatomy of Entrepreneurial Decisions.

CHUA, J. H., CHRISMAN, J. J. & SHARMA, P. 1999. Defining the Family Business by Behavior. Entrepreneurship Theory and Practice, 23, 19-39.

CHUA, J. H., CHRISMAN, J. J. & SHARMA, P. 2003. Succession and Nonsuccession Concerns of Family Firms and Agency Relationship with Nonfamily Managers. Family Business Review, 16, 89-107.

CONSTANTINIDIS, C. & CORNET, A. Daughters taking over the family business: A gender analysis.  31st ISBE Conference on International Entrepreneurship: Promoting Excellence in Education, Research and Practic, 2008 Belfast, Northern Ireland.

CONSTANTINIDIS, C. & NELSON, T. 2010. Integrating Succession and Gender Issues from the Perspective of the Daughter of Family Enterprise: A Cross-National Investigation. Management international, 14, 43-54.

DASPIT, J. J., CHRISMAN, J. J., ASHTON, T. & EVANGELOPOULOS, N. 2021. Family Firm Heterogeneity: A Definition, Common Themes, Scholarly Progress, and Directions Forward. Family Business Review, 34, 296-322.

FERRARI, F. 2021. Thepostponed succession:an investigation of the obstacles hindering business transmission planning in family firms. Journal of Family Business Management.

FRANCO, M., NAGILLA, M. & RODRIGUES, M. 2023. The presence of women in family SMEs' succession process: a conceptual framework guided by gender perspective. Journal of Family Business Management, ahead-of-print.

GARCÍA-ÁLVAREZ, E., LÓPEZ-SINTAS, J. & SALDAÑA GONZALVO, P. 2002. Socialization Patterns of Successors in First- to Second-Generation Family Businesses. Family Business Review, 15, 189-203.

GASHI NULLESHI, S. & KALONAITYTE, V. 2023. Gender roles or gendered goals? Women's return to rural family business. International Journal of Gender and Entrepreneurship, 15, 44-63.

GERSICK, K., J. A. DAVIS, M. M. HAMPTON, AND I. LANSBERG. 1997. Generation to Generation: Life Cycles of the Family Business, Boston, Harvard Business School Press.

GERSICK, K. E., LANSBERG, I., DESJARDINS, M. & DUNN, B. 1999. Stages and transitions: Managing change in the family business. Family Business Review, 12, 287-297.

GHERARDI, S. & PERROTTA, M. 2016. Daughters taking over the family business Their justification work within a dual regime of engagement. International Journal of Gender and Entrepreneurship, 8, 28-47.

HABERMAN, H. & DANES, S. M. 2007. Father-Daughter and Father-Son Family Business Management Transfer Comparison: Family FIRO Model Application. Family Business Review, 20, 163-184.

HOWORTH, C., ROSE, M., HAMILTON, E. & WESTHEAD, P. 2010. Family firm diversity and development: An introduction. International Small Business Journal-Researching Entrepreneurship, 28, 437-451.

HUMPHREYS, M. M. C. 2013. Daughter succession&colon; a predominance of human issues. Journal of Family Business Management, 3, 24-44.

IBRAHIM, A. B., SOUFANI, K. & LAM, J. 2001. A Study of Succession in a Family Firm. Family Business Review, 14, 245-258.

IP, B. & JACOBS, G. 2006. Business succession planning: a review of the evidence. Journal of Small Business and Enterprise Development, 13, 326-350.

JIMENEZ, R. M. 2009. Research on Women in Family Firms Current Status and Future Directions. Family Business Review, 22, 53-64.

KPMG. 2021. Empowering the future of family business [Online]. Available: https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2021/06/empowering-the-future-of-family-business.pdf [Accessed].

LAMBRECHT, J. 2005. Multigenerational Transition in Family Businesses: A New Explanatory Model. Family Business Review, 18, 267-282.

LE BRETON-MILLER, I., MILLER, D. & LESTER, R. H. 2011. Stewardship or Agency? A Social Embeddedness Reconciliation of Conduct and Performance in Public Family Businesses. Organization Science, 22, 704-721.

MARÍN-PALACIOS, C. 2023. Female entrepreneurship in family business: bibliographic analysis. Journal of Family Business Management, ahead-of-print.

MASEDA, A., ITURRALDE, T., APARICIO, G. & COOPER, S. Y. 2023. Building bridges between gender and family business literature to advance women's empowerment. Gender in Management: An International Journal, ahead-of-print.

MASEDA, A., ITURRALDE, T., COOPER, S. & APARICIO, G. 2021. Mapping women's involvement in family firms: A review based on bibliographic coupling analysis. International Journal of Management Reviews, 24, 279-305.

MCADAM, M., BROPHY, M. & HARRISON, R. T. 2021. Anointed or appointed? Father–daughter succession within the family business. International Small Business Journal: Researching Entrepreneurship, 39, 576-600.

MEROÑO-CERDÁN, A. L. 2022. Unexpected Successor in Family Firms: Opportunity or Trap for Women? Journal of Family and Economic Issues.

MILLER, D., STEIER, L. & LE BRETON-MILLER, I. 2003. Lost in time: intergenerational succession, change, and failure in family business. Journal of Business Venturing, 18, 513-531.

MOORES, K. 2009. Paradigms and Theory Building in the Domain of Business Families. Family Business Review, 22, 167-180.

MORRIS, M. H., WILLIAMS, R. O., ALLEN, J. A. & AVILA, R. A. 1997. Correlates of success in family business transitions. Journal of Business Venturing, 12, 385-401.

MUSSOLINO, D., CICELLIN, M., PEZZILLO IACONO, M., CONSIGLIO, S. & MARTINEZ, M. 2019. Daughters' self-positioning in family business succession: A narrative inquiry. Journal of Family Business Strategy, 10, 72-86.

NAVE, E., FERREIRA, J. J., FERNANDES, C. I., PAÇO, A. D., ALVES, H. & RAPOSO, M. 2022. A review of succession strategies in family business: content analysis and future research directions. Journal of Management & Organization, 1-25.

OVERBEKE, K. K., BILIMORIA, D. & PERELLI, S. 2013. The dearth of daughter successors in family businesses: Gendered norms, blindness to possibility, and invisibility. Journal of Family Business Strategy, 4, 201-212.

OVERBEKE, K. K., BILIMORIA, D. & SOMERS, T. 2015. Shared vision between fathers and daughters in family businesses: the determining factor that transforms daughters into successors. Front Psychol, 6, 625.

PIMENTEL, D. 2022. Empresas familiares: o que as distingue? [Online]. Available: https://visao.sapo.pt/opiniao/organizacoes-e-pessoas/2022-03-03-empresas-familiares-o-que-as-distingue/ [Accessed 19.10.2022].

POUNDER, P. 2015. Family business insights: an overview of the literature. Journal of Family Business Management, 5, 116-127.

ROYER, S., SIMONS, R., BOYD, B. & RAFFERTY, A. 2008. Promoting Family: A Contingency Model of Family Business Succession. Family Business Review, 21.

SHARMA, P. 2004. An Overview of the Field of Family Business Studies: Current Status and Directions for the Future. Family Business Review, 17, 1-36.

SMYTHE, J. & SARDESHMUKH, S. R. 2013. Fathers and daughters in family business. Small Enterprise Research, 20, 98-109.

STASA, M. & MACHEK, O. 2022. Social Capital in the Family Business Literature: A Systematic Review and Future Research Agenda. Family Business Review.

STEIER, L. 2001. Next-Generation Entrepreneurs and Succession: An Exploratory Study of Modes and Means of Managing Social Capital. Family Business Review, 14, 259-276.

URBAN, B. & NONKWELO, R. P. 2020. Intra-family dynamics and succession planning in family businesses in South Africa: the daughter as a potential successor. Journal of Family Business Management, 12, 266-279.

VENTER, E., BOSHOFF, C. & MAAS, G. 2005. The influence of successor-related factors on the succession process in small and medium-sized family businesses. Family Business Review, 18, 283-303.

VERA, C. F. & DEAN, M. A. 2005. An Examination of the Challenges Daughters Face in Family Business Succession. FAMILY BUSINESS REVIEW, XVIII.

WANG, C. 2010. Daughter Exclusion in Family Business Succession: A Review of the Literature. Journal of Family and Economic Issues, 31, 475-484.

ZACHARY, R. K. 2011. The importance of the family system in family business. Journal of Family Business Management, 1, 26-36.

# A BIBLIOMETRIC ANALYSIS OF EMERGING TECHNOLOGIES IN MANAGEMENT STUDIES

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## ABSTRACT

The literature has always extensively analysed new technologies. However, to the best of our knowledge, there are not systematic literature reviews trying to study the effect of new technologies on management and strategy and the existence of theories promoted by them. This is the purpose of this research. We performed a bibliometric analysis. Starting from the new technologies individuated by Bonaccorsi et al. (2020), we built a database of 1640 documents from ABS journals, while citations were 114.155. We then restricted our research only to top journals of management and strategy, focusing on 326 papers. From the analysis emerged that recent and current studies are adapting the traditional theories to analyse new technologies in management. The most recent theories used by scholars to study new technologies date back to the first decade of this century, while the most ancient ones are from the 80's. Nevertheless, radical and disruptive changes happened from the technological perspective in the last decades. Thus, this analysis underlines the need for new conceptual tools that should be useful to fully understand the potentialities and therefore they should be able to explain the impact of new technologies on management.

*Keywords: New Technologies, Management Theory, Innovation, Bibliometric Analysis, Emerging Technologies, Review.*

## INTRODUCTION

The introduction of new technologies and, above all, the changes in the technological paradigm have always prompted management scholars to question themselves about the changes that these phenomena produce on the way and of doing business (especially in terms of effectiveness and efficiency: the possibility of new processes, improvements performances, etc.). Nevertheless, scholars have more rarely question themselves about the possibility that some emerging technologies could have changed the same conceptual schemes and theories that explain the way of doing business. For these reasons, in the wake of the importance of the fourth industrial revolution and the digitalization processes that companies are going through, this work questions which new managerial theories have been pushed and promoted by the emergence of new technologies.

Given the importance that technologies assume in the society and, more specifically, in business, we believe it is appealing to examine the studies in management concerning new technologies. The purpose of this research is twofold: to record the development of the works related to new technologies and to investigate the theoretical branches that they contribute to create.

The debate about new technologies in all areas of business management (management, marketing, accounting, finance) has been present for many years, concerning many aspects and taking place in different ways. Already 20 years ago, Patterson et al. (2003) says that technology changes almost every day and its applications in business as well, the companies need to adopt these new technologies in many areas of the business to avoid the loss of competitive advantage.

This debate has had a dividing line with the advent of Industry 4.0 (Optimal, 2020): a paradigm that, in fact, uses technologies that existed previously.

With the advent of Industry 4.0, studies regarding new technologies in management have multiplied. One of the most important article about the topic says that, after the creation of IoT, governments and companies will launch an evolutionary journey (Shrouf et al., 2014). It predicts that industrial production of the new era will be highly flexible, and it consists in extensive integration between customers, companies, and suppliers, and above all sustainable.

However, all this debate always focused on the use and impact of new technologies in companies. For example, Flavian et al. (2019) analysed the impact on the customer experience; Guo and Liang (2016) analysed the impact in the banking industry and Zhu et al. (2012) analysed the managerial application in different industries. New technologies and paradigms are not only changing how companies are managed and their strategies, but also relations and collaborations between them (Messeni Petruzzelli et al., 2021). Furthermore, firms' relations and technologies adoption and related effect also influences industrial districts (Fiorini et al., 2022). There are many studies about the application of this technology (Li et al., 2020), but is not clear how these technologies created new management theories. Alfano et al. (2020) said that several readiness and maturity models have been proposed in recent years, but an accurate analysis and classification of these models are not yet available. Furthermore, Klingenberg et al. (2021) said that value-creating technologies, which apply data in order to develop new solutions, are still rare in the literature.

## METHODOLOGY

As for many studies with similar purposes, we decided to use the bibliometric analysis (e.g. Casprini et al., 2020). We are interested in analysing the communities of scholars and the theory that comes out

from research on the shared references of the documents. We used the bibliographic coupling analysis and performed it throughout VOSviewer 1.6.19 software (Van Eck and Waltman, 2010).

SCOPUS has been chosen as the database, while keywords derived from the study conducted by Bonaccorsi et al. (2020): we decided to take this article because the authors made a deep analysis of words related to new technologies. In order to incorporate the new technologies as much as possible, we decided to take all the words they have found, so we chose the words in the Table A1 (Coverage of emerging technologies by Wikipedia pages. Part 1: Academic papers (all year) and in the Table A2 (Coverage of emerging technologies by Wikipedia pages. Consultancy reports and official documents. Year 2018–2019). We included contributions from 2003 to 2002. In this way, we were sure that we covered the fourth industrial revolution whose birth is traced back to 2011 (Kagermann, 2015). We have considered 8 more years because some technologies were already being used. It can also be seen from the timeline graph below: we have had the shot since 2011, but before that something was already there. At first, we limited our analysis to the top journals (4 and 4*) identified by the Academic Journal Guide-ABS. We obtained a total of 5,778 documents, with 431.408 total citations. We then restricted the analysis to ABS journals. The number of documents obtained after this restriction was 1640, while citations were 114,155. We then decided to focus our research on top journals of management and strategy, hence obtaining 326 documents.


## RESULTS

The top journals identified are: Academy of Management Annals, Academy of Management Journal, Academy of Management Review, Journal of Management, Journal of Management Studies       , Strategic Management Journal. Some of them published a relevant number or paper, also representing a significant share of the total citations from those journals about those topics. Particularly: Strategic Management Journal (144 papers, representing 43,5% of the share and receiving 16785 citations, almost half of the total citations of this sample); Academy of Management Journal (64 papers, receiving more than 20% of the total citations).

We also investigated from where those researches originate. UK and USA showed the highest contributions, as it can be seen in Figure 1.
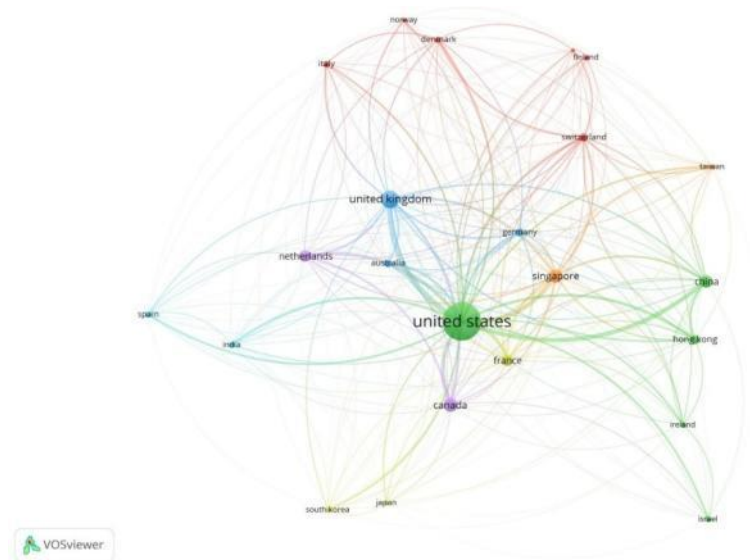
Figure 1: Authors' country of provenance  (Source: Authors' elaboration).

We then analysed the recurring keywords, and, amongst the most cited ones, we can signal those having at least 9 occurrences: innovation, knowledge sharing, entrepreneurship, machine learning, resource-based view, and sharing economy. It is interesting to notice that amongst them only one technology is listed. We then built keywords co-occurrence and period of appearance graph, that is reported in Figure 2.
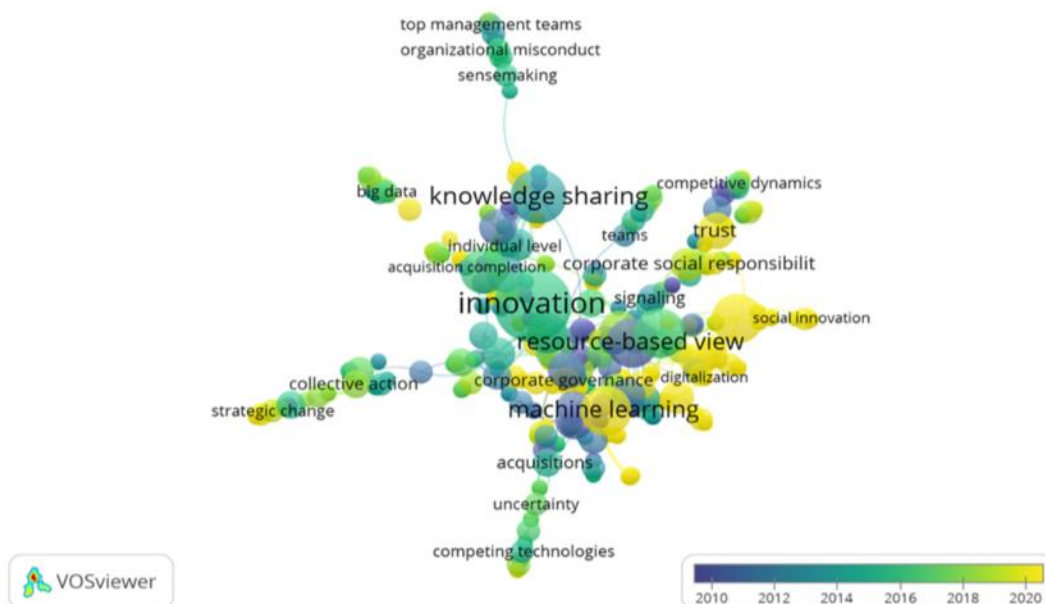


Figure 2: Keywords co-occurrence (Source: Authors' elaboration).

Finally, we performed the bibliographic coupling analysis. This helped us in clustering documents in thematic groups that emphasise the existence of a management theory link with new technologies. 5 clusters were identified and reported in Table 1. Bibliographic coupling is reported in Figure 3.

| Cluster | time | N° | Main articles | main topics |
|---|---|---|---|---|
| 1 Red "Strategic management" | 2003 – 2022 | 98 | - Raisch and Krakowski (2021) Hanningan et al (2019) Gregory et al (2021) | Adaptation of strategic management tools for new technologies |
| 2 Green "Knowledge management" | 2004 – 2022 | 68 | Krakowski et al (2022) Roy and Sakar (2014) Maslach (2016) | Relationship between knowledge and innovation |
| 3 Blue "Corporate governance" | 2003 - 2022 | 61 | Choudhury et al (2019) Momtaz (2020) Pahnke et al (2014) | Use of various new technologies in diverse areas of corporate governance |
| 4 Yellow "Sharing economy and new platforms" | 2003 - 2022 | 55 | Garud et al (2022) Khanaha et al (2022) Chang and Sokol (2022) | Introduction and development of the sharing economy; management of and strategies for the new platforms |
| 5 Purple "Information sharing" | 2003 - 2022 | 44 | Afuah and Tucci (2012) Piezunka and Dahlander (2014) Wu (2007) | How Information sharing and Crowdsourcing can impact management and managerial strategies |

Table 1: *Bibliographic coupling clusters*  (Source: Authors' elaboration)
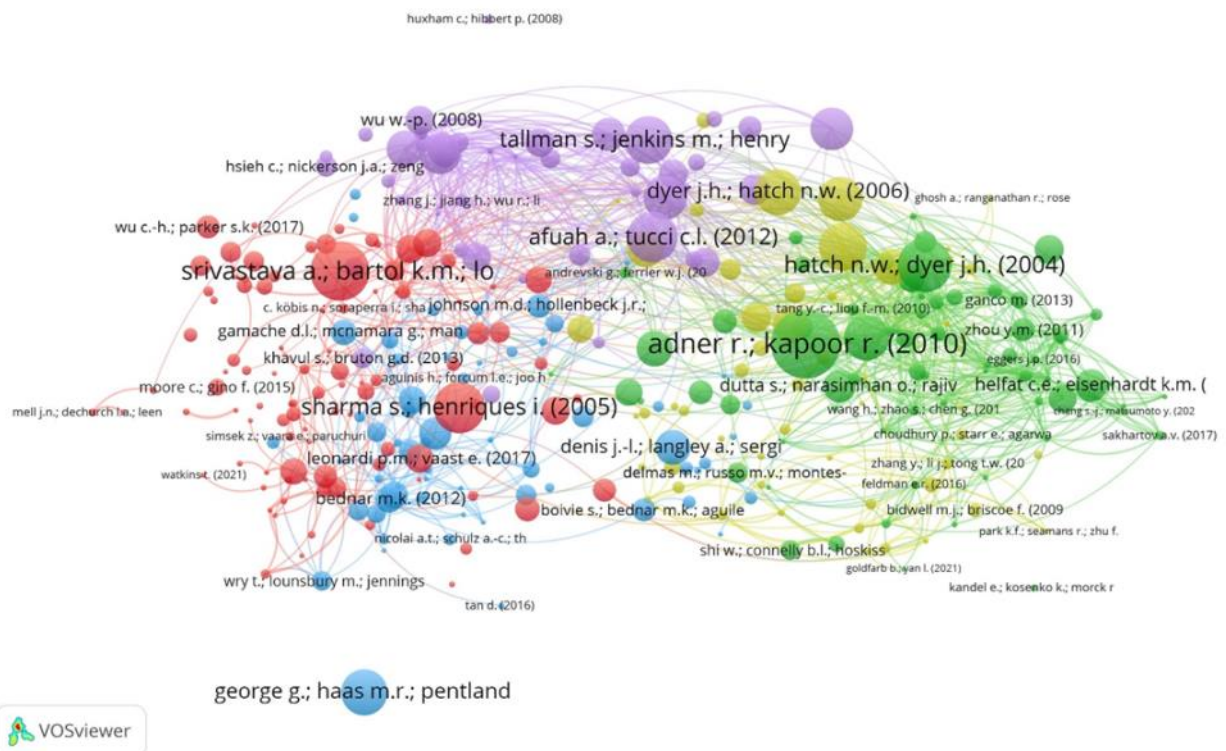


Figure 3: Bibliographic coupling (Source: Authors' elaboration).

From the bibliometric analysis we can identify three main results.

Clusters 1 and 4 are about Strategic management and business models, since they deal with: New business models adapted to new technologies employment, Sharing economy, and New platforms. Cluster 2 and 5 are about Knowledge management, dealing with Managerial approaches to exploit: Information sharing, Crowdsourcing, and Innovation-knowledge relationship. Cluster 3 is about Corporate governance: governance models and the usage of new technologies.

## CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

From this analysis emerges that scholars are mostly referring and adapting the traditional strategic-managerial theoretical lenses for analysing new technologies in management. In all the clusters the topic studied are not discussed through new proposed theories, instead authors refer to (adapted) traditional theories. We can identify, amongst others, theories from the 1980s: the Resource-Based View Wernerfelt (1984), the theory about competitive strategies (Porter, 1985). Moreover, there are theories deriving from mid-1990s and the beginning of 2000, such as the Knowledge-based theory (Grant, 1996) and the Corporate Social Responsibility and Sustainability (here we can identify even "older" theories, as Bowen, 1953, together with more recent ones: McWilliams and Siegel, 2001). Furthermore, there is a significant number of papers dealing with strategic management and business models. Even if we could expect new theories regarding strategic management and business models deriving from the adoption of new technologies, scholars are still using "old" theories, with some adaptations, to explain and study how those technologies affect firms and strategic management. Thus, we can identify that scholars still adapt theories that, maximum, were published in the first decade of this century (Chesbrough and Rosenbloom, 2002; Osterwalder et al., 2005; Zott and Amit, 2007; Baden-Fuller and Morgan, 2010). However, even if since the second decade of the XXIst century, disrupting technologies and paradigm have been emerged (e.g. Industry 4.0 and related technologies, Kagermannet al., 2013), scholars have not proposed yet new theories to capitalize on them from a managerial and strategical perspective. There is a need for new conceptual tools. Raisch and Krakowski (2021) pointed out that, with new technologies (Artificial intelligence, specifically for their research) a substantial change is required in how new technologies are currently conducted in order to develop meaningful theory and to provide practice with sound advice: "we also argue that a substantial change is required in how AI research is currently conducted in order to develop meaningful theory and to provide practice with sound advice" (Raisch and Krakowski, 2021, p.192 ).

Therefore, scholars are still using old theories for studying new technologies, while it would be needed new theories that can fully explain to both scholars and practitioner the impact on management. The need of new theories is also mentioned in older studies (i.e. Pahnke et al., 2014).

To propose some examples deriving from the topic emerged from the clusters, we can analyse the case of new technologies that empowered the possibility to share information and knowledge. They also enabled the employment of distant and external knowledge that could be beneficial for the company if appropriately managed. Therefore, management scholars investigated if and how crowdsourcing and innovation sharing should be effectively managed. However, this has been done referring to "old" theories while new ones should have been proposed.

The choice of selecting leading and renewed journals in the management and strategy fields has been done because we expected that new theories would have been proposed in these top journals. It could happen that new theories emerged in other fields, but we await to find the management theories in the analysed ones.

Since we expect new and disruptive technologies and paradigms to strongly affect management and strategies, but it does not emerge from the analysis of academic documents any significant new theory, this study points out the need for new theories emerged from the rise of new technologies. New theories not only would be effective for scholars, but they would also provide fruitful insights for managers. Practitioners would benefit from learning new theories because they would help them in capitalizing on the adoption of new technologies. Adopting new technologies with an "old" approach might diminish their effect.

This research has some limitations. The first is the selection of only the most important journals about management. Future developments of the work should also take into consideration more journals. Widening the number of contributions under analysis could also decrease the heterogeneity of smaller clusters where the sharing of some references can derive from individual articles with very different focuses. For the same reason, the second limitation is related to the choice of scientific fields of investigation. This does not exclude that there may be interesting and useful works for the purpose of this study also within different disciplines (e.g. marketing). A final limitation refers to the analysis of the results. Although the use of bibliometric methods helps to reduce subjectivity, this does not exclude the possibility that the analysis of the main topics covered is limited by interpretative distortions.

## REFERENCES

Afuah, A., and Tucci, C. L. (2012). Crowdsourcing as a solution to distant search. Academy of Management Review, 37(3), 355-375.
Alfano, M., Di Pasquale, V., Iannone, R., Miranda, S., and Riemma, S. (2020). Assessment and implementation of industry 4.0 paradigm: research topics and trends. In Proceedings of the Summer School Francesco Turco (pp. 1-7). AIDI-Italian Association of Industrial Operations Professors.
Baden-Fuller, C., and Morgan, M. S. (2010). Business Models as Models. Long Range Planning, 43(2-3), 156–171.

Bonaccorsi, A., Chiarello, F., Fantoni, G., and Kammering, H. (2020). Emerging technologies and industrial leadership. A Wikipedia-based strategic analysis of Industry 4.0. Expert Systems with Applications, 160: 113645.

Bowen, H. (1953). Social Responsabilities of the Businessman. New York: Harper.

Casprini, E., Dabic, M., Kotlar, J., and Pucci, T. (2020). A bibliometric analysis of family firm internationalization research: Current themes, theoretical roots, and ways forward.International Business Review,29(5), pp. 1-18.

Chang, H. H., and Sokol, D. D. (2022). How incumbents respond to competition from innovative disruptors in the sharing economy—The impact of Airbnb on hotel performance. Strategic Management Journal, 43(3), 425-446.

Chesbrough, H., and Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. Industrial and Corporate Change,11(3), 529-555.

Choudhury, P., Wang, D., Carlson, N. A., and Khanna, T. (2019). Machine learning approaches to facial and text analysis: Discovering CEO oral communication styles. Strategic Management Journal, 40(11), 1705-1732

Cox Pahnke, E., Mcdonald, R., Wang, D., and Hallen, B. (2015). Exposed: Venture capital, competitor ties, and entrepreneurial innovation. Academy of Management Journal, 58(5), 1334-1360.

Fiorini, N., Pucci, T., Casprini, E., Zanni, L. (2022). Industrial Districts and the challenge of technologies 4.0: between absorption and dissemination. European Planning Studies, forthcoming, DOI: 10.1080/09654313.2022.2161299

Flavián, C., Ibáñez-Sánchez, S., and Orús, C. (2019). The impact of virtual, augmented and mixed reality technologies on the customer experience. Journal of Business Research, 100, 547-560.

Garud, R., Kumaraswamy, A., Roberts, A., and Xu, L. (2022). Liminal movement by digital platform-based sharing economy ventures: The case of Uber Technologies. Strategic Management Journal, 43(3), 447-475.

Grant, R.M. (1996). Toward a knowledge-based theory of the firm. Strategic Management Journal, 17(Special Issue), 109-122.

Gregory, R. W., Henfridsson, O., Kaganer, E., and Kyriakou, H. (2021). The role of artificial intelligence and data network effects for creating user value. Academy of Management Review, 46(3), 534-551.

Guo, Y., and Liang, C. (2016). Blockchain application and outlook in the banking industry. Financial Innovation, 2, 1-12.

Hannigan, T. R., Haans, R. F., Vakili, K., Tchalian, H., Glaser, V. L., Wang, M. S., ... and Jennings, P. D. (2019). Topic modeling in management research: Rendering new theory from textual data. Academy of Management Annals, 13(2), 586-632.

Kagermann, H., Wahlster, W., and Helbig, J. (2013). Recommendations for implementing the strategic initiative Industrie 4.0: Final report of the Industrie 4.0 Working Group. Forschungsunion: Berlin, Germany.

Khanagha, S., Ansari, S., Paroutis, S., and Oviedo, L. (2022). Mutualism and the dynamics of new platform creation: A study of Cisco and fog computing. Strategic Management Journal, 43(3), 476-506.

Klingenberg, C. O., Borges, M. A. V., and Antunes Jr, J. A. V. (2021). Industry 4.0 as a data-driven paradigm: a systematic literature review on technologies. Journal of manufacturing technology management, 32(3), 570-592.

Krakowski, S., Luger, J., and Raisch, S. (2022). Artificial intelligence and the changing sources of competitive advantage. Strategic Management Journal. DOI: 10.1002/smj.3387

Li, Y., Dai, J., and Cui, L. (2020). The impact of digital technologies on economic and environmental performance in the context of industry 4.0: A moderated mediation model. International Journal of Production Economics, 229, 107777.

Maslach, D. (2016). Change and persistence with failed technological innovation. Strategic Management Journal, 37(4), 714-723.

Mcwilliams, A., and Siegel, D. (2001). Corporate Social Responsibility: A Theory of the Firm Perspective. Academy of Management Review,26(1), 117-127.

Messeni Petruzzelli, A., Murgia, G., & Parmentola, A. (2021). How can open innovation support SMEs in the adoption of I4.0 technologies? An empirical analysis. R&D Management, radm.12507. https://doi.org/10.1111/radm.12507

Osterwalder, A., Pigneur, Y., and Tucci, C. L. (2005). Clarifying business models: Origins, present and future of the concept. Communications of the Association for Information Science (CAIS),16, 1–25.

Oztemel, E., and Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. Journal of intelligent manufacturing, 31, 127-182.

Patterson, K. A., Grimm, C. M., and Corsi, T. M. (2003). Adopting new technologies for supply chain management. Transportation Research Part E: Logistics and Transportation Review, 39(2), 95-121.

Piezunka, H., and Dahlander, L. (2015). Distant search, narrow attention: How crowding alters organizations' filtering of suggestions in crowdsourcing. Academy of Management Journal, 58(3), 856-880.

Porter M.E. (1985). Competitive advantage. New York, Free Press.

Raisch, S., and Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. Academy Of Management Review, 46(1), 192-210.

Roy, R., and Sarkar, M. B. (2016). Knowledge, firm boundaries, and innovation: Mitigating the incumbent's curse during radical technological change. Strategic Management Journal, 37(5), 835-854.

Shrouf, F., Ordieres, J., and Miragliotta, G. (2014, December). Smart factories in Industry 4.0: A review of the concept and of energy management approached in production based on the Internet of Things paradigm. In 2014 IEEE international conference on industrial engineering and engineering management (pp. 697-701). IEEE.

Van Eck, N.J., and Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523-538.

Wernerfelt, B. (1984). A resource based view of the firm. Strategic Management Journal, 5: 171-180.

Wu, W. P. (2008). Dimensions of social capital and firm competitiveness improvement: The mediating role of information sharing. Journal of Management Studies, 45(1), 122-146.

Zhu, X., Mukhopadhyay, S. K., and Kurata, H. (2012). A review of RFID technology and its managerial applications in different industries. Journal of Engineering and Technology Management, 29(1), 152-167.

Zott, C., and Amit, R. (2007). Business model design and the performance of entrepreneurial firms. Organization Science, Vol. 18, pp. 181-199.

# PERFORMANCE MANAGEMENT AND UNIVERSITIES: A BIBLIOMETRIC LITERATURE REVIEW

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## ABSTRACT

This paper provides a bibliometric literature review on performance evaluation within the context of universities outlining research streams interactions, empirical findings, and overall dependencies of the two foregoing research streams. First, our research summarizes the state of the art of previously published articles obtained from the Scopus database. After a rigorous selection process, the final sample utilized within the present study is composed of 273 peer reviewed articles. To conduct this study's analysis, the authors have utilized the Bibliometrix R package. In addition to the more descriptive information concerning the obtained sample, this study presents several research clusters: perception and attitude of human resources, tool system, HR performance measurement and services and resources performance measurement. Furthermore, our paper underlines flourishing future research avenues in an attempt to guide and support future studies targeting various dimensions of performance evaluation within the context of universities. The outlined gaps highlight both theoretical and contextual research gaps. (*Use style: AR Main Body*)

*Keywords: University, Performance evaluation, Performance appraisal, Performance management, Performance assessment, Higher educational institutions, Key performance indicator, Performance measurement, College, Higher education*

## 1. INTRODUCTION

As evidenced by several studies (de la Torre et al., 2017), the issue of performance measurement in universities has undergone exponential growth over the past decades making a particularly dynamic and multidimensional literature stream (Vlăsceanu et al., 2005). As emphasized by Armstrong, (2009), the concept of performance is the result derived from the combination of the organization's strategic goals, contribution to the economy, and customer satisfaction. Performance measurement plays a critical role within various organizations, including academic entities since those institutions must satisfy governmental demands and performance assessments (Abubakar et al., 2018). Governments are key external stakeholders for universities which operate under countries legislations and governmental scrutiny and evaluation (Miller et al., 2014).

Nonetheless, as far as the authors are concerned, this stream of literature has not been analyzed nor systematized. Therefore, it remains fragmented. Consequently, there is a need to analyze the current state of the art through descriptive statistics, as well as systematize its various thematic dimensions (Hernandez-Diaz et al., 2021; Valmorbida and Ensslin, 2017). Consequently, the aim of the research is to analyze and explore which main literature research streams are linked to university performance systems and, as a result, provide insight into which factors need to be considered to implement a comprehensive performance evaluation model. Therefore, considering the previously reported theoretical and contextual gaps, the following research question has been formulated:

RQ - What are the thematic strands that can be identified within the literature in the university performance management field?

Our paper employs a bibliometric and thematic analysis of the literature stream focusing on university performance evaluation. Additionally, this study further contributes to the research field by providing future research avenues to guide future empirical contributions to deepen our current understanding of various themes associated with the university performance literature stream (Vrontis and Christofi, 2021). In recent decades, the adoption of bibliometric methods for conducting various studies has become increasingly popular, providing researchers with an appropriate approach to analyze and gather descriptive statistics in relation to a research sample (Zupic and Čater, 2015). Furthermore, by utilizing such a widely recognised approach, the authors of the paper employ a methodology which can easily be reproduced for transparency's sake ((Zupic and Čater, 2015). The adoption of the foregoing methodology is further supported by Castillo-Vergara et al., (2018). They report that recent bibliometric analyses have played a key role in the process of systematization in the field of performance management (Castillo-Vergara et al., 2018). In addition, the use of a bibliometric approach allows the authors to identify through future research avenues theoretical and contextual gaps to broaden the performance debate within the university context (Castillo-Vergara et al., 2018). Through the analysis, the authors were able to identify four main clusters to classify the literature inside the obtained sample. The first cluster contains information about perception and attitude of human resources and how people inside the organization feel the pressure within the management performance system. The second cluster regards the management tool used to implement the performance evaluation system. The third cluster considers the performance of the human resource, from both perspectives academic and administrative employees. Finally, the last identified cluster encloses the literature regarding the resources used and the service offered. Thanks to this classification an university could implement a comprehensive performance evaluation system avoiding errors that could arise in a poorly developed performance evaluation system.

This study is divided into seven main interconnected sections. The first section, defined "theoretical background", introduces the concepts of the university performance management system. The second section of the article presents a detailed description of the methodology employed. Section three, four and five contains the results of the study conducted by the authors. The sixth section is a summary of the current state of the art, further identifying limitations, implications, and possible future research avenues. Finally, the seventh section concludes the article.

## 2. THEORETICAL BACKGROUND

Performance measurement is defined as a process of quantifying the efficiency and effectiveness of actions (Neely, 2005), and since performance is the contribution through which any organization can achieve its goals, the performance measurement system cannot be lacking in any type of organization. Universities, although public institutions, are responsible for themselves in finding resources to carry out their activities. In the past, the availability of resources from governments has been steadily decreasing forcing universities to focus on their accountability practices and report (Wang, 2010). As a result, universities' managers must carry out multiple activities to report on the results achieved to attract as many resources as possible. Moreover, universities must focus on their reporting and performance measurement practices to comply with regulatory bodies. First, universities began to measure their performance to advertise their strengths to external stakeholders thus furthering their reputation (Cartter and Sawyer, 1966). As a result, multiple performance indicators are utilized by universities (Tambi et al., 2008). Nonetheless, performance measurement systems are also utilized to conduct self-evaluating activities, as well as, comply with governmental regulations and obtain additional grants and funds to further expand the entity's growth and improvement. Within the current stream of literature, multiple indicators of performance within universities have been identified. The performance appraisal system is so relevant to today's universities that most higher education institutions engage with other higher education entities to assess and evaluate their respective performance appraisal systems (Hazelkorn et al., 2016). Performance indicators and different evaluation criteria are used to try to ensure and maximize internal and external stakeholder satisfaction (Vlăsceanu et al., 2005).

According to previously published empirical findings, the university performance management system can be divided into two dimensions: the academic and the administrative sub systems (Hernandez-Diaz et al., 2021). The academic performance subsystem is in turn divided into educational performance, research performance and third mission performance. The academic sub-dimension includes teaching and learning methodologies, the assessment system, academic courses, programs, learning outcomes, students, academic staff, and academic processes (Wang, 2010). The

research subsystem deals with scientific production and knowledge in their respective fields. The objective of the third mission is to measure the university's commitment to social responsibility practices. On the other hand, the administrative subsystem consists of financial performance, human resource management, resource and infrastructure management and internationalization performance.

## 3. METHODOLOGY

The present study employs a bibliometric approach to map the literature concerning the thematic area of performance in universities. The foregoing research approach has been deemed relevant since it allows researchers to analyze large quantities of literature concerning a specific dimension or research theme (Farooq, 2022; Mukherjee et al., 2022; Uluyol et al., 2021). In fact, the bibliometric methodology has been previously utilized by multiple authors in an attempt to analyze large quantities of publications within the business and management domains (Mukherjee et al, 2022). Although there are plenty of databases reporting scientific bodies of work and articles, the authors of this study focused on the Scopus database since it contains far more indexed journals than other platforms (Hassan and Hasan, 2021; Khatib et al., 2022; Benameur et al., 2023). Furthermore, Scopus is internationally recognised and used to conduct bibliometric analysis within the field of economics and management (El Baz and Iddik, 2022; Khan and Muktar, 2020). Within the Scopus platform, the authors were able to access and gather the essential and necessary data required to conduct this type of research, including authors, abstract, references, countries, institutions, journals and their impact factor (El Baz and Iddik, 2022). The authors had to select appropriate keywords in an attempt to create a string that would encompass all articles required to answer the research questions outlined in the introduction of the paper. The keywords were selected based on existing studies that explore the thematic dimension of performance within the university context. Moreover, the authors of the paper tried to further justify their chosen string by comparing it and obtaining inspiration from previous studies conducting bibliometric, systematic and structured literature reviews.

Within figure 1 the authors of the paper present the research string entered within the Scopus database to obtain their initial research sample. The Boolean operator (OR), asterisk and quotation marks were utilized to gather the relevant articles within a single search (Secinaro et al, 2022). Thanks to the studies of Franco-Santos et al. (2012), Hernandez-Diaz et al. (2021), Vale, J. et al. (2022), Valmorbida and Ensslin (2017), the authors were able to identify a complete number of synonyms for both strands of research.

```
( TITLE-ABS-KEY ( "performance assessment" )  OR  TITLE-ABS-KEY ( "performance evaluation"
) OR  TITLE-ABS-KEY ( "performance appraisal" )  OR  TITLE-ABS-KEY ( "kpi" )  OR  TITLE-ABS-KEY
( "key performance indicator*" )  OR  TITLE-ABS-KEY ( "performance measur*" )  OR  TITLE-ABS-KEY
                                    ( "performance manag*" )
                                             AND
  TITLE-ABS-KEY ( "Universit*" )  OR  TITLE-ABS-KEY ( "HEO" )  OR  TITLE-ABS-KEY ( "higher
     education" )  OR  TITLE-ABS-KEY ( "college" )  OR  TITLE-ABS-KEY ( "HEI" ) )
```

Figure 1. Search string

The records corresponding to this study's results were obtained in January 2023. The authors of this paper adopt PRISMA as an approach to conducting our research since it is widely used to analyze the literature within the field of management (Mohamed et al., 2020). Initially, the obtained results consisted of 11382 (identification phase). However, during the screening process, the authors of the paper applied multiple filters into the Scopus database in order to refine the obtained sample. First, the authors excluded any document or publication that was not written in English (Uluyol et al., 2021). Second, the authors excluded any publications that were not within the management field since the aim of the present study is to analyze the literature concerning universities and performance from a managerial perspective. Third, all the sources that were not articles were excluded (Biancone et al., 2022). Furthermore, all articles and sources that have yet to be published were excluded to focus on the existing and present body of knowledge (Secinaro, et al., 2022). Thanks to the screening phase only 1077 articles were included for the eligibility phase. The researchers manually analyzed and reviewed all articles to understand whether they were eligible to remain within the database utilized for this research. Finally, 273 articles remained. Many articles were excluded because they speak about performance evaluation in the public sector and not in the university context, others were discarded because they spoke about studies and research done by universities but analyzed corporate performance. The authors employed Bibliometrix R-Studio (Aria and Cuccurullo, 2017) as well as Biblioshiny web interface to gather the necessary bibliometric information. VOSviewer was utilized to conduct the necessary cluster analysis for bibliometric studies (Secundo et al., 2020). Within figure 2 the authors graphically summarize the research process.
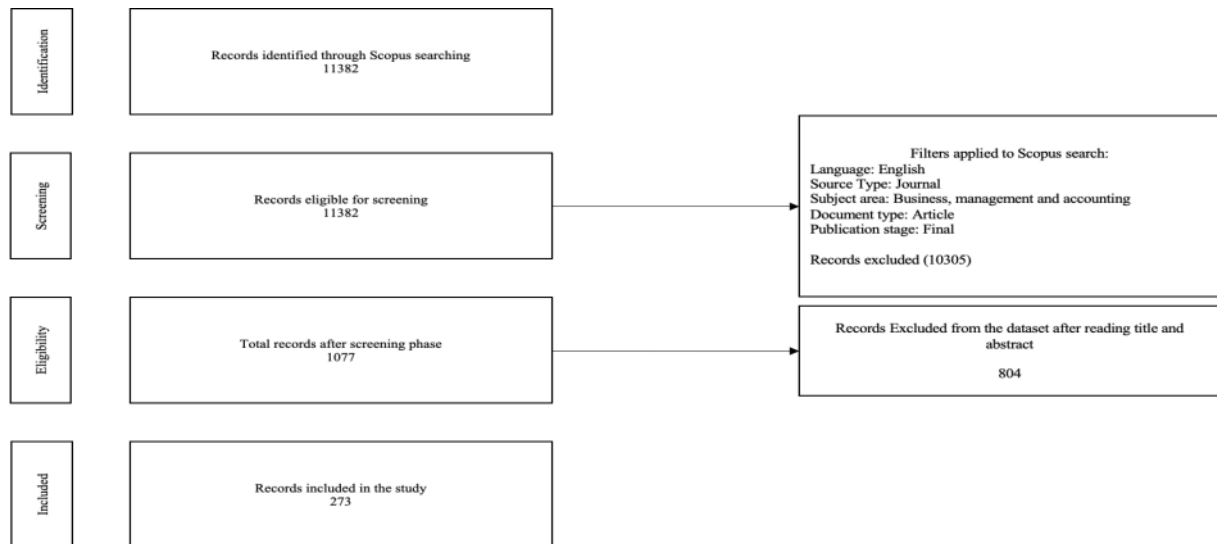
Figure 2. Research process workflow

## 4. DATA DESCRIPTIVE ANALYSIS

In this section of the paper, the authors propose various figure and tables aimed at exploring the descriptive statistics of the sample utilized to conduct the present study.
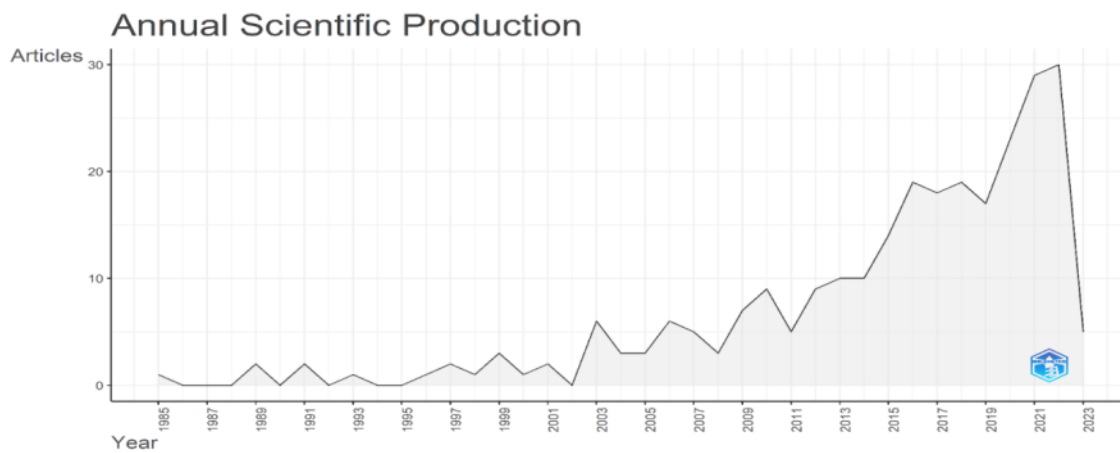


Figure 3. Annual scientific production

Regarding the temporal evolution of publications, figure 3 underlines a clear upward trend can be observed with a growth rate of 4.33% per year. The first article in our sample was published in 1985, and the year with the highest number of publications is 2022, demonstrating the relevancy and growing interest of academics and practitioners.

## Country Scientific Production
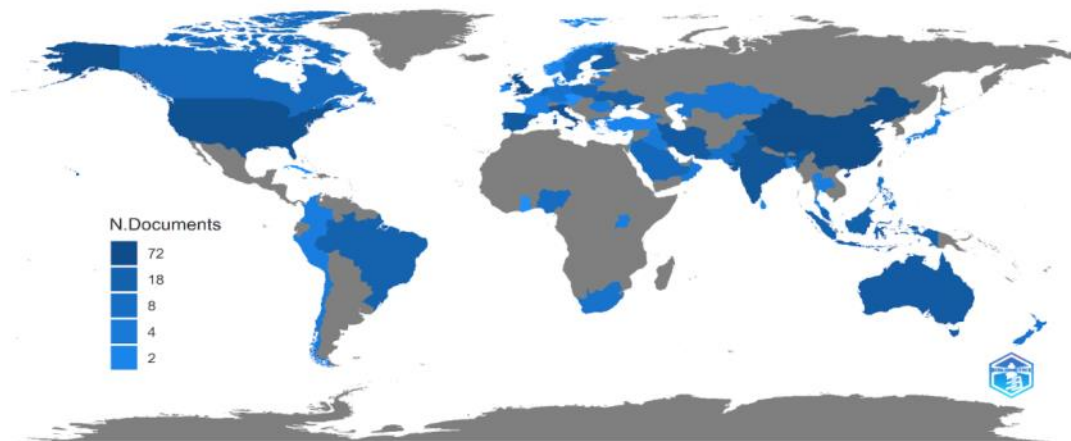


Figure 4. Country scientific production

Figure 4 is useful when trying to identify the countries that fuel most of the academic debate on the topic and its dynamics. China is the most prolific nation on the topic (72 articles published) followed by England and the United States and Italy with (60), (53) and (50) respectively.
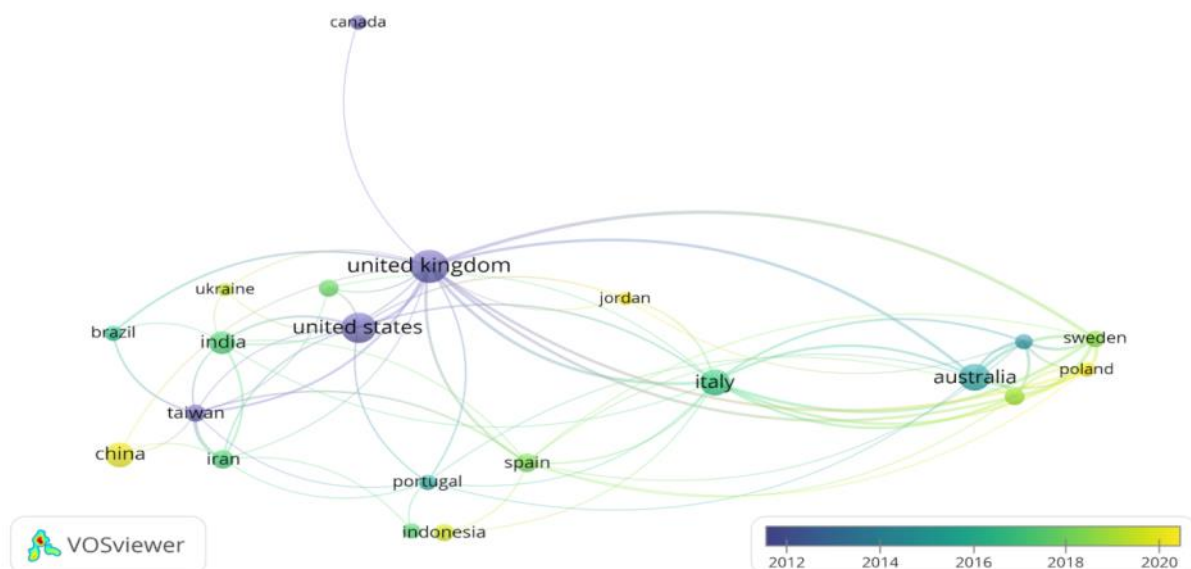


Figure 5. Country citation analysis

From figure 5 it is possible to note that England and the USA are the first countries to talk about the topic whereas, China is one of the last countries to produce scientific knowledge on the topic. Summarizing the two tables, China is one of the countries that started speaking later but now has the greatest number of articles published on the topic.

## 5. THEMATIC ANALYSIS

Finally, when conducting a review of a stream of literature, topic occurrence-based analysis is the most commonly utilized approach to identify various thematic strands within a specific literature stream (Donthu et al., 2021). Figure 6 outlines the four clusters that were identified by the authors.
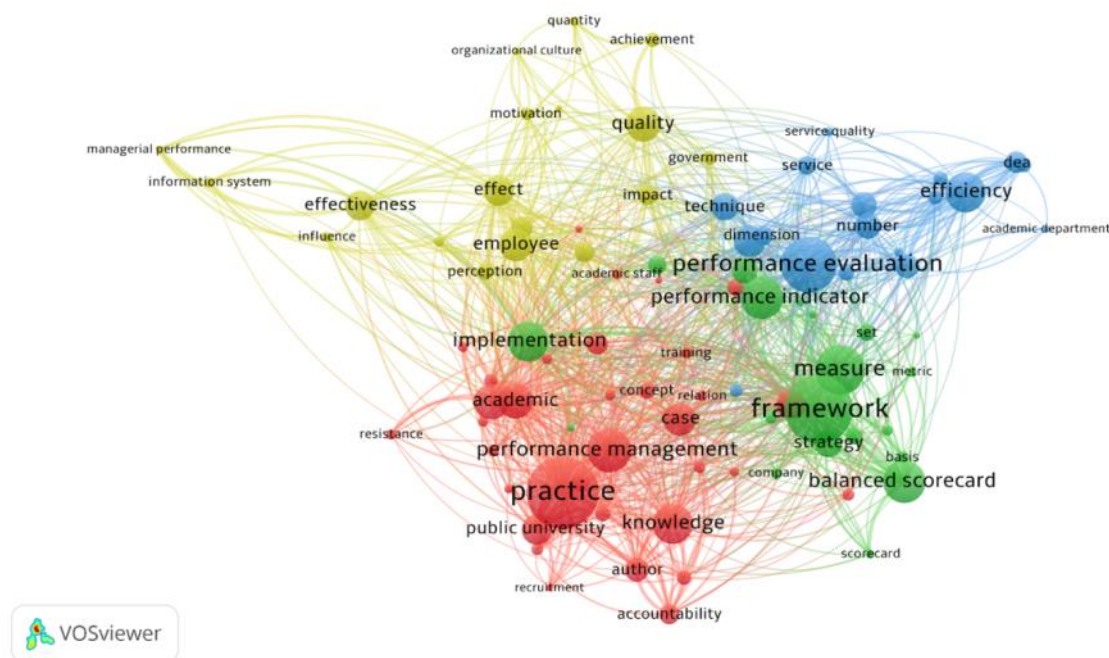


Figure 6. Co-occurrence analysis by using title and abstract

*5.1 Perception and attitude of Human Resources*

The yellow cluster primarily focuses on how appraisees within the university context perceive evaluation models, and consequently discusses the influence these models may have on human resources (Gonzalez-Sanchez et al., 2022; Goncharuk and Cirella, 2022), and how organizations' culture may influence the perception of work conditions (Guarini, 2020; Christopher, 2020). Specifically, the articles identified within this cluster discuss ethics, leadership (Tetteh 2019), and values (Mai and Hoque 2023). Furthermore, this cluster contains empirical findings concerning the perception academics have about the evolution of performance appraisal on their professional identity and how it influences the way academics perceive their profession (Tandilashvili and Tandilashvili 2022).Thus, they discuss how KPI undermine creative, causing undue stress that negatively affects an essential criterion of academia, cognitive thinking (Kairuz et al., 2016), and how fear, anxiety may arise from the development of poorly implemented performance measurement models within the organization (Martin-Sardesai and Guthrie, 2018)

*5.2 Tool system*

The second (green) cluster, on the other hand, discusses what managerial tools are needed to implement models for assessing the performance of individuals and university practices. Words such as performance indicator, balance scorecard, framework, measure are precisely identified in this cluster. Based on the documents that were found within the cluster, authors deal with the tools suitable for implementing a performance management and evaluation method in universities. A framework widely used in the literature for this purpose is the balanced scorecard (Al-Dahiyat *et al.*, 2022; Palaniappan *et al.*, 2021; Camilleri, 2021b; Nazari-Shirkouhi et al., 2020). The literature also aims to identify key performance dimensions and indicators based on mission, goals, and values proper to universities in different areas of the world (Dahiyat 2020; Biscaia *et al.*, 2020). Alternative methodologies such as the use of bibliometric indicators for measuring research performance are proposed in the work of (Ryan, 2021). Particular attention is also given to environmental key performance indicators in order to improve the impact the organization has on the environment (Lo-Iacono-Ferreira, 2018). Also, sustainability indicators are proposed in the literature (Cavicchi and Vagnoni, 2018). In addition to managerial tools, we also find a part of the literature that analyses the use of IT tools for performance evaluation proposing the use of electronic forms (e-Forms) or trying to develop an integrated framework digitizing the document preparation processes. (Ali Aljarallah and Kumar Dutta, 2022). Finally, the literature in this cluster discusses the tools for reporting and communicating performance to all stakeholders, such as integrated reporting. (Adhikariparajuli *et al.*, 2021)

*5.3 HR performance and skills*

The third (red) cluster encompasses the part of the literature that seeks to assess HR performance within the academic e the administrative subsystem. This cluster, therefore, on the first hand, includes performance and skill of human resource and recommendations for effective human resource management in higher education institutions (Ghassabi, 2017) (Kudaibergenov, 2021), analyzing recruitment, training practices for teachers (Mattjik et al., 2020), and the relationship between soft skills and remuneration towards teacher performance (Polnaya, 2018). HR performance measurement also includes administrative employees (Arogundade et al., 2021) proposing automated methods to facilitate human resource management tasks (Ojokoh et al., 2019). Some papers aim for example to verify the quality of the inventory of teacher's competences as a measure of teachers' performance (Ludwikowska, 2022). Other papers seek to present a comprehensive exploration of the talent management practices in universities regarding recruiting, retaining, and training the performance of talented employees (Taamneh et al., 2022; Musakuro, 2022). On the other hand, knowledge is at the center of the discussion, it is considered a critical success factor that will also advance teaching and

research (Velásquez and Mejía, 2021) and finally authors speak about teachers' engagement in knowledge transfer from higher education institutions to society (Gonzalez-Sanchez et al., 2022).

*5.4 Performance measurement of services offered, resources used and spin off.*

Finally, the blue cluster, compared to the red cluster, is responsible for measuring the performance of services offered, universities' projects and initiatives undertaken, and resources used to carry out its activities as an organization. Within the cluster, authors discuss the quality evaluation of general service offered by institutions. (Camilleri, 2021 a), the quality perceived in the teaching process (Bi, 2022; Nojavan, 2021) and lastly the author proposed a framework to measure the impact of the third mission (Secundo *et al.*, 2017). The performance of the so-called spin-off projects are highly discussed in order to understand current performance measurement practices and challenges related to university-industry collaboration projects (Rantala *et al.*, 2021; Iazzolino *et al.*, 2020; Olvera *et al.*, 2021) addressing the typical problems that characterize the growth of a spin-off, the excessive attention to technological aspects compared to commercial and managerial ones; and the need for assessment systems that seek to assess all areas of risk and highlight any mismatches. Moreover, performance of research projects are highlighted in this cluster (Khurizan *et al.*, 2018). Authors find articles discussing university efficiency evaluation using frontier methods to analyze cost determinants by evaluating average incremental costs and returns to scale (Johnes, 2022). The Data Envelopment Approach (DEA) is widely used to measure overall operational efficiency (Chen *et al.*, 2021; Ding *et al.*, 2021), financial efficiency (Tavares *et al.*, 2021), academic library efficiency (Najafi *et al.*, 2022). Finally, the literature focuses on funding and monitoring university performance (Mizrahi, 2021; Hossain *et al.*, 2013).

## 6. RESEARCH GAPS AND FUTURE RESEARCH AVENUES

Within this section, the authors provide a summary of the identified research gaps. Furthermore, this study aims to outline future research avenues. Table 1 summarizes the most relevant future research gaps of this literature stream.

| Citation | Gap | Future research |
|---|---|---|
| ● (Tandilashvili and Tandilashvili, 2022) | Research performance is the main criterion for university career advancement, and younger academics are more open to the new values than their older experienced colleagues. | How to adapt to the pressures for publication has better chances for an academic career? What are the effects of Performance management systems on reputation and career progression? What are the effects of lower admiration of one's profession? |
| ● (Martin-Sardesai and Guthrie, 2018) | Performance of academics focus only on one specific research component of academic performance, namely research. | How universities manage Human capital to combat the unintended consequences of Performance |

| | | management system<br>What extent can the effect of research-only Performance Management Systems lead to the loss of human capital due to stress? |
|---|---|---|
| ● (Camilleri, b 2021) | Profit and financial performance are not the most performance that university are interested in | How BSC and its performance metrics are resulting in a quality higher education.<br>How are Higher educational institutions utilizing the BSC performance management framework? |
| ● (Hladchenko, 2015) | Goals to be achieved are not clear and easy to understand for the members of the organization | How Balanced Scorecard training at different levels of the university enables university members to see their strategic goals clearly?<br>How much can an employee's performance improve if he or she knows the goals to be achieved clearly and concisely? |
| ● (Ludwikowska, 2022) | The desired teacher's skill profile does not always match the existing teacher's skill profile | How can human resource management practices bridge this difference? |

Table 1. Future research avenues

## 7. CONCLUSION

This paper aims to fuel the academic debate by attempting to systematize the various strands of existing literature in its various thematic clusters. The analysis provides solid evidence of the growth of scholarly production in this field essentially over the past decade, highlighting the increasing focus of universities in this field by providing the most influential research subtopics, identifying research trends, and orienting researchers on the various topics. Moreover, the analysis highlights the current relevancy of the topic investigated.

*Theoretical Contributions*

In conducting this research, the authors' objective is to further develop the literature stream concerning universities and performance management systems. We identified the following theoretical contributions. First, due to its relevance of this topic, this research aims to increase existing literature, in order to provide several avenues for future research. Second, this study aims to emphasize and highlight the importance of the management control instruments and evaluation performance within universities. Finally, the present body of work highlights how performance management systems within universities can negatively impact professionals' ambitions and ideal

image of their profession; hence, universities might lose human capital because of overly constrictive performance measurement systems (Martin-Sardesai and Guthrie, 2018).

*Practical implications*

The researchers provide an overview of the instruments that universities might want to integrate within their evaluation performance systems. In addition, the authors suggest how strict research policies might negatively affect human capital retention (Tandilashvili and Tandilashvili, 2022). This is because a strong emphasis on researchers' outputs might deteriorate their willingness to partake in other activities.

*Research limitations*

The first limitation of this study is because the authors used only the Scopus database. In conclusion, we suggest that the set of scholars interested in university performance apply this study to other databases such as WoS and try to compare the results with ours, such as analyzing and suggesting future research avenues to reinforce and deepen the research trends and themes highlighted in within this study (Md Khudzari, J. et al. 2018).

## REFERENCES

Abubakar, A., Hilman, H. and Kaliappen, N. (2018) 'New tools for measuring global academic performance', SAGE open, 8(3), p. 215824401879078. doi: 10.1177/2158244018790787.

Adhikariparajuli, M., Hassan, A. and Fletcher, M. (2021) 'Integrated reporting implementation and core activities disclosure in UK Higher Education institutions', Administrative sciences, 11(3), p. 86. doi: 10.3390/admsci11030086.

Al-Dahiyat, M. A. (2020) 'Measuring the strategic performance of higher education institutions: A balance scorecard approach', Academy of Accounting and Financial Studies Journal, 24, pp. 1–14.

Ali Aljarallah, N. and Kumar Dutta, A. (2022) 'Developing a quality automation framework to assess specifications for academic accreditation in Saudi Arabian universities', TEM Journal, pp. 667–674. doi: 10.18421/tem112-21.

Aria, M. and Cuccurullo, C. (2017) 'bibliometrix: An R-tool for comprehensive science mapping analysis', Journal of Informetrics, 11(4), pp. 959–975.

Armstrong, M. (2009) Armstrong's handbook of performance management: An evidence-based guide to delivering high performance. 4th edn. London, England: Kogan Page. Available at: https://books.google.at/books?id=wtwS9VG-p4IC.

Bi, H. H. (2022) 'Applying statistical process control to teaching quality assurance at higher education institutions', Quality Management Journal, 29(2), pp. 145–157. doi: 10.1080/10686967.2022.2035288.

Biancone, P. P., Brescia, V., Lanzalonga, F. and Mahabubul G., (2022) 'Using bibliometric analysis to map innovative business models for vertical farm entrepreneurs', British food journal (Croydon, England), 124(7), pp. 2239–2261. doi: 10.1108/bfj-08-2021-0904.

Biscaia, R., Melo, A., Machado, I., Figueiredo, H. and Rocha. Paul., (2020) 'Performance indicators for research and cultural creation activities in polytechnic higher education institutions: a consensus building approach', Tertiary education and management, 26(3), pp. 281–294. doi: 10.1007/s11233-019-09035-y.

Camilleri, M. A. (2021a) 'Evaluating service quality and performance of higher education institutions: a systematic review and a post-COVID-19 outlook', International journal of quality and service sciences, 13(2), pp. 268–281. doi: 10.1108/ijqss-03-2020-0034.

Camilleri, M. A. (2021b) 'Using the balanced scorecard as a performance management tool in higher education', Management in education, 35(1), pp. 10–21. doi: 10.1177/0892020620921412.

Cartter, A. M. and Sawyer, R. A. (1966) 'an assessment of quality in graduate education', Physics today, 19(8), pp. 75–76. doi: 10.1063/1.3048413.

Castillo-Vergara, M., Alvarez-Marin, A. and Placencio-Hidalgo, D. (2018) 'A bibliometric analysis of creativity in the field of business economics', Journal of business research, 85, pp. 1–9. doi: 10.1016/j.jbusres.2017.12.011.

Cavicchi, C. and Vagnoni, E. (2018) 'Sustainability performance measurement inside academia: The case of a north Italian University', Journal of accounting & organizational change, 14(2), pp. 138–166. doi: 10.1108/jaoc-04-2016-0022.

Chen. Y., Xuanxuan. M., Ping, Y. and Mengyuan. W. (2021) 'Operating efficiency in Chinese universities: An extended two-stage network DEA approach', Journal of management science and engineering, 6(4), pp. 482–498. doi: 10.1016/j.jmse.2021.08.005.

Christopher, J. (2020) 'Implementation of performance management in an environment of conflicting management cultures', international journal of productivity and performance management, 69(7), pp. 1521–1539. doi: 10.1108/ijppm-02-2019-0071.

Dahiyat, M., Altarawneh. M., Altkryty. I. and Majali. E. (2022) 'Applicability of the balanced scorecard in higher education institutions: evidence from Jordan', International journal of productivity and quality management, 37(4), p. 435. doi: 10.1504/ijpqm.2022.127503.

Ding, T., Yang. J., Huaqing. w., Wen. Y., Tan. C. and Liang. L. (2021) 'Research performance evaluation of Chinese university: A non-homogeneous network DEA approach', Journal of management science and engineering, 6(4), pp. 467–481. doi: 10.1016/j.jmse.2020.10.003.

Donthu, N., Kumar. S., Mukherjee. D., Pandev. N. and Lim. W. (2021) 'How to conduct a bibliometric analysis: An overview and guidelines', Journal of business research, 133, pp. 285–296. doi: 10.1016/j.jbusres.2021.04.070.

El Baz, J. and Iddik, S. (2022) 'Green supply chain management and organizational culture: a bibliometric analysis based on Scopus data (2001-2020)', International journal of organizational analysis, 30(1), pp. 156–179. doi: 10.1108/ijoa-07-2020-2307.

Farooq, R. (2022) 'A review of knowledge management research in the past three decades: a bibliometric analysis', VINE journal of information and knowledge management systems. doi: 10.1108/vjikms-08-2021-0169.

Franco-Santos, M., Lucianetti, L. and Bourne, M. (2012) 'Contemporary performance measurement systems: A review of their consequences and a framework for research', Management accounting research, 23(2), pp. 79–119. doi: 10.1016/j.mar.2012.04.001.

Goncharuk, A. G. and Cirella, G. T. (2022) 'Effectiveness of academic institutional models in Europe: university instructor perception case research from Bosnia and Herzegovina and France', International journal of educational management, 36(5), pp. 836–853. doi: 10.1108/ijem-06-2021-0241.

Gonzalez-Sanchez, M. B., Gutiérrez-López, C. and Barrachina Palanca, M. (2022) 'How can universities engage lecturers in knowledge transfer? analyzing the influence of performance management systems', Journal of knowledge management, 26(4), pp. 1083–1110. doi: 10.1108/jkm-02-2021-0131.

Guarini, E., Magli, F. and Francesconi, A. (2020) 'Academic logics in changing performance measurement systems: An exploration in a university setting', Qualitative research in accounting & management, 17(1), pp. 109–142. doi: 10.1108/qram-06-2019-0076.

Hazelkorn, E. (2016) Rankings and the reshaping of higher education: The battle for world-class excellence. Basingstoke, England: Palgrave Macmillan.

Hernandez-Diaz, P. M., Polanco, J.-A. and Escobar-Sierra, M. (2021) 'Building a measurement system of higher education performance: evidence from a Latin-American country', International journal of quality & reliability management, 38(6), pp. 1278–1300. doi: 10.1108/ijqrm-04-2020-0133.

Hladchenko, M. (2015) 'Balanced Scorecard – a strategic management system of the higher education institution', International journal of educational management, 29(2), pp. 167–176. doi: 10.1108/ijem-11-2013-0164.

Hossain, M. J. and Ahmed, S. M. Z. (2013) 'Developing a service performance assessment system to improve service quality of academic libraries', Business information review, 30(4), pp. 210–221. doi: 10.1177/0266382113512404.

Iazzolino, G., Greco. D., Verteramo. S., Attanasio. A., Carravetta. G., and Granato. T. (2019) 'An integrated methodology for supporting the development and the performance evaluation of academic spin-offs', Measuring business excellence, 24(1), pp. 69–89. doi: 10.1108/mbe-09-2019-0097.

Johnes, G., Johnes, J. and Virmani, S. (2022) 'Performance and efficiency in Indian universities', Socio-economic planning sciences, 81(100834), p. 100834. doi: 10.1016/j.seps.2020.100834.

Kairuz, T., Andries. L., Nickloes. T. and Truter. I. (2016) 'Consequences of KPIs and performance management in higher education', International journal of educational management, 30(6), pp. 881–893. doi: 10.1108/ijem-05-2015-0067.

Khan, M. H. and Muktar, S. N. (2020) 'A bibliometric analysis of green human resource management based on scopus platform', Cogent business & management, 7(1), p. 1831165. doi: 10.1080/23311975.2020.1831165.

Khurizan, N. S. N., Mustafa, A. and Hamid, ah A. (2018) 'An efficiency analysis of grant awarded research projects: a case study of a Malaysian public university', International journal of public sector performance management, 4(1), p. 80. doi: 10.1504/ijpspm.2018.088696.

Kudaibergenov, Z., ; Abilkassym, A., Izatullayeva B,. Agabekova, G.,; Koptayeva, G., (2021) 'Analysis of human resources management practices in higher education institutions: a study on kazakh universities', Academy of Strategic Management Journal, Vol. 20, 1-23.

Lo-Iacono-Ferreira, V. G., Capuz-Rizo, S. F. and Torregrosa-López, J. I. (2018) 'Key Performance Indicators to optimize the environmental performance of Higher Education Institutions with environmental management system – A case study of Universitat Politècnica de València', Journal of cleaner production, 178, pp. 846–865. doi: 10.1016/j.jclepro.2017.12.184.

Ltbach, P. G. and Balan, J. (2007) World class worldwide: Transforming research universities in Asia and Latin America. Johns Hopkins University Press.

Mai, K. T. and Hoque, Z. (2023) 'Self, ethics, morality and accountability: a case of a public university', Accounting auditing & accountability, 36(1), pp. 323–347. doi: 10.1108/aaaj-04-2020-4504.

Mattjik, M., Akbar, M. and Yasin, M. (2020) 'Managing human resources in a higher education institution: Managing the lecturers', International Journal of Scientific and Technology Research, Volume 9, pp 2360 – 2363.

Martin-Sardesai, A. and Guthrie, J. (2018) 'Human capital loss in an academic performance measurement system', Journal of intellectual capital, 19(1), pp. 53–70. doi: 10.1108/jic-06-2017-0085.

Miller, K., McAdam, M. and McAdam, R. (2014) 'The changing university business model: a stakeholder perspective: Changing university business model', R and D Management, 44(3), pp. 265–287. doi: 10.1111/radm.12064.

Mizrahi, S. (2021) 'Performance funding and management in higher education: The autonomy paradox and failures in accountability', Public performance & management review, 44(2), pp. 294–320. doi: 10.1080/15309576.2020.1806087.

Mohamed, R., Ghazali, M. and Samsudin, M. A. (2020) 'A systematic review on mathematical language learning using PRISMA in Scopus database', Eurasia journal of mathematics science and technology education, 16(8), p. em1868. doi: 10.29333/ejmste/8300.

Mukherjee, D., Kumar, S., Mukherjee, D. and Goyal, K. (2022) 'Mapping five decades of international business and management research on India: A bibliometric analysis and future directions', Journal of business research, 145, pp. 864–891. doi: 10.1016/j.jbusres.2022.03.011.

Nazari-Shirkouhi, S., Mousakhani, S., Tavakoli, M., Dalvand, M., Šaparauskas, j. and Antuchevičienė, J. (2020) 'Importance-performance analysis based balanced scorecard for performance evaluation in higher education institutions: An integrated fuzzy approach', Journal of business economics and management, 21(3), pp. 647–678. doi: 10.3846/jbem.2020.11940.

Neely, A. (2005) 'The evolution of performance measurement research: Developments in the last decade and a research agenda for the next', International journal of operations & production management, 25(12), pp. 1264–1277. doi: 10.1108/01443570510633648.

Nojavan, M., Heidari, A. and Mohammaditabar, D. (2021) 'A fuzzy service quality based approach for performance evaluation of educational units', Socio-economic planning sciences, 73(100816), p. 100816. doi: 10.1016/j.seps.2020.100816.

Olvera, C., Piqué, M., Cortés, U. and Nemirovsky, M. (2021) 'Evaluating university-Business Collaboration at science parks: A business perspective', Triple helix (Heidelberg), 8(3), pp. 445–485. doi: 10.1163/21971927-bja10007.

Palaniappan, U., Suganthi, L. and Shagirbasha, S. (2021) 'Building a yardstick–a benchmark framework for assessing higher education management institutions', Benchmarking An International Journal, 28(8), pp. 2382–2406. doi: 10.1108/bij-07-2020-0383.

Peris-Ortiz, M., García-Hurtado, D. and Devece, C. (2019) 'Influence of the balanced scorecard on the science and innovation performance of Latin American universities', Knowledge management research & practice, 17(4), pp. 373–383. doi: 10.1080/14778238.2019.1569488.

Polnaya, I., Nirwanto, N. and Triatmanto, B., (2018) ' The evaluation of lecturer performance through soft skills, organizational culture and compensation on Private University of Ambon', Academy of Strategic Management Journal Volume 17

Rantala, T., Ukko, J. and Saunila, M. (2021) 'The role of performance measurement in university–industry collaboration projects as a part of managing Triple Helix operations', Triple helix (Heidelberg), 8(3), pp. 405–444. doi: 10.1163/21971927-bja10011.

Ryan, J. C. (2021) 'Retaining, resigning and firing: bibliometrics as a people analytics tool for examining research performance outcomes and faculty turnover', Personnel review, 50(5), pp. 1316–1335. doi: 10.1108/pr-12-2019-0676.

Secinaro, S., Calandra, D., Lanzalonga, F., Ferraris, A. (2022) 'Electric vehicles' consumer behaviours: Mapping the field and providing a research agenda', Journal of business research, 150, pp. 399–416. doi: 10.1016/j.jbusres.2022.06.011.

Secinaro, S., Brescia, V., Lanzalonga, F., Santoro, G., (2022) 'Smart city reporting: A bibliometric and structured literature review analysis to identify technological opportunities and challenges for sustainable development', Journal of business research, 149, pp. 296–313. doi: 10.1016/j.jbusres.2022.05.032.

Secundo, G., Perez, S., Martinaitis, D., Leitner, E., (2017) 'An Intellectual Capital framework to measure universities' third mission activities', Technological forecasting and social change, 123, pp. 229–239. doi: 10.1016/j.techfore.2016.12.013.

Secundo, G., Rippa, P. and Cerchione, R. (2020) 'Digital Academic Entrepreneurship: A structured literature review and avenue for a research agenda', Technological forecasting and social change, 157(120118), p. 120118. doi: 10.1016/j.techfore.2020.120118.

Tambi, A. M. B. A., Ghazali, M. C. and Yahya, N. B. (2008) 'The ranking of higher education institutions: A deduction or delusion?', Total quality management & business excellence, 19(10), pp. 997–1011. doi: 10.1080/14783360802264046.

Tandilashvili, N. and Tandilashvili, A. (2022) 'Academics' perception of identity (re)construction: a value conflict created by performance orientation', Journal of Management & Governance, 26(2), pp. 389–416. doi: 10.1007/s10997-022-09627-8.

Tavares, R. S., Angulo-Meza, L. and Sant'Anna, A. P. (2021) 'A proposed multistage evaluation approach for Higher Education Institutions based on network Data envelopment analysis: A Brazilian experience', Evaluation and program planning, 89(101984), p. 101984. doi: 10.1016/j.evalprogplan.2021.101984.

Tetteh, G. A. (2019) 'Evaluating university leadership performance using Lean Six Sigma framework', International journal of lean six sigma, 10(4), pp. 1018–1040. doi: 10.1108/ijlss-05-2018-0051.

de la Torre, E. M., Gómez-Sancho, J.-M. and Perez-Esparrells, C. (2017) 'Comparing university performance by legal status: a Malmquist-type index approach for the case of the Spanish higher education system', Tertiary education and management, 23(3), pp. 206–221. doi: 10.1080/13583883.2017.1296966.

Uluyol, B., Secinaro S., Calandra, D., Lanzalonga F., (2021) 'Mapping waqf research: a thirty-year bibliometric analysis', Journal of Islamic accounting and business research, 12(5), pp. 748–767. doi: 10.1108/jiabr-01-2021-0031.

Vale, J., Amaral, J., Abrantes, L., Leal, C., and Silva, R. (2022) 'Management accounting and control in higher education institutions: A systematic literature review', Administrative sciences, 12(1), p. 14. doi: 10.3390/admsci12010014.

Valmorbida, S. M. I. and Ensslin, S. R. (2017) 'Performance evaluation of university rankings: literature review and guidelines for future research', International journal of business innovation and research, 14(4), p. 479. doi: 10.1504/ijbir.2017.10008177.

Vlăsceanu, L., Grunberg, L. and Pârlea, D. (2005) Quality Assurance and Accreditation: A Glossary of Basic Terms and Definitions.

Vrontis, D. and Christofi, M. (2021) 'R&D internationalization and innovation: A systematic review, integrative framework and future research directions', Journal of business research, 128, pp. 812–823. doi: 10.1016/j.jbusres.2019.03.031.

Wang, X. (2010) Performance measurement in universities: managerial perspective. University of Twente.

Zupic, I. and Čater, T. (2015) 'Bibliometric methods in management and organization', Organizational research methods, 18(3), pp. 429–472. doi: 10.1177/1094428114562629.

# BLOCKCHAIN FOR DISRUPTIVE ECO-INNOVATIONS: A CONCEPTUAL FRAMEWORK FOR ALTERNATIVE FORMS OF WASTE MANAGEMENT

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## ABSTRACT

Under pressure to reach sustainable development goals, there is a growing interest in alternative forms of natural resources management involving new stakeholders in using new technologies. The blockchain, promoting a decentralized use of both physical and monetary resources, can be utilized to propose alternative innovation models for a sustainable transition. Indeed, the blockchain offers the opportunity to simplify and promote distributed, peer-to-peer trade with lower transaction costs and greater security via cryptography, creating new models for resource management. In previous studies, scholars have analyzed different blockchain applications for improving the management of natural resources. However, researchers have yet to study the potential that this technology can have in modifying the management of natural resources at a systemic level (from the point of view of sustainability), creating disruptive rather than incremental eco-innovations. This technology, following this perspective, is assuming a leading role in the waste management sector. Indeed, the blockchain allows the integration of new stakeholders in waste management processes, producing several positive environmental and social impacts. Therefore, our study will present a conceptual framework that analyzes the blockchain's application from a disruptive eco-innovations perspective in the waste management sector. The findings of this research highlight blockchain applications born outside of market processes. Indeed, thanks to the use of the blockchain, it is possible to involve citizens, NGOs, and other organizations in managing natural resources management creating new innovative forms. For this reason, this paper contributes to innovation management by showing integrative processes involving enterprises, citizens, and the public sector.

*Keywords: Disruptive eco-innovations, Waste management, Innovation management, Developing studies, Sustainable development*

## 1. INTRODUCTION

Climate change is increasingly affecting the quality of life (Tong & Ebi, 2019). Additionally, the divergences between rich and poor have risen in recent years because of the economic crisis (Notteboom et al., 2021). For this reason, innovative forms are emerging to limit the effects of climate change and reduce the economic gap between poor and rich people (George et al., 2021). Eco-innovations (EIs) are in line with these principles. Several studies have found that EIs may mitigate climate change effects (Durán-Romero et al., 2020; Hafeez et al., 2022). Indeed, EIs aim to use materials efficiently, recycle, and re-manage (Vence & Pereira, 2019; Rodríguez-Rebés et al., 2021). For example, the European Commission's Waste Package estimated a potential reduction of 443 million tonnes of GHG between 2014 and 2030 thanks to EIs implementation (Durán-Romero et al., 2020). On the other side, researchers show how EIs can allow more and more people to access primary resources such as energy, food, and water (Dogaru, 2020). For example, off-grid energy systems in developing countries allow the local population to have the availability of energy (Aldieri et al., 2022; Gibellato et al., 2023). For this reason, this type of innovation assumes a central role within the production system. However, according to Genovese & Pansera (2021), we need more than improving production processes to achieve long-term sustainability. Instead, it is necessary to create radical innovations that bring disruptive change at the systemic level to achieve well-being in every country and social class (Seyfang & Smith, 2007; Saratchandra & Shrestha, 2022). Several researchers have shown that innovative forms that follow neoclassical economic principles do not benefit the entire population (Adika, 2020; Yülek & Santos, 2022). Indeed, our production system has increased the divergences and exploitation of some countries (Beckert et al., 2021). For example, in the EI sector, lithium batteries for mobile phones or car batteries have led to greater exploitation of the human capital and the natural resources of developing countries (Obaya et al., 2021).

On the contrary, disruptive eco-innovations (EIs) benefit different social classes in different contexts (Fernández et al., 2021). Disruptive EIs cause discontinuous changes or introduce new technologies that do not integrate with current mechanisms, creating new socio-technical systems (Hazarika & Zhang, 2019). For example, new renewable energy forms, closed-loop systems, and open cycles are examples of disruptive eco-innovations that challenge neoclassical economic systems (Gibellato et al., 2022). Disruptions cause a unique disposition among decision-makers, institutional commitment, technology progress, and user acceptability (De Jesus et al., 2019). From this point of view, the blockchain can promote the birth of disruptive eco-innovations through alternative forms of natural resources management (Swartz, 2017). Indeed, this technology uses a novel approach to creating and using ledgers for reaching a consensus and exchanging money or resources (Nair et al., 2021; Bracci et al., 2022; Pham et al., 2023; Li et al., 2023). For this reason, it is possible to include new stakeholders in

natural resources management because the blockchain simplifies and accelerates information flows and monetary and resources exchanges (Kouhizadeh et al., 2020).

Although previous research has analyzed the EI sector, the relationship between digital technologies and disruptive eco-innovations is still in its infancy. Projects using the blockchain with a disruptive perspective use this technology to create a new socio-technical system based on new governance relationships and business models (Swartz, 2017). More specifically, the waste management sector is an area assuming a leading role according to this perspective. For instance, using social currency, the blockchain-based system may offer financial support for waste collectors, improving citizens' health and socio-environmental education (França et al., 2020). Therefore, how the blockchain supports the development of disruptive EI in the waste management sector needs to be explored. Hence, this paper aims to analyze how the blockchain can stimulate disruptive EIs in the waste sector by implementing new organizational models more efficient from environmental and social points of view. After analyzing the literature, we will present a conceptual framework of disruptive EIs in the waste management sector to understand the characteristics that differentiate these projects from incremental EIs.

This paper brings a main theoretical contribution. It contributes to the literature on ecological economics and innovation management by showing new waste management organizations that involve new stakeholders. From the managerial point of view, this paper shows how the blockchain can create new organizational forms for waste management processes.

This research will develop as follows: first, we will present a literature review regarding the relationship between disruptive EIs, the blockchain, and the waste management sector. Second, we will present a conceptual framework showing the characteristics of disruptive EIs. Finally, the researchers will go through the research's implications, limitations, and future research directions.

## 2. LITERATURE REVIEW

### 2.1 Disruptive eco-innovations and blockchain

While deterministic neoclassical models spur gradual changes, they are less helpful for stimulating disruptive changes in socio-technical systems for social transformation (Gowdy & Erickson, 2005). On the one hand, incremental EIs bring a progressive enhancement to current socio-technical systems, and disruptive innovations are unexpected (Chaminade, 2020; Ul-Durar et al., 2023; Martínez-Martínez et al., 2022). On the other hand, disruptive EIs focus on socio-technical transition and learning processes rather than equilibrium states. These innovations break and generate new norms rather than optimizing the current system (Hazarika & Zhang, 2019). For this reason, it is necessary to

consider new organizational forms where are involved different stakeholders for stimulating disruptive eco-innovations (Mutisya & Yarime, 2011; Gutberlet, 2021).

Hence, EIs can be considered disruptive following ecological principles by strengthening social and institutional dimensions (Carrillo-Hermosilla et al., 2010). In turn, it generates green products (Rabal-Conesa et al., 2022) or in a nutshell, we can talk about green innovation driver (Barba-Aragón et al., 2023; see also Abbas & Khan, 2022; Marrucci et al., 2022; Shehzad et al., 2023; Jirakraisiri et al., 2021; Sheikh, 2022). This has induced a new trend of research based on green innovation, green intellectual capital, green supply chain and so on (Festa et al., 2022; Chin et al., 2023; Xi et al., 2023; Paoloni et al., 2023; Marinelli et al., 2022).

For this reason, a multi-stakeholders engagement becomes fundamental to creating disruptive EIs that empower non-institutional and no-entrepreneurial actors (such as citizens) in managing natural resources (Jiménez-Parra et al., 2018). Therefore, disruptive EIs involve all subsystems of co-evolving social, ecological, and institutional systems (Rennings, 2000).

Blockchain technology is increasingly used to create disruptive forms of EIs.

Indeed, many blockchain-related projects are changing global social, economic, and political institutions (Dierksmeier & Seele, 2020). These projects are "radical" because they want to build a new techno-economic system using blockchain technology (Swartz, 2017). These specific projects focus on the decentralization and autonomy of blockchain (Rikken et al., 2019). Therefore, it can build decentralized, nonhierarchical, autonomous self-governance systems from the bottom (Swartz, 2017). More specifically, blockchain can be used in different sectors to create these innovations.

First of all, it can be used in the energy sector. Indeed, the blockchain can strengthen energy systems management by enhancing scalability, data protection, transformation costs, market dynamics, user experience, skills, and multi-stakeholder governance (Ahl et al., 2022). Furthermore, Petri et al. (2020) show that practitioners can use blockchain for peer-to-peer energy management in energy communities. Energy communities use a multi-stakeholders model that empowers citizens to become prosumers (consumers and producers at the same). Additionally, according to Rösch et al. (2021), the blockchain can be used in off-grid innovative systems for rural development.

Secondly, the blockchain can enhance water management. Indeed, the blockchain can be used for integrative approaches to water sustainability, including water credits and trading (Parementola et al., 2021) or for different irrigation systems (Enescu et al., 2020).

Thirdly, the blockchain can improve carbon trading systems. The blockchain simplifies the blue carbon production and exchange, through peer-to-peer transactions (Hua & Sun, 2019).

Finally, blockchain can enhance waste management. A blockchain-based system can enable the financial management of garbage collection by involving different stakeholders through incentives and social cryptocurrency (França et al., 2020; Ajwani-Ramchandani et al., 2021).

### 2.2 Waste management, blockchain, and disruptive eco-innovations

The blockchain has used as a helpful technology to create new forms of waste management in developing countries, where various stakeholders, previously excluded, play a primary role.

For example, within the São Paulo state, in some municipalities, a solid waste management system was built in 2017 (França et al., 2020). The program is an innovative project that involves the low-income population in improving the quality of municipal waste management. Supported by the municipalities' Education Sector and Environment Department, and the Health Department, low-income families can exchange recyclable domestic waste (plastic, cardboard, and aluminum) for cryptocurrency at market rates. Green Coins can be purchased from local registered merchants (bakeries, supermarkets, drugstores, and grocery stores). Weekly, merchants move to the municipal government to exchange the green tokens for money. Municipalities pay the merchants when they sell garbage to businesses.

Furthermore, new forms of waste management have been tested in India. The primary goal of these projects is to improve sanitary waste management and disposal. More specifically, for the disposal of feminine hygiene products, local urban organizations, climate change activists, and NGOs are fighting to advance garbage pickers' human rights and improve local environmental conditions (Ajwani-Ramchandani et al., 2021). Following the Ostrom principles, these projects show that tackling the sanitary waste disposal problem requires a community-led strategy because of its size, scope, and sensitivity. The primary purpose is to use the blockchain to set boundaries around the resources, beneficiaries, and regulations. It is accomplished by establishing closed groups or by giving out tokens to be used as money for stakeholders that decide to participate in sanitary waste management.

Finally, alternative forms of waste management have also been implemented in China. In Changzhi, Shanxi Province, companies that own waste management plants use an integrative approach to manage agricultural and rural wastes, including crop residue and rural wastewater, to minimize waste dispersion (Zhang, 2019). Companies collect, move, and dispose of trash with the government's help, turning it into clean energy and agricultural goods, including briquettes, fertilizer, and animal feeding. However, farmers needed to be motivated to participate in the waste recovery process. Indeed, due to the lack of incentives, they needed to be motivated to support local companies in managing and recovering agricultural waste. Companies started to reward farmers' garbage collection through cryptocurrencies that can be exchanged for basic needs such as fertilizers or energy.

Therefore, the blockchain has been used to connect farmers with companies, helping them to exchange agricultural waste, energy, and by-products (such as fertilizers or feedstock).

### 2.3 Research questions

We propose three main research questions to understand to what extent the development of disruptive eco-innovation in the waste management sector supported by the blockchain brings systemic changes.

The research questions are:

R1) What new stakeholders are involved in disruptive eco-innovation in the waste management sector?

R2) What are the positive environmental effects of implementing the blockchain in the waste management sector?

R3) What social benefits can the blockchain bring to society by stimulating disruptive eco-innovations in the waste management sector?

## 3 DISRUPTIVE ECO-INNOVATION IN THE WASTE MANAGEMENT SECTOR

### 3.1 Literature summary

Projects supported by the blockchain in the waste management sector have unique characteristics compared to incremental eco-innovations, differing in terms of stakeholders involved, environmental impacts, and social implications.

Within the Brazilian projects, low-income families are directly involved in waste management (França et al., 2020). Furthermore, these projects bring several environmental benefits: encouraging new public policies for recycling solid domestic wastes and reducing solid waste in landfill, land, vacant lots, backyards, and roads (França et al., 2020).

Moreover, these projects bring two main social benefits: the improvement of municipal health indices with the decrease of cases of Dengue and Zika infections attributed to young people and children who realize the advantages of the proper use of solid waste and increased economic well-being for the most disadvantaged and stakeholder groups, which benefit from waste incentives (França et al., 2020). Instead, different stakeholders have been involved in Indian projects: Grassroots entrepreneurs, NGOs, and local communities (Ajwani-Ramchandani et al., 2021). From an environmental point of view, these projects aim to reduce waste, improve resource management, and encourage people to use less environmentally impactful products ( Ajwani-Ramchandani et al., 2021). Instead, from a social point of view, they want to promote actions that are guided by democratic, consensus-based rules involving different stakeholders in waste management processes that modify and enforce the

implementation of new practices. For this reason, the blockchain simplifies sanitary waste disposal and agreements between local urban bodies, citizen community members, and entrepreneurs to avoid conflicts. Furthermore, Indian waste management projects aspire to change society. People and cooperatives can sell sanitary waste for money, boosting the income of the most vulnerable groups. It can also encourage new business models to strengthen the relationship among territorial stakeholders and advance gender equality (Ajwani-Ramchandani et al., 2021).

Instead, farmers have been directly involved in agricultural waste management in China because of incentives provided by waste recovery companies (Zhang, 2019). From an environmental point of view, these projects improve ecosystem conditions and reduce Co2 emissions through energy recovery, by-product production, and more efficient waste recycling (Zhang, 2019). Better waste recycling also has a strong social impact. Indeed, companies that produce waste will no longer need to separate plastics from mixed residential waste and expose some workers to harmful working conditions. As farmers now separate their waste, female workers of these enterprises no longer need to separate waste. It improves health conditions since these workers are no longer exposed to toxic wastes (Zhang, 2019).

### 3.2 Conceptual framework: Disruptive eco-innovations in the waste management sector

After carefully analyzing the literature, it is possible to answer our research questions by emphasizing the main aspects of disruptive eco-innovations in the waste management sector thanks to a co-evolutionary approach involving institutional, environmental, and social systems (see Figure 1).
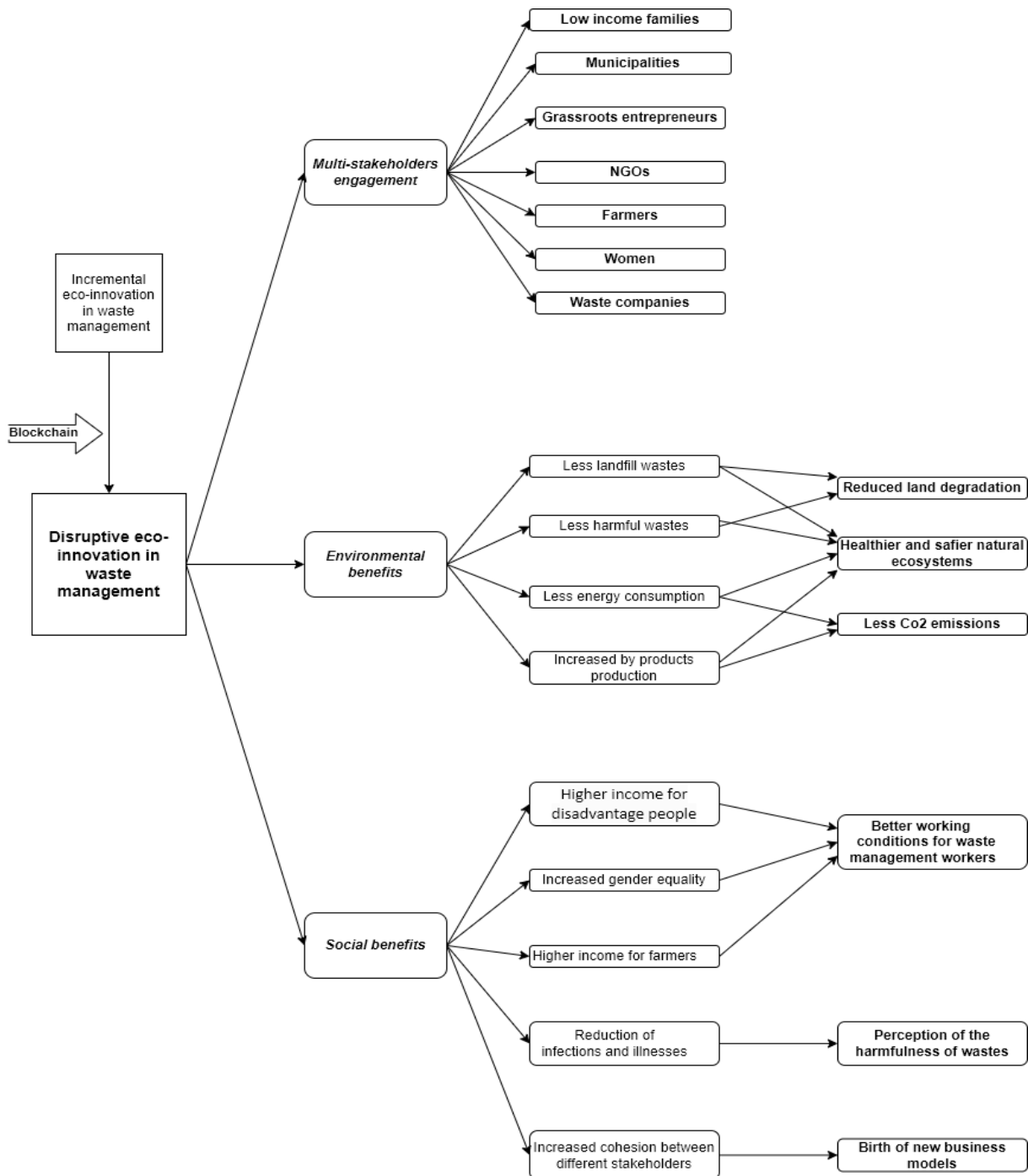
Figure 1: Disruptive eco-innovation in the waste management sector

### 3.2.1 New stakeholders involved in disruptive forms of eco-innovations

The blockchain allows the involvement of new stakeholders in the waste management sector. This technology has been used to include low-income families in waste management in Brazil (França et al., 2020). Instead, in Indian projects, different stakeholders, grassroots entrepreneurs, NGOs, and local communities participate in waste recovery processes (Ajwani-Ramchandani et al., 2021). From this perspective, we show that the blockchain can support a multi-stakeholder waste management model

in which different stakeholders can benefit (given the economic value of waste) (França et al., 2020; Ajwani-Ramchandani et al., 2021; Zhang, 2019). Additionally, these projects promote actions guided by democratic rules based on consensus where all parties can actively participate by changing the role of institutions. Indeed, The blockchain simplifies agreements between businesses, community members, and local authorities to optimize waste management and avoid conflicts (França et al., 2020; Ajwani-Ramchandani et al., 2021). Furthermore, the blockchain can expand the supply chain of specific sectors. For instance, food producers can be involved in waste management, exchanging garbage and waste for energy sources, by-products, or tokens (Zhang, 2019).

### 3.2.2 Positive environmental effects of forms of waste management

The blockchain brings environmental benefits through new organizational forms of waste management. Indeed, blockchain projects increase citizens' awareness regarding the advantages of recycling. For this reason, people reduce the amount of household waste through recycling processes by decreasing the amount of trash destined for landfill (França et al., 2020). Additionally, the blockchain can optimize the management of specific hazardous wastes. For example, the blockchain improves the management, disposal, and reuse of medical and organic wastes (Ajwani-Ramchandani et al., 2021; Zhang, 2019). For this reason, ecosystems are safeguarded, and improve soil quality because hazardous wastes no longer go into landfills. Furthermore, the blockchain helps to transform wastes into energy or by-products. Therefore, this technology can also improve air quality by reducing $CO_2$ emissions thanks to waste energy recovery and the creation of products from wastes (Zhang, 2019).

### 3.2.3 Social implications of Disruptive eco-innovations in the waste management sector

 Blockchain in the waste management sector can bring systemic changes and several social benefits. Indeed, the increased perception of the effects of the harmfulness of waste, especially by children, teenagers, and disadvantaged groups, reduced infections and diseases such as Zika (França et al., 2020). Furthermore, the blockchain has strengthened territorial cohesion between various stakeholders (França et al., 2020; Zhang, 2019) and has promoted gender equality by accepting and normalizing women's healthcare products (Ajwani-Ramchandani et al., 2021). Moreover, the blockchain has improved workers' working and health conditions (Zhang, 2019).

Finally, the use of blockchain has increased the economic condition of various stakeholders. Indeed, low-income people and women specializing in waste collection benefit from tokens valid for buying basic needs, while cooperatives and local populations have an additional source of income (França et al., 2020; Ajwani-Ramchandani et al., 2021), and farmers benefit from exchanging wastes with energy or by-products (Zhang, 2019).

## 4 THEORETICAL AND MANAGERIAL CONTRIBUTIONS

### 4.1 Theoretical contributions

This paper brings original contributions to the current debate concerning the role of blockchain in implementing disruptive eco-innovations.

The blockchain can change the quality of ecosystems by optimizing waste management and can bring economic and social benefits to different stakeholders involved in waste management processes (Zhang, 2019; França et al., 2020; Ajwani-Ramchandani et al., 2021). For this reason, we contribute to the eco-innovations field, offering a conceptual framework since no previous research afforded this topic from a conceptual perspective. Indeed, we show how the blockchain can optimize waste resources management, creating a co-evolutionary environment for disruptive eco-innovations in the waste management sector ( Zhang, 2019; França et al., 2020; Ajwani-Ramchandani et al., 2021).

Second, this paper also contributes to the field of disruptive innovations. The blockchain can disrupt forms of eco-innovation by creating new sustainable business models (Wang et al., 2022).

Third, this research contributes to the ecological economics field. The blockchain can optimize natural resources management by integrating social, environmental, and economic factors (Upadhyay et al., 2021)

Fourth, this paper contributes to the literature on innovation management, demonstrating how the blockchain can support new organizational forms. Indeed, entrepreneurs and citizens can use the blockchain to create decentralized organizations without a hierarchical structure in the waste management sector (Balaguer Rasillo, 2021).

Finally, our paper brings a contribution to the field of development studies. The blockchain can help to achieve sustainable development by supporting the creation of disruptive eco-innovation in developing countries that involve people at the bottom of the pyramid to improve environmental and social well-being (Bai et al., 2021).

### 4.2 Managerial contributions

Our research provides some interesting managerial contributions. First, we show as the blockchain can spur new organizational forms of waste management where different stakeholders play a predominant role. For this reason, this study wants to show different applications of disruptive EIs in the waste management sector to motivate more and more citizens, entrepreneurs, and governments to collaborate to create new business models that include the most disadvantaged stakeholders. For this reason, this study has policy implications since, for spurring disruptive EIs, institutions should intervene to support the implementation of new projects. Indeed, not only is it necessary to create laws that allow using the blockchain in a specific context according to this perspective, but it is also necessary for institutions to provide incentives to involve various stakeholders in waste management

projects. For this reason, given the specific characteristics of these innovative processes compared to classic business models, governments must stimulate the creation of disruptive EIs by creating socio-technical niches (Geels, 2018).

Finally, this study aims to give greater prominence to projects still in the testing phases but with significant social and environmental implications. Therefore, we want to spur the creation of ad hoc programs within governmental institutions (such as, for example, the EU and the World Bank) that can simplify the creation of disruptive EIs through ad hoc laws and incentives.

## 5 CONCLUSIONS AND LIMITATIONS

Through a conceptual framework, we have shown how the blockchain plays a primary role in spurring disruptive eco-innovation in the waste management sector, bringing well-being to the most disadvantaged groups (Zhang, 2019; França et al., 2020). According to our analysis, the blockchain can involve new actors, redistribute revenues, improve hygienic conditions, improve social cohesion between the different actors, improve conditions of natural ecosystems, and improve the sustainability of developing countries.

Nevertheless, our study has several limitations. First, we have only implemented theoretical research. For this reason, it will be necessary to deepen and extend this paper as soon as possible, analyzing specific case studies in which different stakeholders are interviewed to understand the impacts of these projects and how are involved the different stakeholders.

Secondly, researchers will also have to analyze other sectors, such as the energy sector (Gibellato et al., 2022), to understand to what extent the implications of this study can be related to other sectors to understand if the blockchain plays a role in the creation of disruptive EIs in different sectors.

Finally, this study did not consider the various negative aspects of using the blockchain. Indeed, this technology has several limitations both from an environmental point of view (the blockchain consumes a high quantity of energy), from an economic point (the blockchain has strong economic fluctuations), and from the institutional point of view because, in some countries, the blockchain cannot be used (Wang et al., 2021). Additionally, this research can be supported by the development of multiple case studies (Umar et al., 2021; Iaia et al., 2023; de Vasconcelos et al., 2021; Li et al., 2022; Hujala & Laihonen, 2021; Bhardwaj et al.,2023; Jabeen et al., 2023) that can offer an in depth vision of the situation (Amoozad et al., 2022; Caputo et al., 2023; Ashok et al., 2021).

Concluding, future researchers should understand if the blockchain is the most suitable technology for spurring disruptive EIs or if there are alternatives that could be more efficient from the point of view of sustainability.

## REFERENCES

Abbas, J., & Khan, S. M. (2022). Green knowledge management and organizational green culture: an interaction for organizational green innovation and green performance. Journal of Knowledge Management. https://doi.org/10.1108/JKM-03-2022-0156

Adika, G. (2020). Economic growth dynamics between resource-rich and resource-poor countries in sub-Saharan Africa: The role of politics and institutions. African Development Review, 32(3), 303-315.

Ahl, A., Goto, M., Yarime, M., Tanaka, K., & Sagawa, D. (2022). Challenges and opportunities of blockchain energy applications: Interrelatedness among technological, economic, social, environmental, and institutional dimensions. Renewable and Sustainable Energy Reviews, 166, 112623.

Ajwani-Ramchandani, R., Figueira, S., de Oliveira, R. T., Jha, S., Ramchandani, A., & Schuricht, L. (2021). Towards a circular economy for packaging waste by using new technologies: The case of large multinationals in emerging economies. Journal of Cleaner Production, 281, 125139.

Aldieri, L., Gatto, A., & Vinci, C. P. (2022). Is there any room for renewable energy innovation in developing and transition economies? Data envelopment analysis of energy behaviour and resilience data. Resources, Conservation and Recycling, 186, 106587.

Amoozad Mahdiraji, H., Beheshti, M., Jafari-Sadeghi, V., & Garcia-Perez, A. (2022). What drives inter-organisational knowledge management? The cause and effect analysis using a multi-layer multi-criteria decision-making framework. Journal of Knowledge Management, 26(9), 2195-2221.

Ashok, M., Al Badi Al Dhaheri, M. S. M., Madan, R., & Dzandu, M. D. (2021). How to counter organisational inertia to enable knowledge management practices adoption in public sector organisations. Journal of Knowledge Management, 25(9), 2245-2273.

Bai, C. A., Cordeiro, J., & Sarkis, J. (2020). Blockchain technology: Business, strategy, the environment, and sustainability. Business Strategy and the Environment, 29(1), 321-322.

Balaguer Rasillo, X. (2021). Alternative economies, digital innovation and commoning in grassroots organisations: Analysing degrowth currencies in the Spanish region of Catalonia. Environmental Policy and Governance, 31(3), 175-185.

Barba-Aragón, M. I., & Jiménez-Jiménez, D. (2023). Is training a green innovation driver? The mediating role of knowledge acquisition. Journal of Knowledge Management. https://doi.org/10.1108/JKM-10-2022-0818

Beckert, S., Bosma, U., Schneider, M., & Vanhaute, E. (2021). Commodity frontiers and the transformation of the global countryside: a research agenda. Journal of Global History, 16(3), 435-450.

Bhardwaj, R., Srivastava, S., Mishra, H. G., & Sangwan, S. (2023). Exploring micro-foundations of knowledge-based dynamic capabilities in social purpose organizations. Journal of Knowledge Management, 27(4), 1016-1041.

Bracci, E., Tallaki, M., Ievoli, R., & Diplotti, S. (2022). Knowledge, diffusion and interest in blockchain technology in SMEs. Journal of Knowledge Management, 26(5), 1386-1407.

Caputo, F., Keller, B., Möhring, M., Carrubbo, L., & Schmidt, R. (2023). Advancing beyond technicism when managing big data in companies' decision-making. Journal of Knowledge Management. https://doi.org/10.1108/JKM-10-2022-0794

Carrillo-Hermosilla, J., Del Río, P., & Könnölä, T. (2010). Diversity of eco-innovations: Reflections from selected case studies. Journal of Cleaner Production, 18(10), 1073-1083.

Chaminade, C. (2020). Innovation for what? Unpacking the role of innovation for weak and strong sustainability. Journal of Sustainability Research, 2(1), 1-16.

Chin, T., Del Giudice, M., Di Vaio, A., Fiano, F., Garcia-Perez, A., Paoloni, N., & Magni, D. (2023). Guest editorial: Unveiling the roles of intellectual capital in entrepreneurial ecosystems: evidence from moderate innovative countries. Journal of Intellectual Capital, 24(1), 1-9.

Danneels, E. (2004). Disruptive technology reconsidered: A critique and research agenda. Journal of product innovation management, 21(4), 246-258.

De Jesus, A., Antunes, P., Santos, R., & Mendonça, S. (2019). Eco-innovation pathways to a circular economy: Envisioning priorities through a Delphi approach. Journal of Cleaner Production, 228, 1494-1513.

de Vasconcelos Gomes, L. A., de Faria, A. M., Borini, F. M., Chaparro, X. A. F., Dos Santos, M. G., & Amaral, G. S. G. (2021). Dispersed knowledge management in ecosystems. Journal of Knowledge Management, 25(4), 796-825.

Dierksmeier, C., & Seele, P. (2020). Blockchain and business ethics. Business Ethics: A European Review, 29(2), 348-359.

Dogaru, L. (2020). Eco-innovation and the contribution of companies to sustainable development. Procedia Manufacturing, 46, 294-298.

Durán-Romero, G., López, A. M., Beliaeva, T., Ferasso, M., Garonne, C., & Jones, P. (2020). Bridging the gap between circular economy and climate change mitigation policies through eco-innovations and the Quintuple Helix Model. Technological Forecasting and Social Change, 160, 120246.

Enescu, F. M., Bizon, N., Onu, A., Răboacă, M. S., Thounthong, P., Mazare, A. G., & Şerban, G. (2020). Implementing blockchain technology in irrigation systems that integrate photovoltaic energy generation systems. Sustainability, 14(4), 1540.

Gowdy, J., & Erickson, J. D. (2005). The approach of ecological economics. Cambridge Journal of Economics, 29(2), 207-222.

Fernández, S., Torrecillas, C., & Labra, R. E. (2021). Drivers of eco-innovation in developing countries: the case of Chilean firms. Technological Forecasting and Social Change, 170, 120902.

Festa, G., Elbahri, S., Cuomo, M. T., Ossorio, M., & Rossi, M. (2022). FinTech ecosystem as influencer of young entrepreneurial intentions: empirical findings from Tunisia. Journal of Intellectual Capital, 24(1), 205-226.

França, A. S. L., Neto, J. A., Gonçalves, R. F., & Almeida, C. M. V. B. (2020). Proposing the use of blockchain to improve the solid waste management in small municipalities. Journal of Cleaner Production, 244, 118529.

Geels, F. W. (2018). Disruption and low-carbon system transformation: Progress and new challenges in socio-technical transitions research and the Multi-Level Perspective. Energy Research & Social Science, 37, 224-231.

Genovese, A., & Pansera, M. (2021). The circular economy at a crossroads: technocratic eco-modernism or convivial technology for social revolution? Capitalism Nature Socialism, 32(2), 95-113.

George, G., Merrill, R. K., & Schillebeeckx, S. J. (2021). Digital sustainability and entrepreneurship: How digital innovations are helping tackle climate change and sustainable development. Entrepreneurship Theory and Practice, 45(5), 999-1027.

Gibellato, S., Ballestra, L. V., Fiano, F., Graziano, D., & Gregori, G. L. (2023). The impact of education on the Energy Trilemma Index: A sustainable innovativeness perspective for resilient energy systems. Applied Energy, 330, 120352.

Gibellato, S., Iaia, L., Fiano, F., & Usai, A. (2022). Renewable energy communities and Degrowth: participative governance for energy management. In 2022 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD), pp. 1-8, IEEE.

Gutberlet, J. (2021). Grassroots waste picker organizations addressing the UN sustainable development goals. World Development, 138, 105195.

Hafeez, M., Rehman, S. U., Faisal, C. N., Yang, J., Ullah, S., Kaium, M. A., & Malik, M. Y. (2022). Financial efficiency and its impact on renewable energy demand and CO2 emissions: do eco-innovations matter for highly polluted Asian economies? Sustainability, 14(17), 10950.

Hazarika, N., & Zhang, X. (2019). Evolving theories of eco-innovation: A systematic review. Sustainable Production and Consumption, 19, 64-78.

Hua, W., & Sun, H. (2019). A blockchain-based peer-to-peer trading scheme coupling energy and carbon markets. In 2019 International Conference on Smart Energy Systems and Technologies, pp. 1-6, IEEE.

Hujala, T., & Laihonen, H. (2021). Effects of knowledge management on the management of health and social care: a systematic literature review. Journal of Knowledge Management, 25(11), 203-221.

Iaia, L., Nespoli, C., Vicentini, F., Pironti, M., & Genovino, C. (2023). Supporting the implementation of AI in business communication: the role of knowledge management. Journal of Knowledge Management (ahead-of-print).

Jabeen, F., Belas, J., Santoro, G., & Alam, G. M. (2023). The role of open innovation in fostering SMEs' business model innovation during the COVID-19 pandemic. Journal of knowledge management, 27(6), 1562-1582.

Jiménez-Parra, B., Alonso-Martínez, D., & Godos-Díez, J. L. (2018). The influence of corporate social responsibility on air pollution: Analysis of environmental regulation and eco-innovation effects. Corporate Social Responsibility and Environmental Management, 25(6), 1363-1375.

Jirakraisiri, J., Badir, Y. F., & Frank, B. (2021). Translating green strategic intent into green process innovation performance: the role of green intellectual capital. Journal of Intellectual Capital, 22(7), 43-67.

Kouhizadeh, M., Zhu, Q., & Sarkis, J. (2020). Blockchain and the circular economy: potential tensions and critical reflections from practice. Production Planning & Control, 31(11), 950-966.

Li, H., Yang, Z., Jin, C., & Wang, J. (2023). How an industrial internet platform empowers the digital transformation of SMEs: theoretical mechanism and business model. Journal of Knowledge Management, 27(1), 105-120.

Li, H., Hu, Q., Zhao, G., & Li, B. (2022). The co-evolution of knowledge management and business model transformation in the post-COVID-19 era: insights based on Chinese e-commerce companies. Journal of Knowledge Management, 26(5), 1113-1123.

Martínez-Martínez, A., Cegarra-Navarro, J. G., Garcia-Perez, A., & De Valon, T. (2022). Active listening to customers: eco-innovation through value co-creation in the textile industry. Journal of Knowledge Management. https://doi.org/10.1108/JKM-04-2022-0309

Marrucci, L., Daddi, T., & Iraldo, F. (2022). The circular economy, environmental performance and environmental management systems: the role of absorptive capacity. Journal of Knowledge Management, 26(8), 2107-2132.

Mutisya, E., & Yarime, M. (2011). Understanding the grassroots dynamics of slums in Nairobi: the dilemma of Kibera informal settlements. Int Trans J Eng Manag Appl Sci Technol, 2(2), 197-213.

Nair, R., Gupta, S., Soni, M., Shukla, P. K., & Dhiman, G. (2020). An approach to minimize the energy consumption during blockchain transaction. Materials Today: Proceedings.

Notteboom, T., Pallis, T., & Rodrigue, J. P. (2021). Disruptions and resilience in global container shipping and ports: the COVID-19 pandemic versus the 2008–2009 financial crisis. Maritime Economics & Logistics, 23(2), 179-210.

Marinelli, L., Bartoloni, S., Pascucci, F., Gregori, G. L., & Briamonte, M. F. (2022). Genesis of an innovation-based entrepreneurial ecosystem: exploring the role of intellectual capital. Journal of Intellectual Capital, 24(1), 10-34.

Obaya, M., López, A., & Pascuini, P. (2021). Curb your enthusiasm. Challenges to the development of lithium-based linkages in Argentina. Resources policy, 70, 101912.

Paoloni, P., Cosentino, A., Arduini, S., & della Corte, G. (2023). Influencing social enterprise resilience by intellectual capital and the contribution of female leadership: insights from the Italian context. Journal of Intellectual Capital.

Parmentola, A., Petrillo, A., Tutore, I., & De Felice, F. (2022). Is blockchain able to enhance environmental sustainability? A systematic review and research agenda from the perspective of Sustainable Development Goals (SDGs). Business Strategy and the Environment, 31(1), 194-217.

Patterson, J. J. (2020). Remaking Political Institutions: Climate Change and Beyond. Cambridge University Press.

Petri, I., Barati, M., Rezgui, Y., & Rana, O. F. (2020). Blockchain for energy sharing and trading in distributed prosumer communities. Computers in Industry, 123, 103282.

Pham, C. M., Lokuge, S., Nguyen, T. T., & Adamopoulos, A. (2023). Exploring knowledge management enablers for blockchain-enabled food supply chain implementations. Journal of Knowledge Management.

Rabal-Conesa, J., Jiménez-Jiménez, D., & Martínez-Costa, M. (2022). Organisational agility, environmental knowledge and green product success. Journal of Knowledge Management, 26(9), 2440-2462.

Rennings, K. (2000). Redefining innovation—eco-innovation research and the contribution from ecological economics. Ecological economics, 32(2), 319-332.

Rikken, O., Janssen, M., & Kwee, Z. (2019). Governance challenges of blockchain and decentralized autonomous organizations. Information Polity, 24(4), 397-417.

Rodríguez-Rebés, L., Navio-Marco, J., & Ibar-Alonso, R. (2021). Influence of organisational innovation and innovation in general on eco-innovation in European companies. Journal of Intellectual Capital, 22(5), 840-867.

Rösch, T., Treffinger, P., & Koch, B. (2021). Regional Flexibility Markets—Solutions to the European Energy Distribution Grid—A Systematic Review and Research Agenda. Energies, 14(9), 2403.

Saratchandra, M., & Shrestha, A. (2022). The role of cloud computing in knowledge management for small and medium enterprises: a systematic literature review. Journal of Knowledge Management, 26(10), 2668-2698.

Seyfang, G., & Smith, A. (2007). Grassroots innovations for sustainable development: Towards a new research and policy agenda. Environmental politics, 16(4), 584-603.

Shehzad, M. U., Zhang, J., Dost, M., Ahmad, M. S., & Alam, S. (2023). Linking green intellectual capital, ambidextrous green innovation and firms green performance: evidence from Pakistani manufacturing firms. Journal of Intellectual Capital, 24(4), 974-1001.

Sheikh, A. M. (2022). Green intellectual capital and social innovation: the nexus. Journal of Intellectual Capital, 23(6), 1199-1220.

Swartz, L. (2017). Blockchain dreams: Imagining techno-economic alternatives after Bitcoin. In Another economy is possible: Culture and economy in a time of crisis, Chapter 4.

Tong, S., & Ebi, K. (2019). Preventing and mitigating health risks of climate change. Environmental research, 174, 9-13.

Ul-Durar, S., Awan, U., Varma, A., Memon, S., & Mention, A. L. (2023). Integrating knowledge management and orientation dynamics for organization transition from eco-innovation to circular economy. Journal of Knowledge Management.

Umar, M., Wilson, M., & Heyl, J. (2021). The structure of knowledge management in inter-organizational exchanges for resilient supply chains. Journal of Knowledge Management, 25(4), 826-846.

Upadhyay, A., Mukhuty, S., Kumar, V., & Kazancoglu, Y. (2021). Blockchain technology and the circular economy: Implications for sustainability and social responsibility. Journal of Cleaner Production, 293, 126130.

Vence, X., & Pereira, Á. (2019). Eco-innovation and Circular Business Models as drivers for a circular economy. Contaduría y administración, 64(1), 1-7.

Wang, H., Masi, D., Dhamotharan, L., Day, S., Kumar, A., Li, T., & Singh, G. (2022). Unconventional path dependence: How adopting product take-back and recycling systems contributes to future eco-innovations. Journal of Business Research, 142, 707-717.

Yülek, M. A., & Santos, G. (2022). Why Income Gaps Persist: Productivity Gaps, (No-) Catch-up and Industrial Policies in Developing Countries. Journal of Economic Issues, 56(1), 158-183.

Xi, M., Fang, W., & Feng, T. (2023). Green intellectual capital and green supply chain integration: The mediating role of supply chain transformational leadership. Journal of Intellectual Capital, 24(4), 877-899.

Zhang, D. (2019). Application of blockchain technology in incentivizing efficient use of rural wastes: a case study on yitong system. Energy Procedia, 158, 6707-6714

# INTELLECTUAL CAPITAL AS A LENS FOR IMPROVED HEALTHCARE PERFORMANCE: A STRUCTURED REVIEW OF THE LITERATURE

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## ABSTRACT

Intangible resources gain relevant importance in healthcare organizations, especially when there is a need to improve performance. While a large stream of research exists in knowledge-intensive industries, the role of intellectual capital in improving performance of healthcare organizations has gained more attention only in the last years. This article is an investigation of the existing literature on healthcare performance through the lens of intellectual capital. A total of 30 articles were reviewed with the aim to understand how literature is evolving, what are the most researched components and what are the limits of extant research in providing a comprehensive understanding of the topic. Descriptive and content analysis of the articles revealed a growing trend of publication in the last years, while the geographical distribution of publications revealed Italy as the dominant country for contributions in the domain. Moreover, a classification of research in clusters according to the topic investigation, revealed nine possible clusters in extant research, where two of the clusters consist of detached themes and basically are related to patient-centred care and professional incompetence. This study shows how intellectual capital has evolved from skill-focused investigations to patient-centred care, sustainable health, and innovative technologies, while it provides insights for managers to improve healthcare organizations' performance by prioritizing specific components of intellectual capital. Overall, intellectual capital is an important tool for enhanced performance, and an outcome-oriented approach may help organizations gain benefits such as value creation, improved end user satisfaction, maximization of competitive advantage and much more.

*Keywords: intellectual capital, performance, healthcare, literature review*

## INTRODUCTION

The aim of this study is the investigation of evolution of research on intellectual capital and its main components: human competencies, structural capital, and relational capital, in the healthcare context,

when considering the need for improved performance. The healthcare services are continuously facing pressures to improve performance, to meet the changing needs of populations, to adhere to financial restrictions and allocated budgets, as well as to increase quality and efficiency of patient care while keeping costs down (Hewko & Cummings, 2016). The system of healthcare services is a very complex and specific system for the nature itself of the final product it offers: the health of the individual. As such a system, constructed to fulfill the need of "a good health", we should outline that healthcare providers need to ensure "a good performance" of the care provided to customers, that in our context are the patients. Intangible resources are of relevant importance when considering the need to improve performance of healthcare organizations (Carlucci & Schiuma, 2012). Several performance indicators have been used to measure the healthcare performance, starting from financial indicators focusing at cost per patient care, profit contribution and earnings of a healthcare provider, to quality indicators which for a long time were focused on patient satisfaction as the main indicator of quality of care, and finally institutional indicators developed and controlled from the state apparatus such as mortality rates, bed occupation rates, days of hospitalization, etc.

Despite the large number of indicators developed in the field, the last decades have seen an increased interest to the intangible assets and their influence in the performance of any organization. The intellectual capital (IC) is one of the intangible assets of an organization and its components defined as "*human competencies*, the knowledge embedded in people; *structural capital*, the knowledge embedded in the organization and its systems; and *relational capital*, the knowledge embedded in customers and other relationships external to the organization" (Guthrie, Ricceri and Dumay, 2012, p. 70), can be of interest when assessing performance. IC includes forms of intellectual property, know-how, skill, information systems and much more. For a long time, performance evaluations of different industries have missed in considering the intellectual capital (Chang, Hung and Huang, 2013), since for long it was not relevant to the financial analysis of the organizations. It is only recently that intellectual capital has gained increased attention, giving rise to the disclosure of IC. Moreover, research has suggested that knowledge intensive services such as healthcare can experience specific improved performance outcomes if they enhance their intellectual capital (Evans, Brown and Baker, 2015). Even though there is a known importance to intellectual capital in the surviving of organizations in a competitive arena as well as an important role to the innovation process, there is still scarce research in terms of intellectual capital and its disclosure in a number of countries (Nikolaj Bukh, 2003; Castelo Branco *et al.,* 2010; Al-Khatib, 2022).

The topic is very fragmented and surrounded with confusion when related to prioritizing IC characterized by diverse conceptualizations with a focus on metrics and limited empirical evidence. Thus, it calls for a more comprehensive understanding and the synthetizing of extant research from

which future investigations can be recommended, instead of crafting the same old topics. Several researchers have identified the lack of a comprehensive understanding of the intellectual capital and the role it plays in the value creation process (Dameri and Ferrando, 2021), and report highly heterogenous results and contradictory findings when related to performance outcomes (Pflugfelder, 2021).

Performance is considered one of the strategic objectives of an organization, and with this study we aim to understand the most researched mechanisms through which IC can influence the performance of a healthcare organization. Moreover, the findings of this study will help to understand the evolution of the topic within the domain and address a research agenda for the future. Thus, the following research questions guided this study:

RQ1. How is literature on healthcare performance evolving through the intellectual capital lens?

RQ2. What are the most researched mechanisms and/or components through which intellectual capital is researched in terms of healthcare organizations performance?

RQ3. What are the limits and future trends within the domain?

The paper is structured as follows. In the following section the research methods are presented. Following, the analysis of data and results of the study are developed, where the two first research questions (RQ1 and RQ2) find answer. Section four reports limitations and future research avenues, answering the third research question (RQ3). As final to this research conclusions and implications for theory and practice are provided.

## METHODS

Considering the main aim of this study deriving from the need to develop a more comprehensive understanding of the intellectual capital for improved performance in the healthcare context, the decision of running a structured review fits the purpose of the latter. The interest in literature review is growing due to the importance of synthetizing abundant information consisting of diverse views or lacking a common consensus among researchers (Ferrari, 2015).

The databases of Scopus, EBSCO and Web of Science were searched using a combination of terms such as "performance", "intellectual capital", and "healthcare". The combination of keywords was searched in the title, abstract and keywords. This step provided a total of 146 results considering all the three datasets (respectively 35 results from EBSCO, 85 results from Scopus, and 26 results from Web of Science). Next a set of inclusion and exclusion criteria was applied to the extraction of articles. The search in EBSCO and Web of Science was limited to research articles, published in academic peer-reviewed journals, and published in English language, while the search on Scopus was limited to research articles in the business, management, and accounting area and English language. In this step

from all the results, 69 articles were eligible according to these criteria. From the 69 results, only articles published in ABS ranked journals (1, 2, 3, 4, 4* journals) were considered. This is done to ensure the quality of the articles in the sample as journals included in the ABS ranking prove to be of high rigor and quality.  Therefore, the results were further restricted to a total of 39 articles in this step. No restriction to a specific time-period was considered as the aim is to capture the full evolution of the debate from the very beginning, when the concept was initially introduced in healthcare performance research. After the search and the inclusion and exclusion criteria application, to assess the relevance of the 39 articles, full text reading was considered. In this step a check for duplicates was also performed. 9 articles were excluded, leaving a total of 30 articles in our final sample, to be considered for further analysis. The small sample of articles is a first insight that an integration of the intellectual capital perspective to the management of performance in the healthcare context is still at its early stages, with the focus in measuring, managing, and reporting for external parties and lacks a multi-focused approach of integration, which less than a decade ago was also found for other organizations than the ones in the healthcare industry (Dumay, Guthrie and Rooney, 2020). The flow chart of the search strategy is reported in figure 1.

## DATA ANALYSIS AND RESULTS

*Literature evolution*

From the analysis of articles in this sample, considering the adoption of our eligibility criteria, we find that 28 articles have been published on the topic in an eighteen-year period (2004-2022); this may be attributable to the growing attention on intellectual capital for the improvement of healthcare performance in the recent years. It is important to note that even though no time restriction was introduced to the article's selection process, the first studies in the sample account to the year 2004, experiencing several up and downs in the number of publications during years, to reach a peak in year 2020 (N=7) (see Table 1). This enforces the idea that intellectual capital is still considered a relatively new concept and literature lacks evidence on intellectual capital value for healthcare organization, as previous research suggests (Cavicchi, 2017). Up to 51% of the articles have been published over the last 6 years (2017-2022) and evidence of the growing interest is also the special issue on intellectual capital in healthcare organizations published in Journal of Intellectual Capital in 2021 (Schiavone et al., 2021), where a number of relevant articles where published on the topic.

```
┌─────────────────────────────┐
│ Search terms:               │
│ "intellectual capital" AND  │
│ 'healthcare" AND "performance"│
│ Database results:           │
│ Ebsco 35 results            │
│ SCOPUS 85 results           │
│ Web of Science 26 results   │
│ Total yields: 146           │
└─────────────────────────────┘
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Research articles published in academic peer-reviewed journals in English language/ extracted from the sample articles that do not fit this criteria (n=77)

Articles identified after the application of inclusion criteria: (**n=69 articles**)

Articles excluded based on publication in journal not ABS ranked (n=30)

Articles identified after the application of exclusion criteria: (**n=39 articles**)

Articles excluded based on full text reading and duplicates (n=9)

Final sample: (**n=30 articles**)

Figure 1. *Flow chart of search strategy*

In terms of publication outlet, *Journal of Intellectual Capital* is the main host journal for papers on the reviewed topic, with 11 articles (29%), followed by *International Journal of Learning and Intellectual Capital, International Journal of Technology Management*, *International Journal of Public Sector Management* and *Measuring Business Excellence* each with 2 articles published on the topic, whereas the remaining journals have one article publication each (see Table 1). As it is obvious, the four main host journals (*Journal of Intellectual Capital, International Journal of Learning and Intellectual Capital, International Journal of Technology Management, International Journal of Public Sector Management* and *Measuring Business Excellence*) account for more than 63% of the research publication.

| Publication trend over years / Journals | 2004 | 2007 | 2008 | 2009 | 2011 | 2012 | 2013 | 2015 | 2016 | 2017 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Business Horizons | | 1 | | | | | | | | | | | | | 1 |
| Computers in Industry | | | | | | | | | | | | 1 | | | 1 |
| Int. J. of Learning and Intellectual Capital | | | 1 | | | | | 1 | | | | | | | 2 |
| Int. J. of Engineering Business Management | | | | | | 1 | | | | | | | | | 1 |
| Int. J. of Human Resource Management | | | | 1 | | | | | | | | | | | 1 |
| Int. J. of Public Sector Management | | | | | | | | | | | | 1 | | 1 | 2 |
| Int. J. of Technology Management | | | | 2 | | | | | | | | | | | 2 |
| Irish Journal of Management | 1 | | | | | | | | | | | | | | 1 |
| Journal of Business Research | | | | | | | | | | | | | | 1 | 1 |
| Journal of Cleaner Production | | | | | | | | | | 1 | | | | | 1 |
| Journal of Intellectual Capital | | 1 | | | | | | | 1 | 1 | | 4 | 4 | | 11 |
| Knowledge Management Research and Practice | | | | | 1 | | | | | | | | | | 1 |
| Measuring Business Excellence | | | | | | 1 | | | | | 1 | | | | 2 |
| Service Industries Journal | | | | | | | 1 | | | | | | | | 1 |
| Technological Forecasting and Social Change | | | | | | | | | | | | | | 1 | 1 |
| TQM Journal | | | | | | | | | | | | 1 | | | 1 |
| **Total** | 1 | 2 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 7 | 4 | 3 | 30 |

Table 1. *Publication trend over the years*

Other important patterns in mapping extant research are the geographical distribution of publications (see Table 2) and the authorship characteristics (see Table 3). It gives important insights to understand the most influencing countries on the discipline, as well as helps investigate the geographical outreach of publication outlets (Boulos, 2005). While regarding the authorship characteristics, they are increasingly important to understand the research teams, and the development of collaborations within the same institution or different institutions.

| First author's geographical location | No. of articles |
|---|---|
| Italy | 14 |
| China | 3 |
| India | 2 |
| Finland | 2 |
| Poland | 2 |
| Australia | 1 |
| Canada | 1 |
| Germany | 1 |
| Greece | 1 |
| Iraq | 1 |
| UK | 1 |
| USA | 1 |
| Total | 30 |

Table 2. *Geographical distribution of publications*

A further investigation is related to the most impactful publications in the domain based on the times that the articles were cited. The citation number was extracted from Google Scholar for all the articles included in the sample (see Table 3). Analysis based on citations is commonly applied as a measurement tool of manuscript quality, and the citations of a study are important to understand the accumulation of knowledge (Crossan and Apaydin, 2010).

| Studies | Citations | Publication details |
|---|---|---|
| (Yang and Lin, 2009) | 425 | Yang, C. C. and Lin, C. Y. Y. (2009) 'Does intellectual capital mediate the relationship between HRM and organizational performance? Perspective of a healthcare industry in Taiwan', International Journal of Human Resource Management, 20(9), pp. 1965–1984. doi: 10.1080/09585190903142415. |
| (Tandon et al., 2020) | 207 | Tandon, A. et al. (2020) 'Blockchain in healthcare: A systematic literature review, synthesizing framework and future research agenda', Computers in Industry, 122. doi: 10.1016/j.compind.2020.103290. |
| (Peng, Pike and Roos, 2007) | 205 | Peng, T. J. A., Pike, S. and Roos, G. (2007) 'Intellectual capital and performance indicators: Taiwanese healthcare sector', Journal of Intellectual Capital, 8(3), pp. 538–556. doi: 10.1108/14691930710774902. |
| (Perrott, 2007) | 173 | Perrott, B. E. (2007) 'A strategic risk approach to knowledge management', Business Horizons, 50(6), pp. 523–533. doi: 10.1016/j.bushor.2007.08.002. |
| (Radaelli et al., 2011) | 107 | Radaelli, G. et al. (2011) 'Intellectual capital and knowledge sharing: The mediating role of organisational knowledge-sharing climate', Knowledge Management Research and Practice, 9(4), pp. 342–352. doi: 10.1057/kmrp.2011.29. |

Table 3. *Most prominent citations*

Table 3 represents the five most cited articles in the sample that are authored by Yang and Lin (2009), (Citations, 425); Tandon *et al.* (2020), (Citations, 207); Peng, Pike and Roos (2007), (Citations, 205); Perrott (2007), (Citations, 173); Radaelli *et al.* (2011), (Citations, 107).

Going through the narratives of these articles, the first article explores the relationship that exists between human resource management and organizational performance in a healthcare setting. Authors investigate the role that intellectual capital plays in this relationship and find that "the three components of intellectual capital, namely, human capital, relational capital, and organizational capital, mediate the relationship between HRM practices and organizational performance" (Yang and Lin, 2009, p. 1965). The second most cited article focuses on only one of the intellectual capital components, particularly structural capital, and synthetizes research on blockchain technology in a

healthcare organization context for the improvement of healthcare processes (Tandon *et al.*, 2020). The next article, investigates "the critical intellectual capital elements and performance indicators regarded as important for performance management practices" (Peng, Pike and Roos, 2007, p. 538). The fourth most cited article crafts the knowledge management concept as a driver of performance, which is often investigated across our sample of articles (Perrott, 2007; Bontis and Serenko, 2009; Kucharska, 2021; Pflugfelder, 2021). The knowledge concept is also present in the next most cited article of the sample that "provides a clear interpretation of how intellectual capital relates to knowledge sharing" (Radaelli *et al.*, 2011, p. 349).

Overall, considering also other articles in this sample, not only the ones represented in the most cited articles table, comes clear the shift of intellectual capital from a concept focused on skills and competences, to a more holistic understanding for improved management and increased performance within healthcare organizations.

*Dominant features of extant research*

Most articles included in the sample are empirical articles (73%). The majority of the empirical articles (N=17 articles), adopt a quantitative approach. These results are a clear call for more qualitative research.

Other features to further investigate are related to the theoretical underpinnings used in the sample of articles. An understanding of the theoretical underpinnings most used in the domain gives important insights to future publications for the research design process, from the development of research question to data selection and interpretation (Collins and Stockton, 2018). Among the most used theoretical perspectives to investigate intellectual capital in healthcare domain are the *Knowledge-based view* and *Resource-based view*. Other theories include *Complexity theory, Econometric theory, Economic growth theory, Human capital theory, Intellectual capital theory, Social exchange theory, Stakeholder theory, Theory of planned behaviour, Transformational leadership theory, Value creation theory.*

Most articles adopt existing measures of intellectual capital to measure human, structural and/or relational capital. Only one article from the sample extends existing measures: the article of Vishnu and Gupta (2015), that develops an extended and modified version of the Value Added Intellectual Coefficient (VAIC) model. All the other articles in the sample use previously developed and validated measures.

Among the components of intellectual capital, human capital is mainly conceptualized in terms of competences and skills, training possibilities and educational capital, as well as motivation and experience. Human capital is also considered in terms of employee satisfaction. While considering structural capital, it is conceptualized in terms of organizational capital, technological capital, resource allocation and culture. For the third component, relational capital is also reported as social capital or

customer capital and conceptualized in terms of network, collaboration and support from territorial stakeholders and relations with patients.

*Old topics and new directions*

All the articles extracted for this systematic review sample have been clustered in broad research themes. This information is important because it helps to understand the most researched themes and the emerging ones, referring to themes that have been less researched in the sample of this systematic literature review, to provide a starting point for future research, or what can be accounted as the new direction of the debate. The overall sample was distributed into 9 clusters, respectively 1- IC for improved performance; 2- IC and knowledge management; 3- IC disclosure; 4- Technologies for healthcare performance; 5- IC and innovation; 6- IC and organizational culture; 7- IC for sustainable healthcare; 8- IC for patient centered care, and 9- IC and professional incompetence (see Table 5).

| Cluster | No. of articles |
|---|---|
| IC for improved performance | 8 articles |
| IC disclosure | 5 articles |
| IC and knowledge management | 4 articles |
| IC and innovation | 4 articles |
| Technologies for healthcare performance | 3 articles |
| IC and organizational structure | 2 articles |
| IC for sustainable healthcare | 2 articles |
| IC for patient centered care | 1 article |
| IC and professional incompetence | 1 article |

Table 5. *Extant research clusters*

These results are not surprising. Of course, due to the search string, a greater number of articles will fall into the first cluster of IC for improved performance. This is in line with extant research supporting the increased importance of intangible resources when there is the need to improve performance, especially in healthcare services (Carlucci and Schiuma, 2012a). Regarding the second cluster, previous research supports that healthcare is a knowledge-based industry and knowledge plays a key role on performance (Inkinen, 2016). The third cluster contains articles on IC disclosure which is increasingly becoming important for the accountability of the firm (Melloni, 2015). Next cluster contains articles on technologies for healthcare performance, which is also not surprising due to the rapid technological advancement and the opportunities it opens to service firms to provide better services for the public and improve customer satisfaction (Bitner, Brown and Meuter, 2000). The fifth cluster consists of IC and innovation, with 3 articles included, as it is widely accepted in extant research that the components of intellectual capital play an important role in the innovative capabilities of any organization (Edvinsson *et al.*, 2004). Another important concept related to intellectual capital and performance of healthcare organizations from the sample of articles is the organizational structure, present in the third cluster named IC and organizational structure, consisting

of two articles. It is clear to companies that certain features of the organization structure, such as hierarchy, line of authority, labor division, flexibility, etc. may affect the intellectual capital within an organization (Ramezan, 2011). Another rising and interesting topic with the introduction of the sustainable development goals (SDG) is the one on sustainable healthcare in terms of economic, social, and environmental sustainability challenging healthcare organizations (Bottero *et al.*, 2015). The two last clusters consist of single detached themes and basically are related to patient centered care and professional incompetence, which can be considered as new emerging topics that can gain further research interest in the future.

**ANTECEDENTS**  **PHENOMENON**  **OUTCOMES**

| ANTECEDENTS | PHENOMENON | OUTCOMES |
|---|---|---|
| · Leadership support<br>· Stakeholder collaboration<br>· Increased competition<br>· Increased healthcare demands<br>· Philanthropic motivation<br>· Employee engagement<br>· Learning culture<br>· Rapidly changing and turbulent operating environments<br>· Corporate governance requirements<br>· Introduction of new technologies on a global scale<br>· Growing financial pressures<br>· Increased digital innovation<br>· Establishing a formal reporting procedure<br>· Increased healthcare expenditure | **IC PRIORITIZATION IN HEALTHCARE ORGANIZATIONS** | · Improved performance<br>· Reduced staff turnover<br>· Improved sustainability of healthcare organizations<br>· Competitive intelligence<br>· Knowledge development and protection<br>· Maximization of competitive advantage<br>· Improved social reporting<br>· Increased value<br>· Improved work processes<br>· Increased patient satisfaction<br>· High quality of service<br>· Reduction of medical errors<br>· Extended reach and responsiveness of health system<br>· Improved decision making<br>· Increased profitability<br>· Operational efficiency |

Figure 2. *Integrative framework*

*Findings on the integrative conceptual framework*

A detailed analysis of the studies aimed to report findings that can be integrated within a group of categories, respectively antecedents-phenomenon-outcomes, adopted by Narayanan, Zane, and Kemmerer (2011). This categorization is done purposely to be of help in addressing and understanding the benefits coming from the phenomenon, prioritization of IC in healthcare organizations. The articles in the sample were carefully investigated for the relevance of delivering information on possible antecedents and outcomes of intellectual capital prioritization, and this information was integrated within the framework.

The antecedents report all the pre-existing conditions that give rise to the prioritization of IC in healthcare organizations. The existence of such conditions as leadership support, stakeholder collaboration, increased competition, increased healthcare demands, etc., are some of the drivers to

actions that prioritize IC within the organization. These actions on their own will result in different outcomes, benefiting the healthcare organization, the different stakeholders, etc., such as improved performance, reduced staff turnover, improved sustainability of organization, among others (see figure 2).

## LIMITATIONS AND FUTURE RESEARCH AVENUES

Limitations of this study concern the limited size of the sample. Considering that this study deals with a small sample of articles, that can be due to the early stages of research within the domain, or the confusion surrounding the prioritizing of IC in healthcare organizations, following a lack of a comprehensive unifying approach, future studies should consider overcoming this pitfall. Another important limitation of this study is linked with the manual screening of the literature, to assess the relevance of the articles in the result list by the insertion of the search query in the selected databases. This process on its own implies a degree of subjectivity to the article selection. Therefore, future studies can use more advanced tools to support and improve the process of article screening (i.e., revtools, etc.). Moreover, future research may discuss how IC has been interpreted and approached in a cross-cultural context. In addition, different empirical contributions can be of relevant interest, such as the reporting of case studies or best practices to bring research forward.

Following a careful analysis of the reviewed articles, a list of possible future research ideas is developed. Therefore, future research is addressed on:

 a. Case studies on how intellectual capital management in healthcare organizations is contributing to a better service provision.

 b. Comparative studies of intellectual capital management in healthcare between eastern and western cultures.

 c. An investigation of enabling factors of knowledge transfer in the healthcare services.

 d. Management of knowledge and relational capital in healthcare services: best practices.

 e. Evolution from human capital to integration of human, structural and relational capital. How will integration serve to better outcomes?

 f. Developing a measurement approach to investigate knowledge transfer.

The above listed research ideas are just a few of the possible investigations within the domain emerging from this literature review. Other research avenues can also be of interest to the entire academic communities as well as to healthcare organizations for the practical implementation of evidence-based decision making to improve performance outcomes.

## DISCUSSION AND CONCLUSIONS

A structured review of the literature was carried to investigate papers published in the domain, to answer the three main research questions on evolution of the literature, the most researched components in terms of healthcare organizations performance and to develop a future research agenda based on the identified methodological gaps and unanswered questions. The evidence that emerged from the reviewed studies shows that intellectual capital is gaining increased interest in healthcare organizations especially in the last years. Thus, even though the debate on IC and healthcare performance has received growing attention in the last years, it still is in its initial stage. Growing competition, as well as pressure placed on healthcare organizations from a variety of stakeholders, can be seen as a factor behind increased interest (Sell, 2019). A broad stream of research finds intangible assets such as human resources competencies, related to improved financial performance and improved strategic flexibility (Kafetzopoulos, 2022; Katou, 2022). According to research conducted on healthcare organizations, putting an emphasis on intellectual capital may be related with improved organizational sustainability (Cavicchi and Vagnoni, 2017). In addition, according to Longo and Mura (2011), prioritizing different components of IC has been the solution to improve stakeholders' satisfaction. In a knowledge intensive industry such as the healthcare industry, IC is a core factor of performance and can offer competitive advantage to organizations (Tiwari, 2020).

## RESEARCH IMPLICATIONS

The results of this investigation have important repercussions, not just from a theoretical perspective but also from a practical one. The findings of this study indicate, from a theoretical standpoint, that the concept has progressed from skill-focused investigations to emerging topics such as patient-centred care and sustainable health, as well as innovative technologies such as blockchain technology, as important factors for improved performance. A set of preconditions are related with the increased attention to prioritization of intellectual capital in healthcare organizations which made it necessary to consider intellectual capital (Sell, 2019) when developing strategies and plans for the future. These factors that contribute to improved performance can be examined further in subsequent study with the goal of formulating strategies that enable businesses to derive the greatest possible value.

Moreover, the findings of this study provide important insights to managers, which can be used to improve the performance of healthcare organizations by emphasizing key components of IC. As we read through the contents of the articles that make up the sample, we come across obvious evidence of the use of IC as a source for value creation, with the goal of improving the satisfaction of the final user, the patient, as well as other actors within the complex healthcare system. Understanding that intellectual capital (IC) is a tool for attaining the objective of enhanced performance and this can be

made easier by taking an approach that is outcome oriented, is critical to the achievement of better performance indicators and sustainability of health organizations.

Lastly, the study also informs the policymaker perspective, as its findings could be useful in decision of resource allocations in the healthcare sector.

## REFERENCES

Al-Khatib, A. W. (2022) 'Intellectual capital and innovation performance: the moderating role of big data analytics: evidence from the banking sector in Jordan', EuroMed Journal of Business, 17(3), pp. 391–423.

Bitner, M. J., Brown, S. W. and Meuter, M. L. (2000) 'Technology infusion in service encounters', Journal of the Academy of marketing Science, 28(1), pp. 138–149.

Bontis, N. and Serenko, A. (2009) 'Longitudinal knowledge strategising in a long-term healthcare organisation', International Journal of Technology Management, 47(1–3), pp. 250–271. doi: 10.1504/ijtm.2009.024125.

Bottero, M. C. et al. (2015) 'Healthcare Sustainability Challenge', Green Energy and Technology, 218, pp. 31–114. doi: 10.1007/978-3-319-14036-0.

Boulos, M. N. K. (2005) 'On geography and medical journalology: a study of the geographical distribution of articles published in a leading medical informatics journal between 1999 and 2004', International Journal of Health Geographics, 4(1), p. 7. doi: 10.1186/1476-072X-4-7.

Carlucci, D., Marr, B. and Schiuma, G. (2004) 'The knowledge value chain: how intellectual capital impacts on business performance', International Journal of Technology Management, 27(6–7), pp. 575–590.

Carlucci, D. and Schiuma, G. (2012a) 'Assessing and managing organizational climate in healthcare organizations: An intellectual capital based perspective', International Journal of Information Systems in the Service Sector, 4(4), pp. 49–61. doi: 10.4018/jisss.2012100103.

Carlucci, D. and Schiuma, G. (2012b) 'Evaluating organisational climate through IC lens: The case of a public hospital', Measuring Business Excellence, 16(4), pp. 79–90. doi: 10.1108/13683041211276465.

Castelo Branco, M. et al. (2010) 'An analysis of intellectual capital disclosure by Portuguese companies', EuroMed Journal of Business. Edited by M. Krambia Kapardis, 5(3), pp. 258–278. doi: 10.1108/14502191011080809.

Cavicchi, C. and Vagnoni, E. (2017) 'Does intellectual capital promote the shift of healthcare organizations towards sustainable development? Evidence from Italy', Journal of Cleaner Production, 153, pp. 275–286. doi: 10.1016/j.jclepro.2017.03.175.

Chang, C.-C., Hung, S.-W. and Huang, S.-Y. (2013) 'Evaluating the operational performance of knowledge-based industries: the perspective of intellectual capital', Quality & Quantity, 47, pp. 1367–1383.

Collins, C. S. and Stockton, C. M. (2018) 'The Central Role of Theory in Qualitative Research', International Journal of Qualitative Methods, 17(1), pp. 1–10. doi: 10.1177/1609406918797475.

Crossan, M. M. and Apaydin, M. (2010) 'A multi-dimensional framework of organizational innovation: A systematic review of the literature', Journal of Management Studies. doi: 10.1111/j.1467-6486.2009.00880.x.

Dameri, R. P. and Ferrando, P. M. (2021) 'Implementing integrated reporting to disclose intellectual capital in health organisations: a case study', Journal of Intellectual Capital, 22(2), pp. 311–336. doi: 10.1108/JIC-01-2020-0019.

Dumay, J., Guthrie, J. and Rooney, J. (2020) 'Being critical about intellectual capital accounting in 2020: An overview', Critical Perspectives on Accounting, 70(January). doi: 10.1016/j.cpa.2020.102185.

Edvinsson, L. et al. (2004) 'Innovations: the new unit of analysis in the knowledge era: The quest and context for innovation efficiency and management of IC', Journal of Intellectual Capital.

Evans, J. M., Brown, A. and Baker, G. R. (2015) 'Intellectual capital in the healthcare sector: A systematic review and critique of the literature', BMC Health Services Research, 15(1), pp. 1–14. doi: 10.1186/s12913-015-1234-0.

Ferrari, R. (2015) 'Writing narrative style literature reviews', Medical Writing, 24(4), pp. 230–235. doi: 10.1179/2047480615z.000000000329.

Ferreira, P. P. et al. (2010) 'Intellectual capital and knowledge management practices in health systems', in Proceedings of the International Conference on Intellectual Capital, Knowledge Management & Organizational Learning, pp. 170–177.

van der Geer, E., van Tuijl, H. F. J. M. and Rutte, C. G. (2009) 'Performance management in healthcare: Performance indicator development, task uncertainty, and types of performance indicators', Social Science and Medicine, 69(10), pp. 1523–1530. doi: 10.1016/j.socscimed.2009.08.026.

Guthrie, J., Ricceri, F. and Dumay, J. (2012) 'Reflections and projections: A decade of Intellectual Capital Accounting Research', British Accounting Review, 44(2), pp. 68–82. doi: 10.1016/j.bar.2012.03.004.

Hewko, S. J. and Cummings, G. G. (2016) 'Performance management in healthcare: a critical analysis', Leadership in Health Services, 29(1), pp. 52–68. doi: 10.1108/LHS-12-2014-0081.

Inkinen, H. (2016) 'Review of empirical research on knowledge management practices and firm performance', Journal of knowledge management.

Kafetzopoulos, D. (2022) 'Talent development: a driver for strategic flexibility, innovativeness and financial performance', EuroMed Journal of Business, (ahead-of-print).

Katou, A. A. (2022) 'Human resources flexibility as a mediating mechanism between high-performance work systems and organizational performance: A multilevel quasi-longitudinal study', EuroMed Journal of Business, 17(2), pp. 174–192.

Kucharska, W. (2021) 'Leadership, culture, intellectual capital and knowledge processes for organizational innovativeness across industries: the case of Poland', Journal of Intellectual Capital, 22(7), pp. 121–141. doi: 10.1108/JIC-02-2021-0047.

Longo, M. and Mura, M. (2011) 'The effect of intellectual capital on employees' satisfaction and retention', Information & Management, 48(7), pp. 278–287.

Melloni, G. (2015) 'Intellectual capital disclosure in integrated reporting: an impression management analysis', Journal of Intellectual Capital.

Nikolaj Bukh, P. (2003) 'The relevance of intellectual capital disclosure: a paradox?', Accounting, Auditing & Accountability Journal, 16(1), pp. 49–56.

Peng, T. J. A., Pike, S. and Roos, G. (2007) 'Intellectual capital and performance indicators: Taiwanese healthcare sector', Journal of Intellectual Capital, 8(3), pp. 538–556. doi: 10.1108/14691930710774902.

Perrott, B. E. (2007) 'A strategic risk approach to knowledge management', Business Horizons, 50(6), pp. 523–533. doi: 10.1016/j.bushor.2007.08.002.

Pflugfelder, N. S. (2021) 'Knowledge management as a driver of performance in ambulatory healthcare – a systematic literature review through an intellectual capital lens', Journal of Intellectual Capital, 22(2), pp. 403–432. doi: 10.1108/JIC-02-2020-0068.

Radaelli, G. et al. (2011) 'Intellectual capital and knowledge sharing: The mediating role of organisational knowledge-sharing climate', Knowledge Management Research and Practice, 9(4), pp. 342–352. doi: 10.1057/kmrp.2011.29.

Ramezan, M. (2011) 'Intellectual capital and organizational organic structure in knowledge society: How are these concepts related?', International Journal of Information Management, 31(1), pp. 88–95.

Schiavone, F. et al. (2021) 'Guest editorial', Journal of Intellectual Capital, 22(2), pp. 213–218. doi: 10.1108/JIC-03-2021-304.

Sell, S. K. (2019) '21st-century capitalism: structural challenges for universal health care', Globalization and Health, 15(1), pp. 1–9.

Tandon, A. et al. (2020) 'Blockchain in healthcare: A systematic literature review, synthesizing framework and future research agenda', Computers in Industry, 122. doi: 10.1016/j.compind.2020.103290.

Tiwari, R. (2020) 'Nexus between intellectual capital and profitability with interaction effects: panel data evidence from the Indian healthcare industry', Journal of Intellectual Capital. doi: 10.1108/JIC-05-2020-0137.

Veltri, S., Bronzetti, G. and Sicoli, G. (2011) 'Reporting intellectual capital in health care organizations: specifics, lessons learned, and future research perspectives', Journal of Health Care Finance, 38(2), pp. 80–97.

Vishnu, S. and Gupta, V. K. (2015) 'Performance of intellectual capital in Indian healthcare sector', International Journal of Learning and Intellectual Capital, 12(1), pp. 47–60. doi: 10.1504/IJLIC.2015.067831.

Yang, C. C. and Lin, C. Y. Y. (2009) 'Does intellectual capital mediate the relationship between HRM and organizational performance? Perspective of a healthcare industry in Taiwan', International Journal of Human Resource Management, 20(9), pp. 1965–1984. doi: 10.1080/09585190903142415.

# A BIBLIOMETRIC-BASED ANALYSIS OF BOARD OF DIRECTORS AND INNOVATION

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## ABSTRACT

A board of directors is crucial for the success of any organization and successful organizations must be innovative for sustainable performance. Therefore, this study aims to explore the body of knowledge linking the board of directors and innovation in the organization. The objective is achieved using bibliometric analysis of 119 articles extracted from Scopus for the period 2013 to 2022. The two-step approach for analysis is carried out. Firstly, descriptive performance indicators are analyzed in terms of publication trend, most productive journal, citation trend, most productive author, and most productive countries related to the dataset. Secondly, the conceptual structure of the dataset is analyzed through author keywords co-occurrence network analysis, co-citation network analysis, and thematic map. The results demonstrate an emerging academic interest in the topic. Moreover, results highlight the board of directors, corporate governance, and innovation as concentrated areas of research. Whereas board characteristics, board interlocks, ambidexterity, exploitative innovation, and environmental innovation as emerging avenues for future research, which is one of the contributions of this study.

*Keywords: Board of Directors, Innovation, Bibliometric analysis, Co-occurrences, Co-citation, Thematic map*

## 1 INTRODUCTION

The board of directors (BOD) contributes to the organization not only as a monitoring mechanism but also as a source of support and assistance in decision-making (Adams and Ferreira, 2007). Therefore, the board of directors receives significant attention in improving performance and mitigating agency conflicts. Numerous board attributes and process variables can result in the implementation of an idea, service, process, structure, system or product that is new to the predominant organizational practice – referred to as the board of directors and innovation model (Jaskyte, 2012).

Initially, the research between board and innovation accounted for the inside and outside directors (Hill and Snell, 1988; Baysinger, Kosnik and Turk, 1991). However, with time, other board

characteristics such as size, independent directors, duality, gender, knowledge and professional diversity or interconnections outside firms are also studied (Mukarram, Ajmal and Saeed, 2018; Hernández-Lara and Gonzales-Bustos, 2019). Apart from these, various board characteristics are emerging with the advancement in the field of research. For instance, board interlocks and ambidexterity are emerging topics that can act as a catalyst for innovation in an organization.

As far as previous studies are concerned, it is hard to generalize the results based on the varying sample and the context it has been studied. Likewise, the board of directors is a wide concept and most of the studies focus on a single aspect such as board size or duality, or the target variables are defined differently. Based on the premise that the board of directors indeed causes innovation, whether the interrelated concepts related to this concentrated topic are further researchable or not. Therefore, this study aims to assess the expanding body of knowledge related to the board of directors and innovation. This aim is supplemented by conducting a bibliometric analysis in terms of important studies and highlighting the current state of development in this area and the possible research path for further execution.

The analysis highlights that limited studies exist that identify innovation in the business based on the capabilities of the board of directors. Such as board characteristics and CEO characteristics. Moreover, there is a dearth of literature that examines the impact of the minority group on the board in terms of innovation. According to the critical mass theory when a minority group on board reaches a certain critical mass, there is an innovation due to the qualitative change in the group's interaction (Torchia, Calabrò and Huse, 2011). Hence, minority groups on board could be studied in terms of innovation as an avenue for further research.

The paper is structured in the following way: the next section highlights the literature review. Section 3 is about the research methodology. Section 4 presents descriptive results using bibliometric analysis. Section 5 explores the main topics emerging from the dataset. Lastly, section 6 is about results, conclusion, limitations and avenues for future research.

## 2 LITERATURE REVIEW

Various board characteristics are evaluated in terms of innovation. Such as, board diversity was found to enrich the decision-making related to innovation (Wang, 2011). Also, board size is one of the widely used determinants of firm innovation, explaining positive and negative relationships (Sierra-Morán *et al.*, 2021). On one hand, a larger board can have a positive impact on innovation, as it can accommodate more agents for innovation, such as key scientists (Lacetera, 2001; Shapiro *et al.*, 2015). While on the other hand, empirical evidence suggests that board size does not have a significant impact on innovation (Bianchi Martini, Corvino and Rigolini, 2012; Valencia, 2018). According to Hill

and Snell (1988), firms with inside directors tend to innovate more, in contrast to outside directors who diversify their strategies. This is following other empirical studies claiming that the effect of inside directors is positive for innovation (Chouaibi and Jarboui, 2012). However, Lacetera (2001) did not find the presence of internal directors influencing innovation. Hoskisson, Hitt, Johnson, and Grossman (2002) find evidence that the percentage of inside directors is important for internal innovations, while the percentage of outside directors is important for external innovation. Director independence is found to be positively linked with innovation in various previous studies (Sena *et al.*, 2018; Sharma, Jhunjhunwala and Sharda, 2018), suggesting that boards be more assertive with the presence of independent directors (Ashwin, Krishnan and George, 2016). Conversely, it was argued that due to the lack of knowledge related to a firm's specific needs of independent directors, innovation could be hindered (Blibech and Berraies, 2018). According to Hoskisson et al., (2002), stock options for board members were found to have a positive impact on internal innovation in the form of product generation.

Another important concept related to BOD is duality, which means that when a single person holds more than one significant position in a company, such as chairman and CEO. Similar instances could limit long-term risky strategies such as innovation (Kor, 2006). This is the reason the agency principle deters such behavior in the organization. Moreover, having separate individuals for the key positions such as CEO and Chairman turns out to be positive for investments in risky strategies driving innovation (Hill and Snell, 1988). Other studies indicate the adverse impact on investments in innovation when there is duality on the board (Blibech and Berraies, 2018). Conversely, some studies also show that the separation of such roles turns out to be negative for innovation (Sharma, Jhunjhunwala and Sharda, 2018; Valencia, 2018). Lipton and Lorsch (1992) proposed that more board meetings indicate more important investment opportunities taken up such as innovation. The reason is that board meeting allows sharing of not only technical, but also personal information. However, more board meetings may also cause difficulty in reaching an agreement on strategic decisions related to innovation and also results in higher costs such as directors'' travel expense, meeting fees and even managerial time (Vafeas, 1999).

Miller and Triana (2009) found a positive relationship between gender diversity on board and expenditure on innovation. On the flip side, Galia and Zenou (2012) found a positive relationship between board gender diversity and marketing innovation, but a negative relationship between gender diversity and product innovation. Empirical evidence also suggests that directors' links with other organizations result in knowledge and experience sharing and could have a positive impact on joint innovation (Wincent, Anokhin and Örtqvist, 2012). Directors' tenure could also harm innovation. The reason is that directors lose independence when they spend a long time in the organization and so

they are lesser effective in overseeing and promoting innovation strategies. Moreover, long tenure may be associated with adherence to established norms and therefore the directors may be more reluctant to change (Bravo and Reguera-Alvarado, 2017).

## 3 RESEARCH METHODS

This study adopts a bibliometric approach to study the literature surrounding board and innovation. The bibliometric analysis uses a quantitative approach to describe, evaluate and monitor the published research to highlight meaningful results for the intended user. It guides the researcher about the most influential work and also maps the research fields avoiding subjective bias (Zupic and Cater, 2015). Moreover, this technique is useful because it allows an unbiased and transparent review of the literature.

Co-Occurrence Network Analysis, Co-Citation Network Analysis and Thematic Map are used to analyze the current body of research by identifying the key clusters and important interconnections. The co-occurrences of two words in the same article are an indicator of how these two concepts are related to each other. Also, two keywords co-occurring within the same paper show the interlink among topics to which they refer. Hence, the presence of various co-occurrences among the pair of words indicates a strategic alliance towards the specific research theme (Cambrosio *et al.*, 1993) and they can be used to understand the conceptual structure of the research field (Lamboglia *et al.*, 2020). Citation analysis uses quantitative measures of the number of publications and number of citations and co-citations as proxies of the influence of various sources in a research discourse (Culnan, 1986). Whereas co-citation is an analysis of scientific literature based on the citations constrained in the scientific papers (Cambrosio *et al.*, 1993) and it is the best-known method for grasping cognitive and social structures (Callon *et al.*, 1983). These techniques produce maps showing linkages between researchers who cite each other's work, or, to be more precise, who are cited together in the same paper (Cambrosio *et al.*, 1993). It also identifies papers considered highly relevant for discourse in the literature (Scornavacca *et al.*, 2020). Hence, co-citation analyses are dynamic due to the updates in the research area and changes in the co-citation frequencies in a certain field. The database used to conduct this study is Scopus and the objective is achieved through descriptive and social network analysis. The bibliometric analysis is carried out using R and bibliometric package and VOS Viewer. These social network analysis tools are used to obtain citation and keywords-based measures of literature sources.

Literature selection is very important for bibliometric studies. The reason is that it ensures validity and consistency. Therefore, to select the literature and analyze the results following four steps were performed.

1. Identification of relevant articles in the Scopus.

2. Incorporating restrictions on the first result derived.

3. The refining phase is by reading the title, keywords and abstract.

4. Cleaning and standardizing the keywords.

*3.1 Data collection and refinement of results*:

The first step involved the identification of relevant articles in the Scopus. Scopus was chosen as it is a well-known database in terms of extensive papers from peer-reviewed journals. Also, it offers high-impact papers and is considered a reliable source in academia. The process related to the selection of research query started from the literature and intending to select all possible papers by defining a broad research query. So, the research query "Board" AND "Innovation" was devised to perform a search in titles, abstracts and keywords generating a total of 5,404 results. The second step involved incorporating relevant restrictions considering quality control. The search was limited to the last ten years, subject area of business and management, document type: article and language in English. As a result, the sample consisted of 379 articles. We selected articles as a document type omitting books, chapters and non-refereed publications because it is considered validated knowledge with significant impact in the field (Keupp, Palmié and Gassmann, 2012). The subsequent step was refining the sample by reading the title, keywords and abstract. Keywords were manually inserted into the papers without it. So, at the end of the removal of false positives, the data sample was composed of 119 relevant articles.

The last step before proceeding to the data analysis was cleaning and standardizing the keywords. This process consisted of homogenizing the keywords that indicated the same topic, but with different names. Table 1 shows the consolidation of the most recurring keywords.

| Original Keywords | Revised Keywords |
|---|---|
| board | Board of directors |
| board composition | |
| board members | |
| board of directors | |
| boards | |
| boards of directors | |

| board attributes | Board characteristics |
|---|---|
| board behavior | |
| board capabilities | |
| board characteristics | |
| board cultural diversity | Board diversity |
| board diversity | |
| board female participation | |
| board gender diversity | |
| boardroom gender diversity | |
| ceo | CEO characteristics |
| ceo duality | |
| ceo expertise | |
| ceo hometown identity | |
| ceo origin | |
| ceo overconfidence | |
| ceo successors | |
| ceo-duality | |

Table 1: Keywords

## 4 DATA ANALYSIS

The data analysis involved two steps:

1. The analysis of descriptive performance indicators using publication trend, most productive journal, citation trend, most productive author and most productive countries.

2. The analysis of the conceptual structure of the dataset, exploring the main theme discussed in the corpus, through Author Keywords Co-Occurrence Network Analysis, Co-Citation Network Analysis and Thematic Map.

### 4.1 Descriptive Bibliometric Analysis

The descriptive analysis is presented in five ways: the publication trend, most productive journal, citation trend, most productive author and most productive countries.

### 4.1.1 Publication Trend

According to Figure 2, the last ten years starting from 2013 experienced an increase in publications from almost 6 to 15 per year. The largest increase in publications is from 2016 to 2018 from 5 to 15 publications per year and from 2019 to 2021 from 10 to 30 publications per year. Whereas the greatest decrease was from 2018 to 2019. The period between 2019 and 2021 appears to be the most productive experiencing the largest increase in publications.
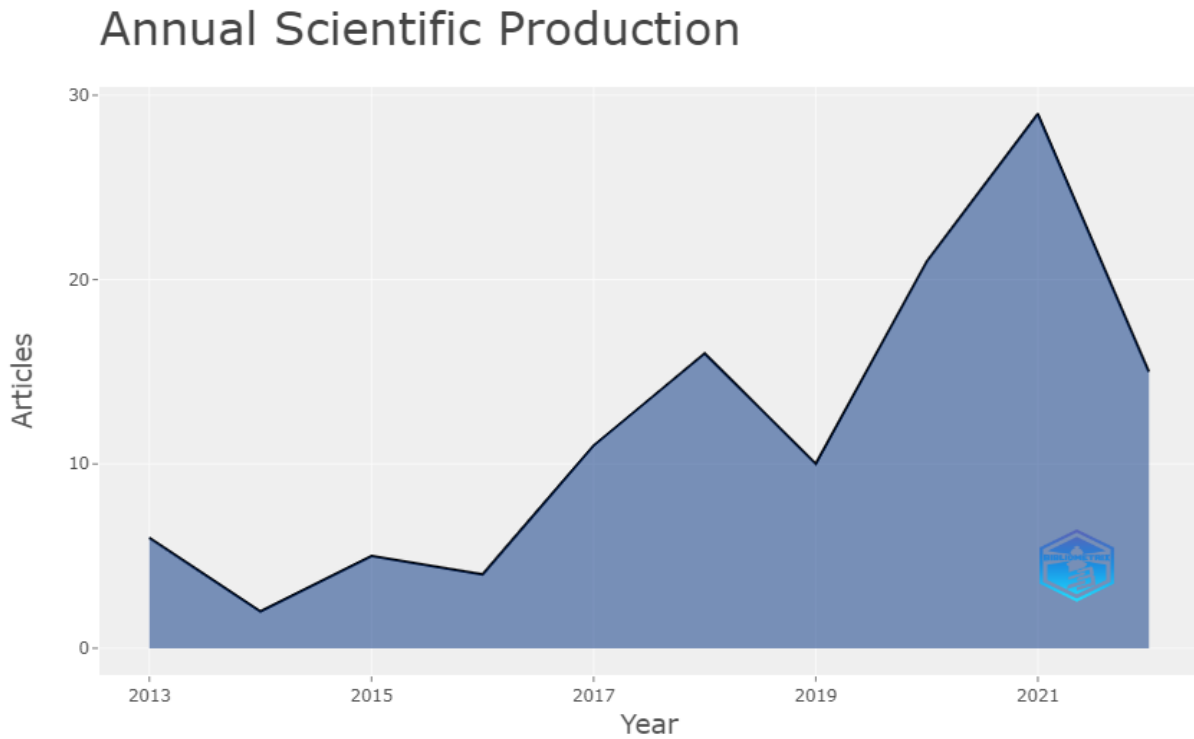


Figure 2: Annual Scientific Production
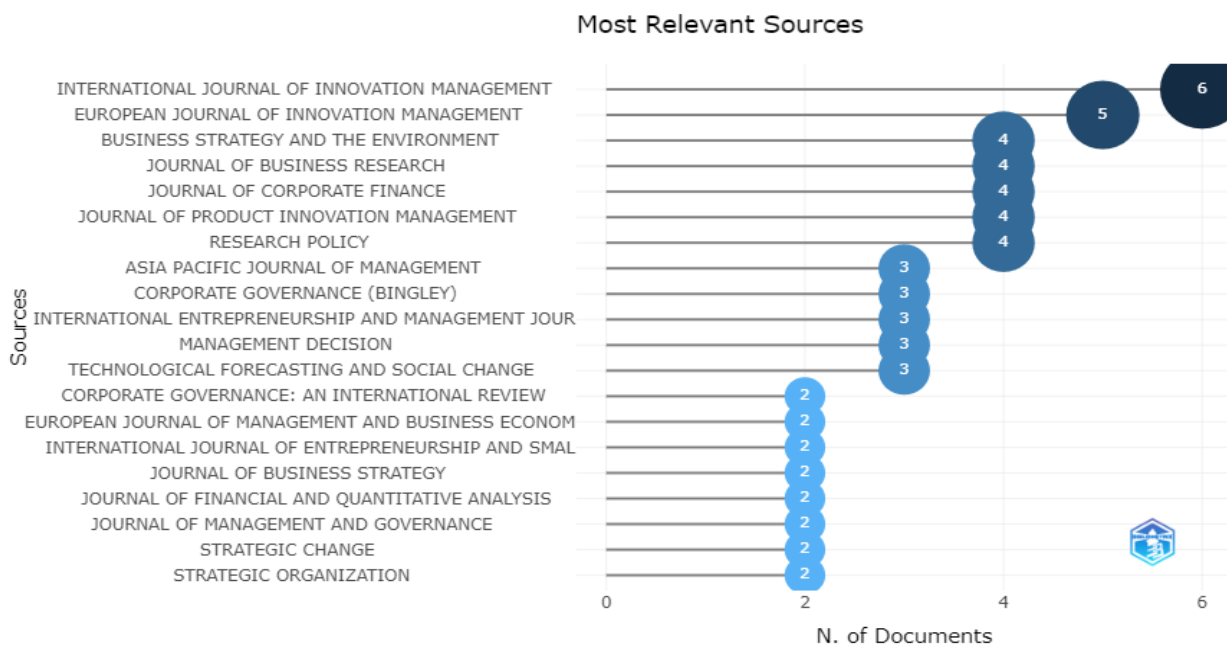


Figure 3: Most Relevant Sources

### 4.1.2 Most Productive Journal

Studies related to BOD and innovation are published in various journals. Figure 3 shows the ranking of the twenty most productive journals by analyzing the number of publications in a specific journal, one can identify the most productive journal and its influence in terms of specific discipline. Figure 3 presents the most productive journal which is the international journal of innovation management publishing six documents. The second highest is the European Journal of innovation management with five documents.

### 4.1.3 Citations Trend

The citation trend shows how many documents are published in a specific discipline in a year. Also, shows the popularity and influence of the subject matter in the scientific community. Figure 4 shows the highest citations which is almost 6 in 2019. While the lowest citations are in 2020 which is three. The citation trend shows the increasing popularity of the topic for a decade.
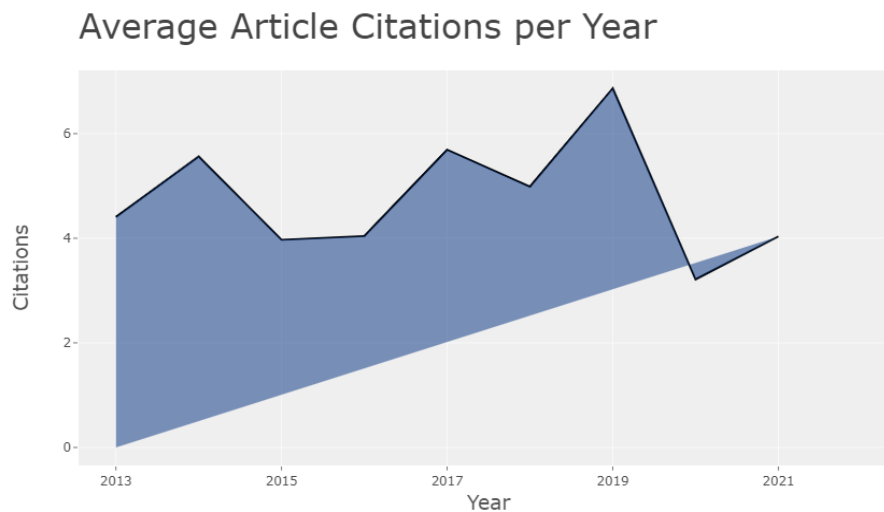


Figure 4: Average article citations per year

### 4.1.4 Most Productive Author

Figure 5 illustrates the authors' production over time-related to the board and innovation. The size of the dot and number illustrates the number of published articles. Jaskyte K. is the most productive author with four documents published in this discipline from 2013 to 2022. On the second rank, four authors are publishing three articles each.
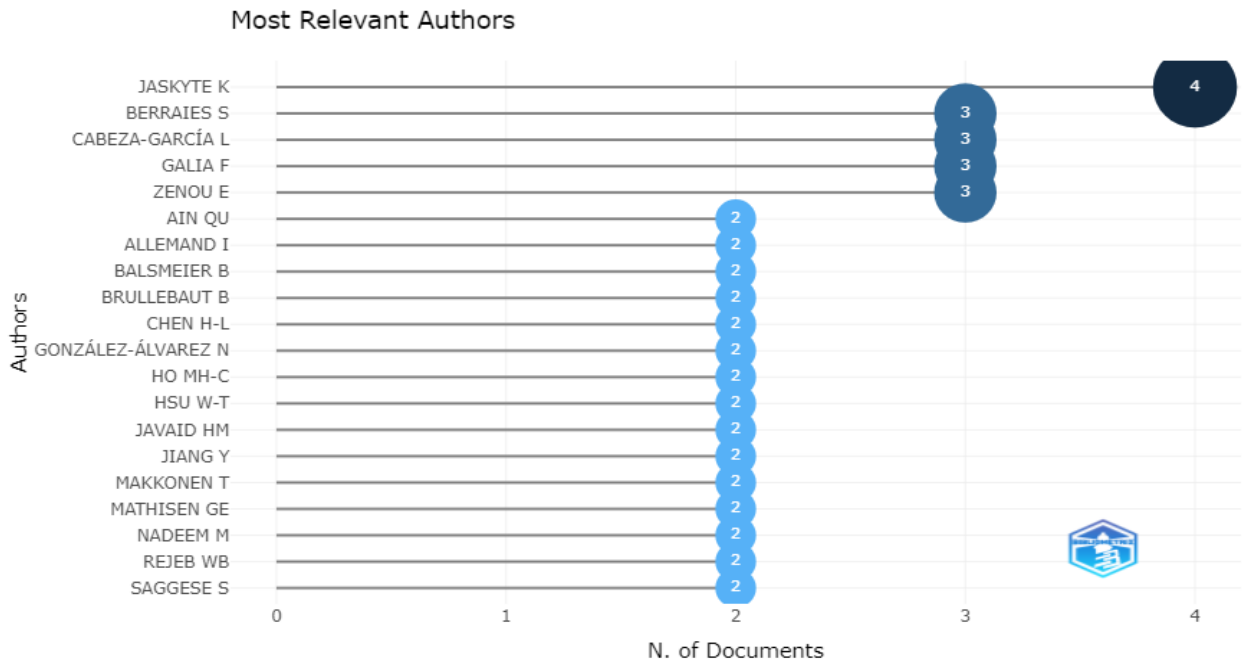
Figure 5: Most relevant authors
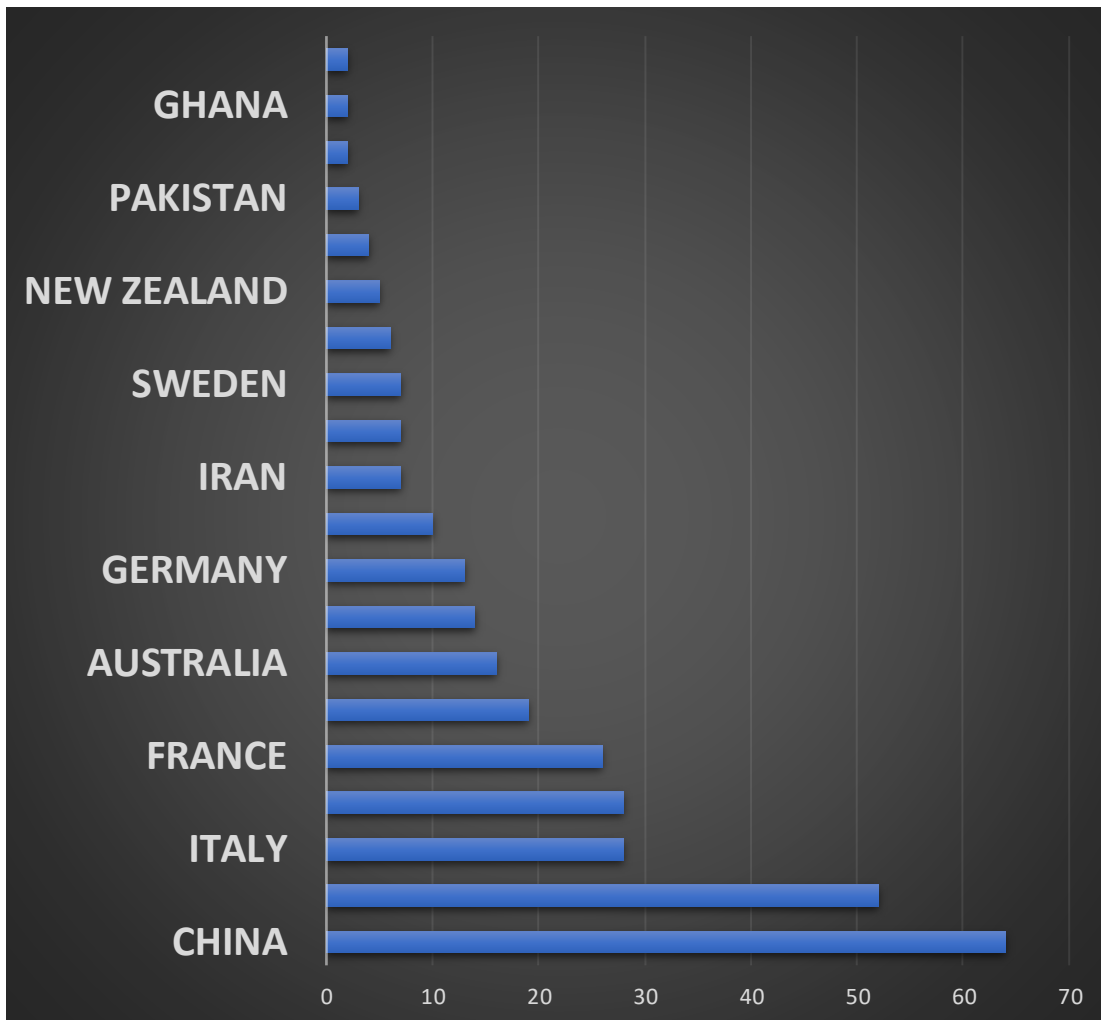


Figure 6: Most productive country

### 4.1.5 Most Productive Country

We computed the research output from different countries in our dataset. Figure 6 shows the impact and influence of the country in the scientific community related to our topic. The country that ranks first in terms of contribution in the field of board and innovation is China with almost 65 articles per year. The USA ranks second with almost 50. Italy and Spain are in the third-ranking with almost 30 articles.

### 4.2 Bibliometric Analysis

The analysis of the topic is based on the Author's Keywords Co-Occurrence Network Analysis, Co-Citation Network Analysis and Thematic Map.

### 4.2.1 Author Keywords Co-Occurrence Network Analysis

Author keywords co-occurrence network analysis can provide further evidence regarding our discourse. This network analysis shows the connection between two concepts with the help of a tie between the nodes. Keeping the minimum number of occurrences at 3, the occurrence network of 34 keywords was created as illustrated in Figure 7. The link between the two keywords shows their existence in the same publication (co-occurrence). The thickness of the node reflects the number of contributions in which the pair appears.

The red cluster shows the connection of BOD with innovation and various concepts of corporate governance, such as female directors, independent boards, gender diversity, exploitative innovation and explorative innovation. Moreover, the blue cluster shows the primary connection between corporate governance and innovation. And a secondary connection with family firms, product innovation and dynamic capabilities. The green cluster focuses on Board diversity and Innovation, while also including important concepts of board interlocks, CEO characteristics, innovation performance, the board size, board independence and board characteristics.

The analysis suggests that the board of directors, corporate governance and innovation are concentrated areas of research with various studies highlighting their inter-relationship. However, there are limited studies in terms of board characteristics, board independence, board interlocks and board size in terms of innovation.
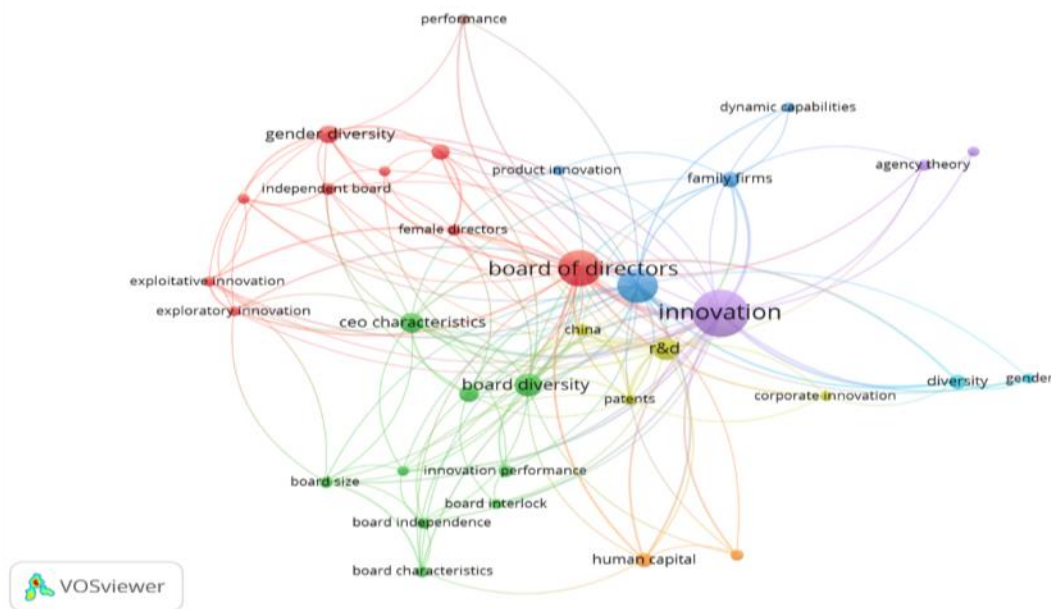
Figure 7: Keywords co-occurrence network

### 4.2.2 Co-citation Network Analysis

To identify high-impact studies co-citation analysis is performed. Co-citation analysis allows us to understand the emergence of knowledge in the context of authors. This analysis technique uses a quantitative measure of the number of citations. The thickness of the node represents a reference cited by a paper in the dataset. The larger the node the more important is the reference concerning the subject. As it appears in Figure 8, the thicker node represents co-citation pairs that are more frequent than others. The most apparent co-citation pair links the paper of Balsmeier, B. (2017), Zona, F. (2013) and Zuraik, A. (2019).
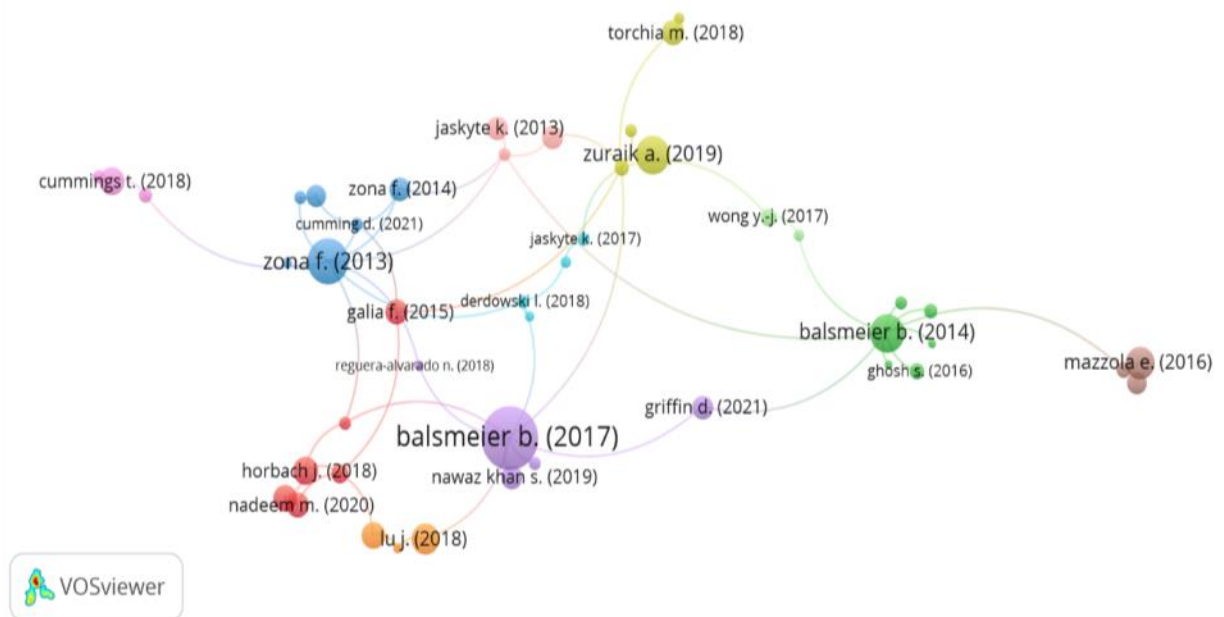


Figure 8: Co-citation network

### 4.2.3 Thematic Map

To gain further insight into the topic, we perform a thematic analysis. The thematic map shows clusters of keywords and their interconnections. The co-occurrence of the keywords in the dataset allows the algorithm to identify the clusters (Scornavacca *et al.*, 2020). In the Thematic map, topics are plotted in four quadrants in terms of two parameters: density and centrality.

The thematic analysis performed on the current dataset shows clusters mainly in the first and second quadrants. According to Figure 9, CEO characteristics, innovation performance, board interlocks, family firms and agency theory are central and developed areas as they appear in the upper-right quadrant and are named motor-themes. Themes in the lower-right quadrant are relevant but still are in the process of development. Although these concepts are well-established but are pertinent to the theoretical framework of the research field. Such as, innovation, board of directors and corporate governance.
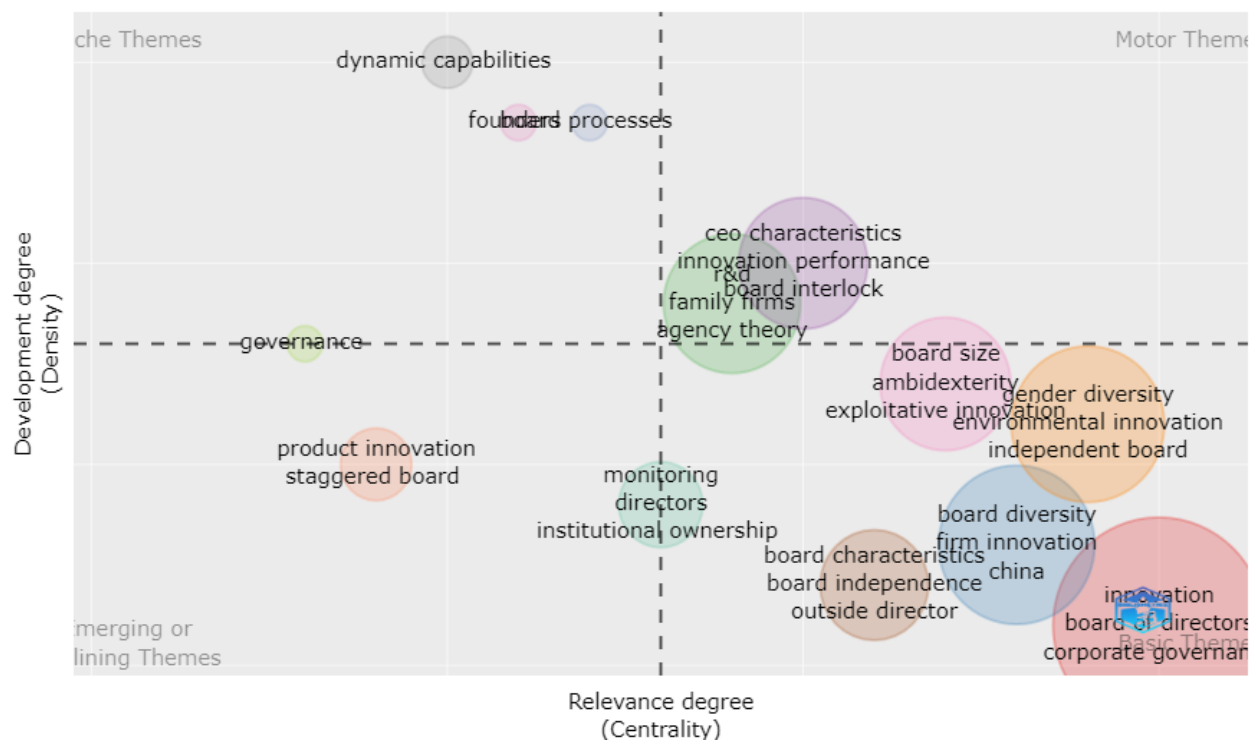


Figure 9: Thematic Map

## 5 CONCLUSION

This bibliometric analysis-based study is motivated by the fact that the board of directors plays an important role in innovation in the organization. Also, the board of directors is one of the important components driving innovation and improving monitoring mechanisms in an organization. However, the board of directors is a combination of concepts that individually drive the board to perform

effectively toward the goals of the organization. Many of these components have already been discussed by scholars in different dimensions and contexts. However, considering the evolving nature of this important topic, it was important to find the state of development surrounding the topic of the board of directors and innovation.

So, the relevant articles from Scopus are analyzed to examine the existing studies and the emerging topics related to this body of knowledge. This study adds to the literature concerning board of directors and innovation aiming to highlight the concentrated areas and those areas which have limited studies. The results show that the dataset is based on three main areas board of directors, innovation and corporate governance. Growing academic interest in these topics can be inferred based on publication and citation trends.

Furthermore, our results have some practical implications, such as, buttresses that the board of directors supports innovation and firms need to be aware that environmental innovation is what will be more important in the future with a global drive towards sustainability. Secondly, apart from the concentrated variables such as independent directors, board size, and CEO characteristics. Ambidexterity is an important skill needed in strategic management to expand the board's vision and generate new ideas for the development of new products and patents keeping in view the market demand. Moreover, board interlocks promote dialogue and information exchange resulting in the promotion of investment innovation. Overall, innovation can be achieved with the right balance of board with diverse capabilities and skills which is more detrimental in this era.

There is also a limitation of the current study that it only uses the Scopus database to analyze papers that belong to the discipline of business, management and accounting. So, it could be extended to journals indexed in the Web of science. Moreover, this study also highlights important areas towards which this study could be extended such as board characteristics, board interlocks, ambidexterity, exploitative innovation, and environmental innovation. Hence, proposing an avenue for further research.

## REFERENCES

Adams, R.B. and Ferreira, D. (2007) 'A theory of friendly boards', The Journal of Finance, 62(1), pp. 217–250. Available at: https://doi.org/10.1111/j.1540-6261.2007.01206.x.

Ashwin, A.S., Krishnan, R.T. and George, R. (2016) 'Board Characteristics, Financial Slack and R&D Investments: An Empirical Analysis of the Indian Pharmaceutical Industry', International Studies of Management and Organization, 46(1), pp. 8–23. Available at: https://doi.org/10.1080/00208825.2015.1007007.

Baysinger, B.D., Kosnik, R.D. and Turk, T.A. (1991) 'Effects of Board and Ownership Structure on Corporate R&D Strategy', Academy of Management Journal, 34(1), pp. 205–214. Available at: https://doi.org/10.2307/256308.

Bianchi Martini, S., Corvino, A. and Rigolini, A. (2012) 'Board diversity and structure: What implications for investments in innovation? Empirical evidence from Italian context', Corporate Ownership and Control, 10(1), pp. 9–25. Available at: https://doi.org/10.22495/cocv10i1art1.

Blibech, N. and Berraies, S. (2018) 'The impact of CEO' duality and board's size and independence on firms' innovation and financial performance', E3 Journal of Business Management and Economics, 9(1), pp. 022–029. Available at: https://doi.org/10.18685/ejbme(9)1_ejbme-17-021.

Bravo, F. and Reguera-Alvarado, N. (2017) 'The effect of the board of directors on R&D intensity: board tenure and multiple directorships', R and D Management, 47(5), pp. 701–714. Available at: https://doi.org/10.1111/radm.12260.

Callon, M. et al. (1983) 'From translations to problematic networks: An introduction to co-word analysis', Social Science Information, 22(2), pp. 191–235.

Cambrosio, A. et al. (1993) 'Historical scientometrics? Mapping over 70 years of biological safety research with co-word analysis', Scientometrics, 27(2), pp. 119–143.

Chouaibi, J. and Jarboui, A. (2012) 'Characteristics of the board of directors and involvement in innovation activities: a cognitive perspective', International Journal of Behavioural Accounting and Finance, 3, pp. 240–255. Available at: https://doi.org/10.1504/IJMFA.2010.034117.

Culnan, M.J. (1986) 'The Intellectual Development of Management Information Systems, 1972 – 1982: A Co-Citation Analysis', Management Science, 32(2), pp. 156–172.

Galia, F. and Zenou, E. (2012) 'Board composition and forms of innovation: Does diversity make a difference?', European Journal of International Management, 6(6), pp. 630–650. Available at: https://doi.org/10.1504/EJIM.2012.050425.

Hernández-Lara, A.B. and Gonzales-Bustos, J.P. (2019) 'The impact of interlocking directorates on innovation: the effects of business and social ties', Management Decision, 57(10), pp. 2799–2815. Available at: https://doi.org/10.1108/MD-11-2017-1186.

Hill, C.W.L. and Snell, S.A. (1988) 'External control, corporate strategy, and firm performance in research-intensive industries', Strategic Management Journal, 9, pp. 577–590.

Hoskisson, R.E. et al. (2002) 'Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies', Academy of Management Journal, 45(4), pp. 697–716. Available at: https://doi.org/10.2307/3069305.

Jaskyte, K. (2012) 'Boards of directors and innovation in nonprofit organizations', Nonprofit Management and Leadership, 22(4), pp. 83–96. Available at: https://doi.org/10.1002/nml.

Keupp, M.M., Palmié, M. and Gassmann, O. (2012) 'The Strategic Management of Innovation: A Systematic review and paths for future research', International Journal of Management Reviews, 14, pp. 367–390. Available at: https://doi.org/10.1111/j.1468-2370.2011.00321.x.

Kor, Y.Y. (2006) 'Direct and interaction effects of top management team and board compositions on R&D investment strategy', Strategic Management Journal, 27(11), pp. 1081–1099. Available at: https://doi.org/10.1002/smj.554.

Lacetera, N. (2001) 'Corporate Governance and the Governance of Innovation : the Case of Pharmaceutical Industry', Journal of Management and Governance, 5, pp. 29–59.

Lamboglia, R. et al. (2020) 'Exploring the relationship between audit and technology. A bibliometric analysis', Meditari Accountancy Research, 29(5), pp. 1233–1260. Available at: https://doi.org/10.1108/MEDAR-03-2020-0836.

Lipton, M. and Lorsch, J.W. (1992) 'A Modest Proposal for Improved Corporate Governance', The Business Lawyer, 48.

Miller, T. and Triana, M. del C. (2009) 'Demographic Diversity in the Boardroom : Mediators of the Board Diversity – Firm Performance Relationship Toyah Miller and María del Carmen Triana', Journal of Management Studies, 46(5).

Mukarram, S.S., Ajmal, T. and Saeed, A. (2018) 'Women directors' propensity towards risk in technology firms', The International Journal of Business in Society, 18(2), pp. 353–367. Available at: https://doi.org/10.1108/CG-09-2017-0213.

Scornavacca, E. et al. (2020) 'Investigating the entrepreneurial perspective in smart city studies', International Entrepreneurship and Management Journal, 16, pp. 1197–1223.

Sena, V. et al. (2018) 'Board independence, corruption and innovation. Some evidence on UK subsidiaries', Journal of Corporate Finance, 50, pp. 22–43. Available at: https://doi.org/10.1016/j.jcorpfin.2017.12.028.

Shapiro, D. et al. (2015) 'The effects of corporate governance and ownership on the innovation performance of Chinese SMEs', Journal of Chinese Economic and Business Studies, 13(4), pp. 311–335. Available at: https://doi.org/10.1080/14765284.2015.1090267.

Sharma, J.P., Jhunjhunwala, S. and Sharda, S. (2018) 'Corporate Governance and Innovation', in Flexible Strategies in VUCA Markets, pp. 63–75. Available at: https://doi.org/10.1007/978-981-10-8926-8_5.

Sierra-Morán, J. et al. (2021) 'The board of directors and firm innovation: A meta-analytical review', Business Research Quarterly, pp. 1–26. Available at: https://doi.org/10.1177/23409444211039856.

Torchia, M., Calabrò, A. and Huse, M. (2011) 'Women Directors on Corporate Boards: From Tokenism to Critical Mass', Journal of Business Ethics, 102(2), pp. 299–317. Available at: https://doi.org/10.1007/s10551-011-0815-z.

Vafeas, N. (1999) 'Board meeting frequency and firm performance', Journal of Financial Economics, 53(1), pp. 113–142. Available at: https://doi.org/10.1016/S0304-405X(99)00018-5.

Valencia, V.S. (2018) 'Corporate Governance and CEO Innovation', Atlantic Economic Journal, 46(1), pp. 43–58. Available at: https://doi.org/10.1007/s11293-017-9563-5.

Wang, M.S. (2011) 'Innovation capital and firm performance: To explore the deferral effect and the revisited measurement', Journal of Strategic Innovation and Sustainability, 7(2), pp. 64–79. Available at: http://www.na-businesspress.com/jsis/wangmsweb7_2_.pdf.

Wincent, J., Anokhin, S. and Örtqvist, D. (2012) 'Supporting innovation in government-sponsored networks: The role of network board composition', International Small Business Journal, 31(8), pp. 997–1020. Available at: https://doi.org/10.1177/0266242612447970.

Zupic, I. and Cater, T. (2015) 'Bibliometric Methods in Management and Organization', Organizational Research Methods, 18(3), pp. 429–472. Available at: https://doi.org/10.1177/1094428114562629.

# THE RELATIONSHIP BETWEEN PUBLIC AND PRIVATE FUNDING SOURCES FOR TERTIARY EDUCATION IN SELECTED OECD COUNTRIES

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## ABSTRACT

Total spending on tertiary education has been growing significantly in recent years, faster than students' numbers. Rising public spending on education is putting a strain on government budgets, and there is a push for greater private involvement, either in the form of tuition fees or a larger proportion of the private sector's participation. In this paper, we have carried out a cluster analysis to compare levels of public and private expenditure on tertiary education in 21 European OECD countries. The goal is to find an indicator that will make it possible to create clusters of countries with minimal intra-group variability. This condition is met by the indicator of expenditure on tertiary education in USD per student - the starting point for analyzes of the level of tertiary education within the clusters. Countries within these clusters also have very low variability levels regarding the proportions of public expenditure in total expenditure on tertiary education.

**KEYWORDS:** *tertiary education, expenditure on tertiary education, cluster analysis, OECD*

## INTRODUCTION

In the context of the general development of modern technology, technology, and society, there is a growing demand for higher education and deeper knowledge in various fields. This context provides a university graduate with a better position in the labour market, greater flexibility, undoubtedly higher earnings and, consequently, a higher standard of living. It also creates better conditions for society to increase its labour productivity and overall wealth. While all governments share this view of higher education's importance, each country has a different approach to funding sources for its higher education institutions. Private funding sources have traditionally predominated in certain countries (e.g., Japan, the UK, Australia, Chile, South Korea, the USA, and Israel). However, in most OECD countries (especially EU ones), the proportion of private sources is low (e.g., France, Poland, Czech Republic, and Belgium) or even very low (e.g., Austria, Norway, Finland, Iceland, and Luxembourg); cf. OECD (2020).

Total spending on tertiary education has been growing significantly in recent years, faster than student numbers. This growth is mainly due to increasing expenditure on research and development, which is an integral part of the activities pursued by higher-education institutions. At the same time, approximately one-half of secondary school students currently enter tertiary education. This phenomenon, of course, requires not only additional sources of funding (both public and private) but also changes in the tertiary education system. Universities need to be able to offer flexible study programmes that ensure that students are able and willing to continue their education and gain new knowledge and experience even after they have obtained their diplomas. For tertiary education institutions, this means developing not only new study programmes for students but also programmes for postgraduate education. The flexibility of study programmes is the first prerequisite for graduates to find a good job in the labour market and a good indicator of a skilled workforce for employers.

On the other hand, the growing numbers of students in tertiary education are leading to "inflation" in the number of graduates, as well as employers considering the diploma as a certain "standard" for their employees. At the same time, this opens up the potential risk of an increase in the proportion of mediocrity in the knowledge of graduates in certain professions. It is, therefore, necessary to develop vocationally oriented secondary education alongside tertiary education to ensure a sufficient supply of skilled labour for those occupations where tertiary education is unnecessary.

In addition to the flexibility of study programmes, there is no doubt that great emphasis needs to be placed on the IT knowledge and experience of both students and teachers. The two-year period of the COVID-19 pandemic has shown the necessity of such knowledge. The sheer length of this period has also underlined the importance of the teacher's role because it has been observed that distance learning (even with the aid of all available technologies) can never replace real student-teacher interaction. Another equally important aspect that helped to overcome this (challenging) period was the role of the governments, which devoted considerable resources not only to overcome the crisis but also to acquire appropriate equipment and technology.

All these observations highlight the importance of public resources in financing tertiary education. It is in the interest of the public authorities to facilitate university and college education that generates high-quality graduates who are well placed in the labour market. On the other hand, rising public expenditure-on-education puts a strain on government budgets. So in countries where the share of public expenditure is high, there is a drive for greater involvement of private sources, whether in the form of tuition fees or greater participation by private firms and institutions. We have therefore asked how the type of financing of tertiary education is reflected in the approaches of individual governments and private actors. Our analysis uses data published regularly by the OECD.

# THE ROLE OF PUBLIC AND PRIVATE SOURCES IN FINANCING TERTIARY EDUCATION

A number of authors have addressed the topic of expenditure-on-education and its impact on various aspects of education in modern society. Most attention has been paid to education in general, including financing issues, by analysts at the OECD. A comprehensive publication is published annually (specifically for 2022, cf. OECD, 2022), which provides basic tables, charts, and commentary on current education issues in OECD countries. The OECD (2020) study looks at the role of private financing of tertiary education in 23 OECD countries. It shows that private expenditure-on-education is growing faster than public spending and significantly faster than students' numbers. In the period 2010-2016, private expenditure-on-education was increased by 3% in the OECD countries studied, while public spending increased by only 1%, with quite significant differences between the countries studied. The variation in the proportion of private sources in financing tertiary education is mainly due to the level of tuition fees paid by households. In about a third of the OECD countries surveyed, students do not pay tuition fees.

In contrast, in countries with traditional private financing of tertiary education (US, UK, and Chile), tuition fees exceeded USD 7,000 in 2018. Countries with a high proportion of private funding sources have a very well-managed system of loans and other forms of state-guaranteed financial aid for students (this is essentially a transfer from public funds into private hands). In 2018, the amount of loans and other financial assistance represented 9% of total tertiary education spending (OECD average). In countries with a high proportion of private funding (Australia and the UK), these transfers represent more than 20% of total tertiary education spending.

Government-guaranteed tuition fee loans undoubtedly represent an essential resource to enable the less well-off prospective students to access tertiary education. Its proponents (see OECD, 2020) argue that it is more effective than scholarships or grants. However, loans imply a relatively stifling long-term debt burden for recent graduates who enter the labour market. For example, the average annual loan in the UK in 2020 was more than USD 18,000, and the average student debt after graduation was almost USD 59,000. High levels of post-study indebtedness can be a disincentive for less well-off students and pose a risk to the governments by preventing borrowers from meeting their obligations. Lang (2019), Stachowiak-Kudła and Kudła (2017) or Barr (2001) discuss ways to reduce barriers to entry into tertiary education.

On the other hand, the study's authors (cf. OECD, 2020) state that the proportion of private funding in total tertiary education expenditure does not significantly impact the balance of tertiary students in the 19-24 age group. For example, in Norway, where the proportion of private funding in tertiary education is 6%, about one-third of the 19-24 population cohort is enrolled in a university or college. In

Australia, on the other hand, where private sources account for 60% of total tertiary education spending, the share of university students in that age group is 40%. In Australia, student loans account for a third of private sources of finance, while in Chile, where the proportion of private financing sources is about the same as in Australia, it is only about 10%. The relationship between private institutions and the public sector in the financing of tertiary education in countries with a preponderance of public resources (Denmark and other Nordic countries) is addressed by Rasmussen (2022). It mainly deals with the role of private foundations and the conditions of interaction between the public sector and private actors in education and research.

The growing amount of (both public and private) expenditure incurred on tertiary education also raises questions about the efficiency and growth of such spending. The issue of efficiency for tertiary education spending in CEE countries has been addressed by Yotova, L., and Stefanova (2017). They consider the main effects of obtaining a diploma to be low unemployment, higher levels of income (and thus higher tax revenue for the state), reduced levels of poverty in society, and higher labour productivity. Using the DEA method, they show that expenditure-on-education has the highest efficiency in Latvia, Lithuania, and the Czech Republic, while Hungary and Bulgaria are well below the average. Mihaiu's (2010) paper had an analogous focus, aimed to compare expenditure-on-education efficiency in Romania with other EU countries. The result was an observation that this expenditure's efficiency was low, with subsequent doubts about the need to increase the amount of money spent on education in that country.

The numbers, or proportions, of graduates from public and private universities and colleges depend on the proportions of public and private resources in expenditure-on-education. In OECD countries, it has been found (see OECD, 2021) that the number of graduates from public tertiary education institutions is, on average, higher than that from private institutions. In one-half of OECD countries, the proportion of graduates from public colleges and universities exceeds 80%.

In summary, tertiary enrolments in OECD and G-20 countries have been growing steadily in recent years and are expected to continue to grow in the coming years (see OECD, 2018b). At the same time, the proportion of women reaching tertiary education is increasing among a given age cohort (25-34 years). The authors of the study project that, by 2030, about one-third of women aged 25-34 will have a tertiary education (compared to only 27% of men). The proportions of tertiary students in the most populous countries (India and China) are also increasing significantly. Significantly, 35% of tertiary students in China and India have degrees in science, technology, mathematics, and engineering, i.e., the fields that have the potential to contribute most significantly to wealth creation and lead to faster and more efficient economic growth. In the OECD countries, this proportion is as low as 15% on average.

The role of public spending on tertiary education is, among other things, to reduce the disparity between poor and rich countries and regions. The question of whether this goal is possible and appropriate has been addressed by Cuesta and Madrigal (2014) using the case of Taiwan. They analysed a situation where the Taiwanese government tried to reduce the gap between poor and rich areas by decentralising education spending. They showed that to have such an effect, the education-funding system would have to be reformed; in particular, to reconsider the amounts and forms of transfers from public funds to private institutions (i.e., loans and student allowances). The shift from exclusively public sources of tertiary education funding to multi-source funding in the case of China was analyzed by Liu et al. (2020). They show that the gradual expansion of higher education has led to a shift in funding away from exclusively public sources, which together with tuition provide the largest share of revenue for public higher education. The share of funds coming from business activities, is increasing, but still relatively low. Golden et al. (2021) presented in their study the results of a survey in OECD countries concerning the form and delivery of public funds to universities and colleges. The results of their very detailed survey cover, among other things, the conditions of loans and public-financing contributions to cover tuition fees or education costs. Among the 28 OECD countries that participated in the survey, only five countries do not provide such loans and contributions (the Czech Republic, Slovenia, Austria, Ireland, and the Flemish part of Belgium). Student loans are provided through public institutions or commercial banks. Chapman and Tulip (2010) deal in detail with the issue of student loans from the point of view of international comparison.

Education as a factor of economic growth and social welfare (see eg. Hyytinen and Toom, 2019) should be a concern of every government. Mallik et al. (2016) examined the situation in 14 selected Asian countries in the period 1973-2012. They showed that growth in expenditure-on-education is, in the long run, associated with economic growth. Bils and Klenow (2000), on the other hand, argue that the coincident dynamics of expenditure-on-education and GDP do not yet prove a direct effect of education levels on economic growth. Using China as an example, Liu et al. (2021) examined the relationship between expenditure-on-education and economic growth. The results showed that spending on secondary education (ISCED 3 and 4)[1] has the most significant impact on economic growth in China, followed by spending on tertiary education. The Cobb-Douglas production function was used for their analysis.

The importance of public expenditure and its effects on tertiary education are unquestionable; public funding is the basis for financing this highest level of education in continental Europe. It is undoubtedly the result of historical development and a specific cultural tradition. In this context, we ask whether groups of similar countries could be found within continental Europe regarding the

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[1] See Education levels under the ISCED 2011 classification, OECD (2022), p. 17.

amounts spent on tertiary education and the proportions of public spending in expenditure-on-education. With the use of cluster analysis, we want to find an indicator that will make it possible to create clusters of countries with minimal intra-group variability. These clusters will then become the starting point for further analyzes of the tertiary education.

## DATA AND METHODOLOGY

As noted above, the principles and concepts of tertiary education funding differ from state to state. We have therefore tried to group together countries that show some similarities in this respect. We are interested in a group of major OECD countries and, among them, especially European countries, in which certain similarities with the Czech environment occur. As indicators, we use total spending on tertiary education in % of GDP, private spending on tertiary education in % of GDP, public spending on tertiary education in % of GDP, and finally also spending on tertiary education in USD per student. Tertiary education expenditure represents the volume of public and private expenditure on tertiary education (ISCED level 5-8). This indicator is conceived as a proportion in GDP (%) or USD per student. In OECD countries, public sources of funding tertiary education institutions predominate. However, in recent years there has been a tendency for the proportion of private sources to increase, both in terms of tuition fees (i.e., financial participation of households) and funding from private companies, non-profit organisations, professional associations and chambers, etc. (including tertiary-level educational institutions). Expenditure on research and development in tertiary education institutions is also included. Private expenditure on tertiary education represents the amount of private resources (from households, religious organisations, and private enterprises or institutions) spent on tertiary education. This indicator is designed as a proportion in GDP (%) and reflects the direct costs of private educational institutions. Public expenditure on tertiary education includes public expenditure on the operation of higher-education institutions. Again, this indicator is designed as a proportion in GDP (%) of such expenditure, allowing comparisons over time and space of the emphasis put by national governments on tertiary education.[1]

We have used cluster analysis to analyse tertiary education expenditure. Specifically, we have used Ward's method, and clusters' formation is based on the Squared Euclidean criterion, with a prior assumption of five clusters. Since the data is always given in the same units of measure, there has been no need to standardise it.

In the first stage of data analysis, we have included 21 countries in continental Europe, plus the USA, Canada, Japan, Israel, New Zealand, Australia, and Korea, i.e., countries with a dominant quality

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[1] The descriptions of these indicators are based on https://data.oecd.org/eduresource/spending-on-tertiary-education.htm.

footprint in tertiary education. The data source is the OECD data for 2020.[1] It turns out that the clusters created identify non-European countries as solitary. This result is implied by the fact that they have significantly different tertiary education financing systems. In effect, each of these countries has formed 'its own cluster'; this result also suppresses the possibility of forming clusters among the remaining 21 countries. They then figure as one cluster overall against the non-European countries, thus depriving us of a chance for a more detailed manifestation of these 21 countries in terms of their tertiary education funding systems in separate clusters. We have therefore had to exclude the non-European countries from our subsequent analysis.

In the second stage of the data analysis, we want to create clusters for selected European OECD countries that are similar to each other (and yet there are differences), i.e., to rank the countries in each cluster according to certain similarities in terms of the indicators mentioned above reflecting the level of tertiary-education financing.

The results indicate that Cluster 1 consists of countries with high living standards and considerable economic development, where public expenditure on tertiary education is predominant. Cluster 2 comprises Nordic countries (Finland, Sweden, and Estonia) and culturally close countries with a significant public sector presence (France and Belgium).

| Cluster | Country |
| --- | --- |
| 1 | Austria (AUT), Denmark (DNK), Netherlands (NLD), Norway (NOR) |
| 2 | Belgium (BEL), Finland (FIN), France (FRA), Sweden (SWE), Estonia (EST) |
| 3 | Czech Republic (CZE), Portugal (PRT), Slovenia (SVN), Lithuania (LTU) |
| 4 | Germany (DEU), Poland (POL), Spain (ESP), Latvia (LVA) |
| 5 | Greece (GRC), Hungary (HUN), Italy (ITA), Slovakia (SVK) |

Source: https://data.oecd.org/searchresults/?q=Education, the authors' own calculations
Table 1. Spending on tertiary education (in % of GDP)

The third cluster consists of the Czech Republic and Slovenia, with a high proportion of public expenditure on tertiary education on the one hand, and Portugal and Lithuania on the other hand, where private resources account for about one-half of public resources. The countries in the fourth Cluster can again be subdivided into two groups – Germany and Poland, neighbouring countries with a predominance of public funding of tertiary education, and Spain and Latvia, geographically distant countries, but where private sources of tertiary education funding exceed half of the public expenditure on tertiary education.

The final Cluster is again made up of two sub-groups: on the one hand, Slovakia and Hungary, neighbouring and culturally very close countries with identical tertiary education expenditure patterns in terms of funding sources (in which public funding dominates), and Greece and Italy on the other hand, which are close in terms of high government debt but very different in terms of the proportion of public funding in expenditure on tertiary education. Greece is among the 10 European countries with

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[1] Cf. https://data.oecd.org/searchresults/?q=Education.

the highest proportion of public resources in total tertiary-education expenditure, while Italy has the highest proportion of private resources (37%) in continental Europe. The data in Table 1 is complemented by Figure 1.
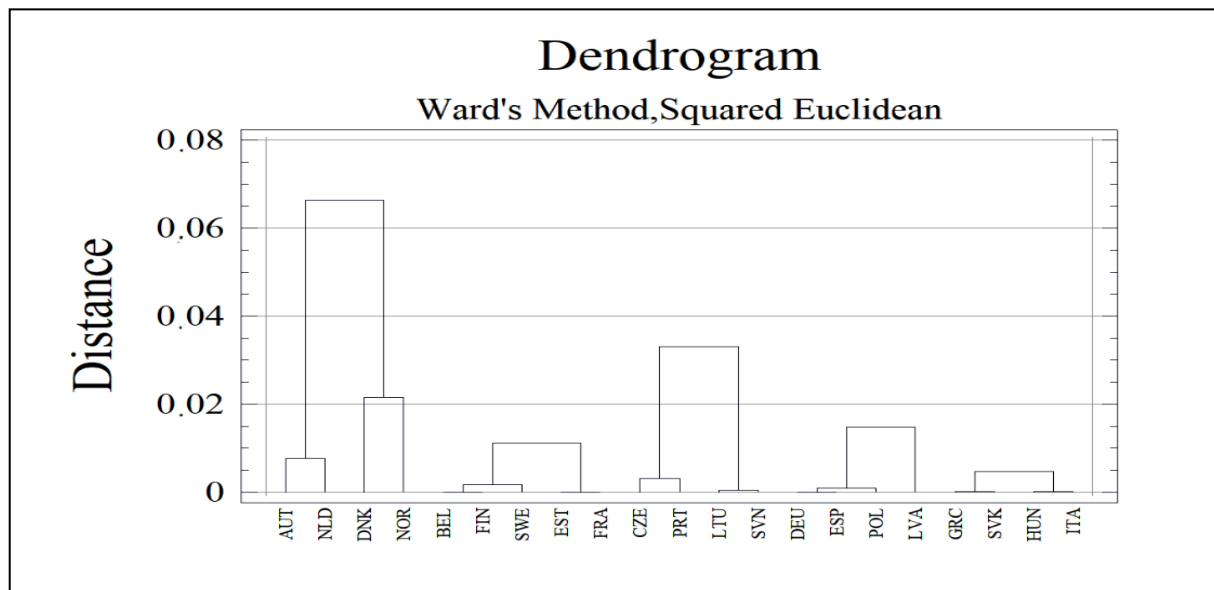


Figure 1. Dendrogram – spending on tertiary education (in % of GDP)

Another indicator bearing information about tertiary-education expenditure is private spending on tertiary education. Using cluster analysis, we have again divided the surveyed European countries into five clusters – see Table 2.

| Cluster | Country |
|---|---|
| 1 | Austria (AUT), Belgium (BEL), Czech Republic (CZE), Denmark (DNK), Germany (DEU), Estonia (EST), Poland (POL), Sweden (SWE), |
| 2 | Latvia (LVA), Spain (ESP), Netherlands (NLD) |
| 3 | Finland (FIN), Greece (GRC), Norway (NOR), Slovenia (SVN), |
| 4 | France (FRA), Italy (ITA), Portugal (PRT), |
| 5 | Hungary (HUN), Slovakia (SVK), Lithuania (LTU) |

Source: https://data.oecd.org/searchresults/?q=Education, the authors' own calculations
Table 2. Private spending on tertiary education (in % of GDP)

The results in Table 2 and Figure 2 show that Cluster 1 consists of eight countries, in which public support for higher education has traditionally been dominant and private funding accounts for only 10 to 20% of total expenditure on tertiary education. Cluster 2 puts together Spain, Latvia, and the Netherlands, in which private spending represents a quarter to a third of total expenditure on tertiary education. The third Cluster consists of Finland, Norway, and Slovenia, in which private spending does not exceed 10% (Finland, Norway) and 14% (Slovenia, Greece) of total expenditure on tertiary education. The fourth Cluster comprises France, Italy, and Portugal, i.e., the European "southern wing" countries. They differ in terms of the amount spent on tertiary education coming from private resources: in Italy, although public resources predominate, private resources account for more than

one-half of public resources; in France, public resources dominate; in Portugal, private resources do not exceed one-half of public resources. Finally, Hungary, Slovakia, and Lithuania are in the fifth Cluster, with virtually the same proportion of private spending in total tertiary education expenditure (around 27%). The data in Table 2 is complemented by Figure 2.
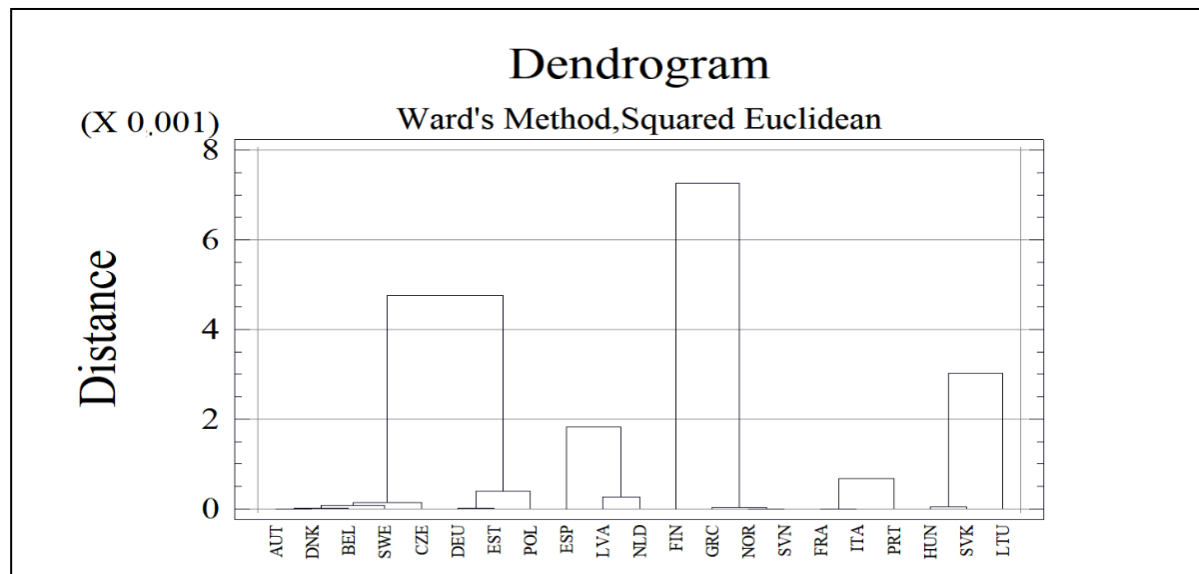


Figure 2. Dendrogram – Private spending on tertiary education (in % of GDP)

In what follows, we attempt to compare clusters created by private spending with groups of countries by public spending on tertiary education. The clusters of countries by public expenditure on tertiary education are shown in Table 3.

| Cluster | Country |
|---|---|
| 1 | Austria (AUT), Denmark (DNK), Norway (NOR) |
| 2 | Belgium (BEL), Finland (FIN), Sweden (SWE), |
| 3 | Czech Republic (CZE), Spain (ESP), Slovenia (SVN) |
| 4 | Germany (DEU), Estonia (EST), France (FRA), Netherlands (NLD), Poland (POL) |
| 5 | Hungary (HUN), Slovakia (SVK), Lithuania (LTU), Latvia (LVA), Italy (ITA), Portugal (PRT), Greece (GRC) |

Source: https://data.oecd.org/searchresults/?q=Education, the authors' own calculations
Table 3. Public spending on tertiary education (in % of GDP)

Table 3 shows that Cluster 1 consists of Austria, Denmark, and Norway, the countries with the highest proportion of public spending in expenditure on tertiary education in GDP (1.6 to 1.8% of GDP) and a high (around 90%) proportion of public spending in total tertiary education expenditure. The second Cluster consists of Finland, Belgium, and Sweden (with a proportion of public spending on tertiary education in GDP of around 1.3%). Finland's proportion of public expenditure in total tertiary education ranks it among the countries in the first Cluster; Belgium and Sweden have a lower proportion (around 83%). Cluster 3 consists of the Czech Republic, Spain, and Slovenia, i.e., countries converging (with some lagging behind) towards more advanced European countries. Although their share of tertiary education expenditure in GDP is roughly the same (around 0.8 to 1% of GDP), their

proportions of public expenditure in total tertiary education expenditure vary. In the Czech Republic and Slovenia, the ratio is around 80%, while in Spain it is only 65%. The fourth Cluster consists of Germany, Estonia, the Netherlands, and Poland, where the proportion of public spending on tertiary education is, on average, at 1% of GDP, or 70% to 80% of total tertiary expenditure. Finally, the fifth and largest Cluster comprises Greece, Hungary, Italy, Lithuania, Latvia, Portugal, and Slovakia. These countries do not represent the most advanced economies in Europe and are, consequently, likely to face very similar constraints in the extent of public support for higher education. The proportions of public expenditure on tertiary education in these countries do not exceed 0.7% of GDP. The proportions of public expenditure in total tertiary-education expenditure range from 60% (Italy) to 75% (Greece). The data in Table 3 is complemented by a dendrogram – cf. Figure 3.
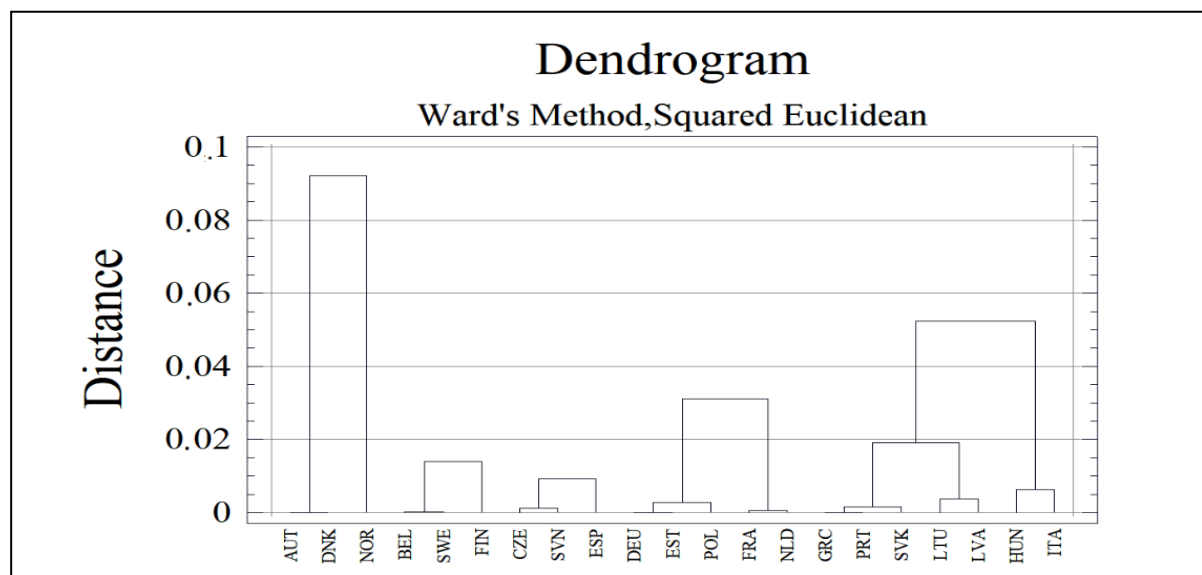


Figure 3.  Dendrogram – Public spending on tertiary education (in % of GDP)

The final indicator, which completes our analysis of tertiary education expenditure, is the proportion of total tertiary education expenditure in USD per student. From the results (cf. Table 4), we can see that the clusters formed according to this indicator are significantly different from those based on the previous indicators.

The Clusters based on the data concerning tertiary education expenditure in USD per student can be considered homogeneous to the extent that intra-group variability is indeed minimal (which is not the case for the Clusters in Tables 1 to 3). If we rank the clusters in ascending order of tertiary education expenditure, Greece is at the lowest rung, with a cost of less than USD 5,000 per student per year (similarly low expenditure per student can be found in Colombia, for example!).

| Cluster | Country |
|---|---|
| 1 | Austria (AUT), Belgium (BEL), Denmark (DNK), Germany (DEU), Netherlands (NLD) |
| 2 | Czech Republic (CZE), Estonia (EST), Finland (FIN), France (FRA) |
| 3 | Hungary (HUN), Spain (ESP), Italy (ITA), Latvia (LVA), Lithuania (LTU), Poland (POL), Portugal (PRT), Slovakia (SVK), Slovenia (SVN) |
| 4 | Greece (GRC) |
| 5 | Sweden (SWE), Norway (NOR) |

Source: https://data.oecd.org/searchresults/?q=Education, the authors' own calculations
Table 4. Spending on tertiary education (in USD/student)

The second very homogeneous group comprises countries in Cluster 3 with expenses between USD 11,000 and 14,000 per student per year (equivalent to those in Israel and Korea). The third homogeneous group consists of countries in Cluster 2 with expenditure values of around USD 17,000 per student per year (roughly equivalent to the OECD average). The fourth group comprises countries in Cluster 1 with spending between USD 20,000 and 22,000 per student per year, representing the amount spent per tertiary student in Australia. The most advanced among the countries assessed, i.e., Sweden and Norway, are then at the top, with expenditure reaching USD 25,000 per student per year (among European countries, only two spend higher amounts for this purpose: the UK (about USD 30,000) and Luxembourg (about USD 52,000); these two countries have not been included in our analysis). The data in Table 4 is illustrated in the corresponding dendrogram (cf. Figure 4).
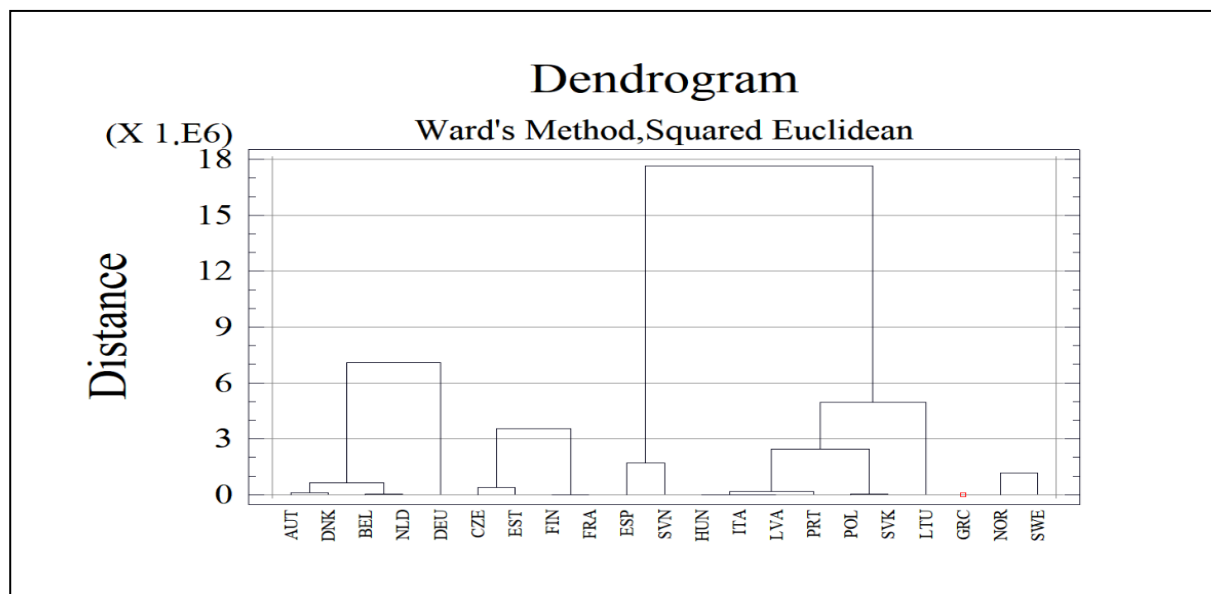


Figure 4. Dendrogram – Spending on tertiary education (in USD/student)

Our analysis shows that countries with high proportions of public resources in total tertiary education spending have the highest values of per-student expenditure on tertiary education. In the case of Norway, public resources account for 92% (the highest share among OECD countries) and in Sweden for 83% of total tertiary education spending. Cluster 1 countries also have a public proportion of more than 80% (with the exception of the Netherlands, where the share is only 70%). Cluster 2 countries account for between 70% and 76% of total tertiary education expenditure from public sources (here, an exception is Finland, with a 90% share). Public expenditure amounts in the countries in the largest Cluster 3 account for 60% to 70% of total tertiary education expenditure; the exception is Poland, with 80%. Greece's fiscal problems are also reflected in the financing of tertiary education; although public resources account for three-quarters of total tertiary spending in Greece, this country is, with less than USD 5,000 per student, at the lowest value of this indicator among OECD countries and, with such a low value, represents an outlying observation and a separate Cluster 4.

We can thus conclude that the high level of unit expenditure on tertiary education in the countries studied is associated not only with the advanced economic maturity of the respective countries (Norway, Sweden, Denmark, Germany, the Netherlands, and Austria) but also with a high proportion of public expenditure. The significant role of public sources in financing tertiary education in continental Europe is a consequence of the traditional views on education. Among the countries where private sources of tertiary education funding predominate, only in the UK and the US are expenditure per student values higher than that valid in Norway.

## CONCLUSIONS

The role of education is growing, as is the expenditure needed to develop it further. At the same time, the level of education in society is dramatically pushing up the level of knowledge, science and research, thereby materialising what an educated society produces. In other words, an advanced society places high financial demands not only on education itself but also on what educated people later produce. This fact actually represents additional pressure on funding sources; even though they mainly come from public funds, they also stimulate pressure on the private sector. A simple relationship therefore holds: the more educated the society (and the higher the level of tertiary education), the greater the pressure on not only maintaining the level of education but also the ability to apply the knowledge in practice.

This observation has been underlined by the developments in the recent 10-15 years when the world has had to withstand severe trials (the economic crisis of 2008-2013, COVID-19, and geopolitical problems). And higher education has had to cope with them as well. It is, therefore, valuable to study how governments, the private sector and households have responded to this situation and what their

options have been. And from this, above all, to deduce what path the financing tertiary education is likely to take in the coming years, because the demands on resources will undoubtedly increase, as will the needs concerning the education level in society.

Our analysis undoubtedly shows that economically rich countries have great opportunities. Their higher education is traditionally of high quality and with an extensive international reach. Nevertheless, there is also the important fact that the dividing line between the different levels of tertiary education's quality is not implied by education being paid more by households (i.e., students) and private institutions or by public budgets. The society's wealth determines this dividing line; where the economic level is lower, as our clusters above show, the prevailing relationship between "public" and "private" funding is different. And logically, the role of households that have to contribute to their children's education is also different. The inexpensive solutions often offered, consisting of simply shifting education costs primarily to households (by introducing or raising tuition fees to relieve public budgets), show that they are not ultimately effective, or even inexpensive. The analysis showed that the clusters formed from the tertiary education expenditure data in USD per student can be considered homogeneous regarding minimal intra-cluster variability. Countries within these clusters had very low variability also in terms of the share of public expenditure on total expenditure on tertiary education. In further research, we will monitor the clusters of countries created in this way from the point of view of the quality of tertiary education.

## ACKNOWLEDGMENT

## REFERENCES

Barr, N. (2001). "Financing Higher Education: The Options", in The Welfare State as Piggy Bank: Information, Risk, Uncertainty, and the Role of the State, Oxford University Press, Oxford, pp. 191–222, https://doi.org/10.1093/0199246599.003.0013.

Barro, R. J. and Lee, J. W. (2013), "A new data set of educational attainment in the world, 1950–2010", Journal of Development Economics, Elsevier, Vol. 104(C), pp. 184-198, DOI: 10.1016/j.jdeveco.2012.10.001.

Bils, M. and Klenow, P. (2000), "Does Schooling Cause Growth?" American Economic Review, No. 90, pp. 1160-1183, DOI: 10.1257/aer.90.5.1160.

Chapman, B. and Tulip, P. (2010), "Financing of Higher Education". In: International Encyclopedia of Education (3th edition), Elsevier Science, pp. 499-506. https://doi.org/10.1016/B978-0-08-044894-7.00857-5.

Cuesta, J. and Madrigal, L. (2014), "Equity in Education Expenditure in Thailand", Development Policy Review, Vol. 32, No. 2, pp. 239-258, DOI:10.1111/dpr.12053.

Golden, G., Troy, L. and Weko, T. (2021), "How are higher education systems in OECD countries resourced?: Evidence from an OECD Policy Survey", OECD Education Working Papers, No. 259, OECD Publishing, Paris, https://doi.org/10.1787/0ac1fbad-en.

Hyytinen H. and Toom A. (2019), "Developing a performance assessment task in the Finnish higher education context: Conceptual and empirical insights", British Journal of Educational Psychology, Vol. 89, No. 3, pp. 551-563,  https://doi.org/10.1111/bjep.12283.

Liu, Y., Tan, Z. and Ning, X. (2021), "Public education expenditure and economic growth: based on panel data from 2009 to 2019 in China ", World Journal of Advanced Research and Reviews, Vol. 11, No. 2, pp. 184–192, https://doi.org/10.30574/wjarr.2021.11.2.0376.

Liu, S., Xuechun C., Enhao W., and Xuyan W. (2020), "Diversifying Funding Sources for Public Higher Education in China During Massification", Education As Change 24, https://doi.org/10.25159/1947-9417/7158.

Long N.V. (2019), "Financing higher education in an imperfect world", Economics of Education Review, Vol. 71 (C), pp. 23-31, DOI: 10.1016/j.econedurev.2018.06.004

Mallick, L., Das, P. and K. Pradhan (2016), "Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis", Theoretical and Applied Economics, Vol. XXIII, No. 2, pp. 173-186.

Mihaiu, D. (2010), "Study Regarding The Efficiency Of Public Spending On Education At Eu Level Through Benchmarking," Studies in Business and Economics, Lucian Blaga University of Sibiu, Faculty of Economic Sciences, Vol. 5, No. 3, pp. 201-214.

OECD (2018a), "How does the earnings advantage of tertiary-educated workers evolve across generations?", Education Indicators in Focus, No. 62, OECD Publishing, Paris, https://doi.org/10.1787/3093362c-en.

OECD (2018b), "How is the tertiary-educated population evolving?", Education Indicators in Focus, No. 61, OECD Publishing, Paris, https://doi.org/10.1787/a17e95dc-en.

OECD (2020), "How has private expenditure on tertiary education evolved over time and how does it affect participation in education?", Education Indicators in Focus, No. 72, OECD Publishing, Paris, https://doi.org/10.1787/6b7ded53-en.

OECD (2021), Education at a Glance 2021: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/b35a14e5-en.

OECD (2022), Education at a Glance 2022: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/3197152b-en.

Rasmussen, P. (2022), "Educational research – public responsibility, private funding?", Nordic Journal of Studies in Educational Policy,  Vol. 8, No. 1, pp. 65-74, DOI: 10.1080/20020317.2021.2018786.

Stachowiak-Kudła, M. and Kudła, J. (2017), "Financial regulations and the diversification of funding sources in higher education institutions: selected European experiences", Studies in Higher Education, Vol. 42, No. 9, pp. 1718-1735, DOI: 10.1080/03075079.2015.1119109.

Yotova, L. and Stefanova, K. (2017), "Efficiency of Tertiary Education Expenditure in CEE Countries: Data Envelopment Analysis", Economic Alternatives Journal, Vol. 3, pp. 352-364, https://ssrn.com/abstract=3099398.

# AREA OF RESIDENCE AND INCOME INTRAGENERATIONAL COHORT DIFFERENCES OF GENERATION Z IN INTENTION TO TRY EDIBLE INSECTS

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## ABSTRACT

This research presents the area of residence and income intragenerational cohort differences with the intention to try certain edible insects and insect-based foods and drinks. For this purpose, a questionnaire was used that listed 22 edible insects and insect-based foods and drinks, and participants were asked if they were willing to try them. A non-probability sampling procedure and an on-line data collection method was used targeting the adult generation Z cohort, and through this procedure, 742 members of the Greek generation Z cohort participated in the study. Data analysis used the SPSS ver.28 software, and the influence of area of residence and income was examined using chi-square tests. The results showed that in some cases consumers' area of residence and income influenced the generation Z cohort's intention to try the listed items. Specifically, the area of residence showed a statistically significant difference with the intention to try deep-fried crickets and a drink containing silkworm protein. Income showed a statistically significant difference with the intention to try crickets, mealworms, scarab, spiders and scorpions, caterpillars, and cicadas. This study provides useful insight of the youngest adult generational cohort's intention to consume a very specific category of alternative meat protein source of food. The present research is considered original since prior research on intragenerational cohort differences of area of residence and income regarding entomophagy has not been found.

*Keywords: entomophagy, generation Z cohort, consumer behavior, intragenerational differences, communication, marketing.*

## INTRODUCTION

The main aim of this paper is to investigate the area of residence and income intragenerational differences of the generation Z cohort in terms of entomophagy (intention to try certain edible insects and insect-based food and drinks), which, to our knowledge, has not been explored yet. Therefore, this paper contributes to the literature by providing insight into the intragenerational differences in the behavior of the youngest adult cohort regarding entomophagy.

Entomophagy is considered the food of the future to combat the impending world food shortages and environmental problems due to high consumption of animal protein (Woolf et al., 2019). This solution is presented by researchers due to the good nutritional value of insects (Bukkens, 1997), high feed conversion rate (van Broekhoven et al., 2015) and low environmental footprints (Dobermann et al., 2017; Ros-Baró et al., 2022).

As insect-based proteins appear to be a sustainable alternative to meat protein, a new transformative industry is emerging to capitalize on this promising resource – the insect-based food industry (Dossey et al., 2016). The global edible insects' market has been estimated at USD 104.74 million from 2021 to 2022 and is expected to grow at a CAGR of 20.66% during the forecast period to reach USD 323.28 million by 2030 (Marketwatch, 2023).

Though, entomophagy is not something new and has been demonstrated in ancient times (Evans et al., 2015). Today entomophagy is part of the human diet in several countries (Bukkens, 1997), resulting to at least 2 billion people consuming insects (Van Huis et al., 2013). However, in Western countries, entomophagy is reportedly not practiced by a large portion of the population and acceptance is very low (Bodenheimer, 2013; Kamenidou et al., 2023; Orsi et al., 2019).

Demographic trends appear to play a role in individuals' dietary habits and acceptance of insects as food (Brunner and Nuttavuthisit, 2019; Niva and Vainio, 2021).  For example, income (e.g., Salonen, 2023) age (e.g., Medoro et al., 2022) and area of residence (e.g., Chen et al., 2022; Marchioni et al., 2022) have been found to impact on food consumption behavior.

With respect to entomophagy, which is the focus of this study, in terms of age, the perspective of generational cohorts on consumer acceptance of entomophagy is of particular interest and especially referring to the younger generational cohorts, as they are the future consumers and workforce of a country (Kamenidou et al., 2020). Generational cohorts include people who were born in a particular place and time and experienced the same life-changing events when they "came of age" thus shaping the behavior of that cohort (Mannheim, 1970).

Members of the Z generational cohort, the youngest cohort of adults, were born between 1995 and 2009 (Williams and Page, 2011). They are aware of sustainability issues, value convenience and innovation, and are tech-savvy (Khatri and Dixit, 2016; Kymäläinen et al., 2021; Nagy, 2017).

Despite the fact that the members of a given generational cohort have similarities, in the literature it is pointed out that there are differences between the members inside the same cohort, the so-called intragenerational cohort differences (Radaev, 2021). Intragenerational cohort differences are generally an under-researched topic, especially when compared to intergenerational cohort differences, i.e., differences between varying generational cohorts (Mulvey et al., 2020). Pickard (2019) points out that young people (i.e., Gen Y & Gen Z) are not a homogeneous block and there are intragenerational cohort differences depending on the disparate factors studied. Prior studies have found intragenerational differences within members of the Z cohort in their workplace behaviors and priorities (Benítez-Márquez et al., 2022; Leslie et al., 2021; Schroth, 2019), variability in social media use (Mulvey et al., 2020) and information and communication technology literacy (Soysal et al., 2019). In addition, a handful of studies were found related to intragenerational differences and food consumption (e.g., Brombach et al., 2014).

Area of residence and income intragenerational differences of the Z cohort are understudied as a topic too. Regarding entomophagy, the literature revealed that, to our knowledge, only a handful of studies addressed insect consumption and generational cohort behavior (Ardoin, 2021; Escalante-Aburto et al., 2022; Fasanelli et al., 2020; Johansson and Gustafsson, 2018; Kamenidou et al., 2023; Rovai et al., 2022; Schubiger et al., 2022; Sogari et al., 2019; Tzompa-Sosa et al., 2023). And as noted above, no study was found that examined intragenerational differences in entomophagy behavior among the Z cohort in general and specifically in relation to income and area of residence.

From the above, it is clear that there is a gap in academia regarding intragenerational differences in the Z cohort with respect to entomophagy. A gap that this research attempts to partially fill. Therefore, this study contributes to the previous literature by reducing the gap of knowledge regarding generational cohort behavior towards entomophagy, and in particular, behavior of the generation Z cohort, which is extremely rare in academia.

The remainder of the paper is organized as follows: First, the literature review and research methodology are presented. The results are described, and then follow the discussion, limitations, and directions for further research.

## LITERATURE REVIEW

Since no direct research was found that addressed the elements of this study (insect consumption of Generation Z and intragenerational differences based on area of residence and income), the literature review presents some work that is related in one way or another to the research objective. These papers were selected because they examined the effects of area of residence and/or income on entomophagy. Additionally, papers on generation Z and entomophagy are also presented. It is reiterated that none of

the following papers combined generational cohort behavior and entomophagy or intragenerational cohort differences and entomophagy in their study.

Dürr and Ratompoarison (2021), in their study of insect consumption in Madagascar (N=216), did not find differences in the amount of insect consumption according to residence (rural vs. urban) or household income (rich vs. poor families). On the other hand, Hlongwane et al. (2020) reported that insect consumption differs by residential area in South Africa (N=622). The same is true in Brazil, where the urban population refuses to accept insects as food, while some rural residents have them in their daily diet (Bisconsin-Júnior et al., 2022). Tzompa-Sosa et al. (2023, p. 11) examined among others "acceptance level (%) of the introduction of mealworms, either whole or processed, into the diet of the five different countries (Belgium, China, Italy, Mexico, and the US)" and found that "The countries with a low acceptance level were Belgium, Italy, and the US, whereas the populations showing a high acceptance level were the Mexican and the Chinese" (p. 9).

Matandirotya et al. (2022) report that low-income families in Africa are more likely to consume insects because they are a cheaper alternative to meat protein. In contrast, the study of Aung et al. (2023) in Myanmar (N=872) found that higher-income individuals consumed insects more regularly than their lower-income peers, while studies in Kenya and China showed that income did not affect the frequency of edible insect consumption (Kisaka, 2018; Liu et al., 2019).

As to generational cohorts' behavior and entomophagy, Kamenidou et al. (2023) explored behavior and attitudes of Gen Zers towards insect consumption. The authors also measured intention to try the (same) list of the insects and insect-based food and drinks, and found that the Gen Zers are generally unwilling to try them. Schubiger et al. (2022) present what they intend to study in their paper, which is the role of AR (augmented reality) and VR (virtual reality) in persuading Gen Zers to try insect-based food, and which of the two was more effective. Sogari et al. (2019, p.11) found that "younger respondents (e.g., Generation Z) were more willing to try edible insects based on better awareness about the environmental benefits of using this protein source compared to animal-based products." Mendini and Schubiger, (2022) explored "how to increase willingness to eat insect-based food among Generation Z consumers" and found that "if entomophagy is properly communicated to consumers and hence consumers are well-informed about the benefits related to such novel and alternative food consumption, willingness to eat insect-based food increases."

## METHODOLOGY

This study is part of a larger study and its data was collected via an online distributed questionnaire using a nonprobability sampling method that included criteria, convenience and snowball sampling (Stavrianea and Kamenidou, 2022; Kamenidou et al., 2023). The criteria for participation in the research

were to be a member of the adult generation Z cohort, have access to internet, and provide consent for data use). The questionnaire was adopted from Kamenidou et al. (2023), regarding the listed items (N=22), as well as the answer scale used (dichotomous scale: yes-no). Via the internet 742 valid responses were collected and were suitable for data analysis. The program SPSS ver. 28 was used for the analysis which included descriptive statistics and chi-square tests.

## RESULTS

*Sample profile*

Male subjects accounted for 56.3% of the sample, while female subjects accounted for 43.7%. Furthermore, younger members of the Z cohort (18-20 years of age) were overrepresented, as were single subjects who had completed secondary school and those who were attending university. In terms of area of residence and net monthly family income (in euros), which is for this paper, the focus of the socioeconomic and demographic characteristics of the Z cohort, the following picture emerges. Regarding to area of residence the majority lived in the city (N=535;72.1%), 13.5% (N=100) live in towns and 14.4% live in villages (N=107). As to their net monthly family income this was ≤600.0€ for most participants (N=326; 43.9%); while 26.0% (N=193) had income ranging from 600.01–1000.00€; 16.4% (N=122) from 1000.01–2000.00€, and 13.7% (N=101) had a monthly net family income ≥2000.01€. It should be noted that the income of Greek Z cohort members living or studying alone, was calculated as the amount they receive from their parents plus any other income they may have (e.g., from a part-time or full-time job).

*Intention to try insects or insect-based foods or drinks*

No one (0.0%) had previous experience, to their knowledge, with entomophagy, i.e., no member of the generation Z cohort had ever eaten edible insects, at least to their knowledge. Participants of the generation Z cohort were presented a list of 22 items, which were insects or insect-based foods or drinks and asked to indicate whether they would be willing to try them. Table 1 presents generation Z cohorts' intention to try the presented items according to where they lived (%), i.e., city, town, or village. Table 1 reveal that the participants, regardless their area of residence, are more willing to try insect or insect-based foods or drinks where the insects are not visible, which is generally very low (<15%).

| | City | | Town | | Village | | Total |
|---|---|---|---|---|---|---|---|
| Insect | yes | no | yes | no | yes | no | % |
| Grasshoppers | 11.1 | 61.1 | 1.8 | 11.7 | 1.1 | 13.3 | 100.0 |
| Crickets | 7.5 | 64.6 | 1.6 | 11.9 | 0.9 | 13.5 | 100.0 |
| Mealworm | 8.4 | 63.7 | 1.2 | 12.3 | 1.1 | 13.3 | 100.0 |
| Ants | 10.9 | 61.2 | 1.9 | 11.6 | 1.2 | 13.2 | 100.0 |
| Cockroaches | 6.9 | 65.2 | 1.3 | 12.1 | 1.1 | 13.3 | 100.0 |
| Scarab | 6.7 | 65.4 | 1.1 | 12.4 | 0.7 | 13.7 | 100.0 |
| Spiders and scorpions | 8.6 | 63.5 | 1.9 | 11.6 | 0.9 | 13.5 | 100.0 |
| Worms | 7.7 | 64.4 | 1.5 | 12.0 | 1.3 | 13.1 | 100.0 |
| Caterpillars | 7.5 | 64.6 | 1.2 | 12.3 | 0.9 | 13.5 | 100.0 |
| Cicadas | 9.3 | 62.8 | 1.6 | 11.9 | 1.1 | 13.3 | 100.0 |
| Fried/grilled/toasted whole insect | 14.3 | 57.8 | 2.8 | 10.6 | 2.3 | 12.1 | 100.0 |
| Sugar/chocolate covered insect | 11.1 | 61.1 | 2.4 | 11.1 | 1.2 | 13.2 | 100.0 |
| Ground insects in sauces/chutneys | 12.3 | 59.8 | 2.8 | 10.6 | 2.0 | 12.4 | 100.0 |
| Ground insects in burger/meatball/nuggets | 12.0 | 60.1 | 3.2 | 10.2 | 1.8 | 12.7 | 100.0 |
| Bakery products containing insect flour | 14.4 | 57.7 | 3.2 | 10.2 | 2.8 | 11.6 | 100.0 |
| Rice/pasta enriched with insect flour | 14.3 | 57.8 | 3.0 | 10.5 | 2.3 | 12.1 | 100.0 |
| Protein bars containing insect protein isolate | 13.5 | 58.6 | 3.0 | 10.5 | 2.4 | 12.0 | 100.0 |
| Deep-fried silkworms | 8.1 | 64.0 | 2.4 | 11.1 | 1.1 | 13.3 | 100.0 |
| Deep-fried crickets | 10.2 | 61.9 | 2.8 | 10.6 | 0.9 | 13.5 | 100.0 |
| Cookies based on cricket flour | 14.7 | 57.4 | 2.6 | 10.8 | 1.9 | 12.5 | 100.0 |
| Chocolate chip cookies based on cricket flour | 12.9 | 59.2 | 2.7 | 10.8 | 2.3 | 12.1 | 100.0 |
| A drink containing silkworm protein | 11.6 | 60.5 | 3.4 | 10.1 | 1.5 | 12.9 | 100.0 |

Table 1. Intention to try insects or insect-based foods or drinks based on the generation Z cohort's area of residence (%)

Table 2 presents generation Z cohorts' intention to try the presented items based on their family's net monthly income. The participants regardless their family's net monthly income, are willing to try insect or insect-based foods or drinks where the insects are not visible (except for one case: Cicadas in high income families), and this willingness to try is very low (<10%).

| | <600.00€ | | 600.01-1000.00 | | 1000.01-2000.00 | | >2000.00 | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | yes | no | yes | no | yes | no | yes | no | % |
| Grasshoppers | 6.1 | 37.9 | 3.0 | 23.0 | 2.3 | 14.2 | 2.6 | 11.1 | 100.0 |
| Crickets | 3.9 | 40.0 | 2.2 | 23.9 | 1.6 | 14.8 | 2.4 | 11.2 | 100.0 |
| Mealworm | 4.6 | 39.4 | 1.8 | 24.3 | 1.5 | 15.0 | 2.8 | 10.8 | 100.0 |
| Ants | 6.5 | 37.5 | 3.0 | 23.0 | 2.2 | 14.3 | 2.4 | 11.2 | 100.0 |
| Cockroaches | 4.2 | 39.8 | 1.8 | 24.3 | 1.6 | 14.8 | 1.8 | 11.9 | 100.0 |
| Scarab | 4.3 | 39.6 | 1.3 | 24.7 | 0.9 | 15.5 | 1.9 | 11.7 | 100.0 |
| Spiders and scorpions | 4.9 | 39.6 | 1.8 | 24.6 | 1.1 | 14.2 | 2.5 | 11.3 | 100.0 |
| Worms | 5.1 | 38.8 | 1.8 | 24.3 | 1.5 | 15.0 | 2.2 | 11.5 | 100.0 |
| Caterpillars | 4.3 | 39.6 | 1.2 | 24.8 | 1.3 | 15.1 | 2.8 | 10.8 | 100.0 |
| Cicadas | 5.0 | 38.9 | 2.0 | 24.0 | 1.9 | 14.6 | 3.1 | 10.5 | 100.0 |
| Fried/grilled/toasted whole insect | 8.6 | 35.3 | 4.7 | 21.3 | 3.6 | 12.8 | 2.4 | 11.2 | 100.0 |
| Sugar/chocolate covered insect | 7.3 | 36.7 | 2.8 | 23.2 | 2.8 | 13.6 | 1.8 | 11.9 | 100.0 |
| Ground insects in sauces/chutneys | 8.2 | 35.7 | 4.3 | 21.7 | 1.9 | 14.6 | 2.7 | 10.9 | 100.0 |
| Ground insects in burger/meatball/nuggets | 7.8 | 36.1 | 3.8 | 22.2 | 2.8 | 13.6 | 2.6 | 11.1 | 100.0 |
| Bakery products containing insect flour | 9.0 | 34.9 | 5.7 | 20.4 | 2.8 | 13.6 | 3.0 | 10.6 | 100.0 |
| Rice/pasta enriched with insect flour | 9.8 | 34.1 | 4.0 | 22.0 | 3.6 | 12.8 | 2.0 | 11.6 | 100.0 |
| Protein bars containing insect protein isolate | 9.8 | 34.1 | 4.3 | 21.7 | 3.0 | 13.5 | 1.8 | 11.9 | 100.0 |
| Deep-fried silkworms | 6.6 | 37.3 | 2.0 | 24.0 | 1.5 | 15.0 | 1.5 | 12.1 | 100.0 |
| Deep-fried crickets | 7.0 | 36.9 | 2.8 | 23.2 | 2.2 | 14.3 | 2.0 | 11.6 | 100.0 |
| Cookies based on cricket flour | 8.8 | 35.2 | 4.0 | 22.0 | 3.1 | 13.3 | 3.2 | 10.4 | 100.0 |
| Chocolate chip cookies based on cricket flour | 8.9 | 35.0 | 4.0 | 22.0 | 2.3 | 14.2 | 2.7 | 10.9 | 100.0 |
| A drink containing silkworm protein | 7.8 | 36.1 | 3.2 | 22.8 | 2.7 | 13.7 | 2.7 | 10.9 | 100.0 |

Table 2. Intention to try insects or insect-based foods or drinks based on the generation Z cohort's net monthly family income (%)

*Intragenerational differences towards intention to try edible insects and insect-based food and drinks based on area of residence and family net monthly income*

Table 3 offers the outcome of the chi-square tests exploring intragenerational differences in intention to try edible insects and insect-based foods and drinks based on area of residence and family net monthly income. It is noted that 44 chi square tests were examined (22 for area of residence and 22 for income), and only eight produced statistically significant differences, which are the only ones presented in Table 3. The results of the chi-square tests indicate that, in some cases, there is a significant relationship

between consumers' area of residence, their net family income and their intention to try some of the listed edible insects and insect-based foods and drinks.

| Insect | Variable | X2 | df | P |
|---|---|---|---|---|
| 1. Deep-fried crickets | Area of residence | 9.023 | 2 | 0.012* |
| 2. A drink containing silkworm protein | Area of residence | 8.340 | 2 | 0.015* |
| 3. Crickets | Income | 7.853 | 3 | 0.049* |
| 4. Mealworm | Income | 14.388 | 3 | 0.002* |
| 5. Scarab | Income | 8.397 | 3 | 0.038* |
| 6. Spiders and scorpions | Income | 9.638 | 3 | 0.022* |
| 7. Caterpillars | Income | 20.090 | 3 | 0.000* |
| 8. Cicadas | Income | 14.534 | 3 | 0.002* |

Table 3. Intragenerational differences towards intention to try edible insects and insect-based food and drinks based on area of residence and family net monthly income

Based on Table 3, the following can be deduced. Chi square tests revealed statistically significant differences as regards area of residence and intention to try deep-fried crickets and try a drink containing silkworm protein, ($\chi^2$=9.023, p=0.012 and $\chi^2$ =8.340, p=0.015 respectively). Additionally, observation of the two-way tables revealed that as to the total participants, the highest percentage of yes responses came from people residing in cities in both cases (73.1% and 70.5% respectively). On the other hand, observation per category of area of residence, the highest percentage of "yes" came from those residing in towns. Specifically, from the 100% of the participants residing in towns, 21.0% answered "yes" they were willing to try deep-fried crickets (being the highest compared to the other area of residence classes). Lastly, from the 100% of the participants residing in towns, 25.0% answered "yes" they were willing to try a drink containing silkworm protein (being the highest compared to the other area of residence classes).

Referring to net family's monthly income and willing to try the listed items, the following were observed. Chi square tests revealed statistically significant differences between family income and intention to try crickets, mealworms, and scarabs, ($\chi^2$ =7.853, p=0.049, $\chi^2$ =14.388, p=0.002 and $\chi^2$ =8.397, p=0.038 respectively). Additionally, observation of the two-way tables of the chi square test revealed that as to the total participants, the highest percentage of the "yes" responses come from the low-income families (38.7% <600.00; 43.0% <600.00 and 50.8% <600.00 respectively). On the other hand, observation per category of family income, the highest percentage of "yes" derive from those of high-income families. Specifically, from the 100% of the participants with income >2000.00, the 17.8%, 20.8%

and 13.9% answered "yes", for crickets, mealworms, and scarabs respectively (being the highest compared to the other income classes).

Also, chi square tests revealed statistically significant differences between family income and intention to try spiders and scorpions, caterpillars, and cicadas, ($\chi_3^2$ =9.636, p=0.022, $\chi_3^2$ =20.090, p=0.000, and $\chi_3^2$ =14.534, p=0.002 respectively). Additionally, observation of the two-way tables revealed that as to the total participants, the highest percentage of "yes" responses comes from the low-income families (42.4% <600.00; 44.4% <600.00 and 41.6% <600.00 respectively). Though, through a closer observation per category of family income, it is revealed that the highest percentage of "yes" are obtained from those of high-income families. Specifically, from the 100% of the participants with income >2000.00, the 17.8%, 20.8% and 22.8% answered "yes", for spiders and scorpions, caterpillars, and cicadas respectively (being the highest compared to the other income classes).

## DISCUSSION

To our knowledge, there is no research on the intragenerational differences of the Z cohort's area of residence and family income in terms of intention to try edible insects and insect-based foods and drinks. Therefore, all comparisons are made with extreme caution. Referring to the intention to try 22 listed items, participants regardless of their area of residence or family's net monthly income, are "willing to try" insect or insect-based foods or drinks where the insects are not visible (excluding one case: Cicadas in high-income families). Though, this willingness to try is very low: <15% regarding area of residence and <10% based on net family monthly income. Also, the results of the chi-square tests indicate that in some cases there is a significant relationship between generation Z cohort's residence as well as net family income and their intention to try some of the listed edible insects and insect-based foods and drinks. This result is not consistent with the results of the three studies mentioned in the literature review section (Dürr and Ratompoarison, 2021; Kisaka, 2018; Liu et al., 2019). On the other hand, Bisconsin-Júnior et al. (2022) reached similar conclusions to the present study, finding significant differences in insect consumption according to residential area. The findings are also partial in line with the ones of Kamenidou et al. (2023) who found that the generation Z cohort would try the foods and drinks that the insects are not visible, though they did not include in their study area of residence, income, nor did they examine intragenerational differences. It was also found that in all cases regarding the area of residence and intention to try the selected items the highest percentage of the "yes" responses came from people residing in cities, while per area of residence per class, comes from those residing in towns. Regarding the area of residence categories, the present study indirectly contrasts with the results of Dürr and Ratompoarison (2021) who found no differences in the regularity of insect consumption according to place of residence.

Regarding the generation Z cohort's family net monthly income, the highest percentage of the "yes" responses came from the low-income families, which corresponds with the fact that the lowest income people and city dwellers make up by far the largest percentage of the sample. In addition, meat is becoming more expensive, so lower-income families may be more inclined to turn to cheaper alternatives, which is already the case in Africa as mentioned in the study of Matandirotya et al. (2022). Though, as per income class, the highest percentage of "yes" in all cases that produced statistically significant differences, comes from the highest income ones. An explanation for this could be that high-income Z cohort members are enticed by this type of food as a potentially exotic response to insect-based foods. This result is in line with the findings of Aung et al. (2023) who found that higher income individuals consumed insects more regularly, but contrasts with other studies that found no relationship between income and insect consumption (Kisaka, 2018; Liu et al., 2019). Though, as mentioned above, none of them focused on generational cohorts, generation Z cohort or intragenerational differences. Also, they did not refer to the specific items, so every comparison is made with caution.

The result of this study arises the issue of sustainability awareness and information regarding insects as future food. Previous research proves that there is a connection between environmental conscious behavior and intention to consume insects (Hartmann et al., 2018). Additionally, as previous research points out (e.g., Batat and Peter, 2020) consumers need to be educated about the benefits of entomophagy. Therefore, communication marketing is needed to raise awareness and provide information, through contemporary communication channels, since generation Z is technologically savvy (Jain and Raman, 2022).

## IMPLICATIONS

In terms of theoretical implications and contributions, our study adds to previous academic work as it is one of the few studies that address intragenerational cohort differences regarding food. Moreover, the best of our knowledge, it is the only one to address the generation Z intragenerational cohort differences referring to area of residence and income differences towards intention to try 22 listed insects, insect-based foods, and drinks. From a practical perspective, the results clearly reveal that the generation Z cohort is not willing to try the listed items. Though, there were also a small percentage (<15%) that are willing to engage in indirect entomophagy. It is also evident that the generation Z participants in general that reside in cities and have low incomes are more willing to try the listed insect-based food and drinks. Therefore, the present research provides insight into the primary determinant intention to try these novel foods and drinks which may lead marketers to develop strategies and campaigns to increase willingness to try.

## LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

This study is not free of limitations, although considerable effort has been made to minimize them as much as possible. The issue of entomophagy in Western society is a topic of growing interest, research is ongoing but still in its infancy, particularly with respect to generational cohorts' behavior. Therefore, the fact that this study is exploratory (to our knowledge, no study on this topic has been found) is already a limitation. Another limitation derives from data collection (online- nonprobability) as well as the sample selected (one cohort- one country). Because of these two limitations and in view of the results, no generalizations can be made from the sample to the population. Another issue is that the paper presents results of an ongoing, larger research effort, so changes may still occur. Lastly, another limitation concerns what would motivate the generation Z cohort to try these selected edible insects and insect-based foods and drinks. These limitations provide guidance for further investigation and validation of the results of this study. Despite the above limitations, this study provides insight into the generation Z perspective and more specifically the impact of their area of residence and income on their consumption behavior towards entomophagy, a topic that has been neglected in academia.

## REFERENCES

Ardoin, R.P. (2021), Evaluating US Consumers' Perception of Foods Made with Cricket Powder, Unpublished Doctoral Dissertation, Louisiana State University and Agricultural & Mechanical College, Louisiana.

Aung, M.T.T., Dürr, J., Borgemeister, C. and Börner, J. (2023), "Factors affecting consumption of edible insects as food: entomophagy in Myanmar", Journal of Insects as Food and Feed, pp. 1–20, doi: 10.3920/JIFF2022.0151.

Batat, W. and Peter, P. (2020), "The healthy and sustainable bugs appetite: factors affecting entomophagy acceptance and adoption in Western food cultures", Journal of Consumer Marketing, Vol. 37 No. 3, pp. 291–303, doi: 10.1108/JCM-10-2018-2906.

Benítez-Márquez, M.D., Sánchez-Teba, E.M., Bermúdez-González, G. and Núñez-Rydman, E.S. (2022), "Generation Z Within the Workforce and in the Workplace: A Bibliometric Analysis", Frontiers in Psychology, Vol. 12, p. 736820, doi: 10.3389/fpsyg.2021.736820.

Bisconsin-Júnior, A., Rodrigues, H., Behrens, J.H., da Silva, M.A.A.P. and Mariutti, L.R.B. (2022), "'Food made with edible insects': Exploring the social representation of entomophagy where it is unfamiliar", Appetite, Vol. 173, p. 106001, doi: 10.1016/j.appet.2022.106001.

Bodenheimer, F.S. (2013), Insects as Human Food: A Chapter of the Ecology of Man, Springer.

van Broekhoven, S., Oonincx, D.G.A.B., van Huis, A. and van Loon, J.J.A. (2015), "Growth performance and feed conversion efficiency of three edible mealworm species (Coleoptera: Tenebrionidae) on diets composed of organic by-products", Journal of Insect Physiology, Vol. 73, pp. 1–10, doi: 10.1016/j.jinsphys.2014.12.005.

Brombach, C., Haefeli, D. and Bartsch, S. (2014), "What have we kept and what have we changed? A three generation study on nutrition and food handling.", Ernahrungs Umschau, No. 61(11), pp. 171–177, doi: 10.4455/eu.2014.029.

Brunner, T.A. and Nuttavuthisit, K. (2019), "A consumer-oriented segmentation study on edible insects in Switzerland and Thailand", British Food Journal, Vol. 122 No. 2, pp. 482–488, doi: 10.1108/BFJ-08-2018-0526.

Bukkens, S.G.F. (1997), "The nutritional value of edible insects", Ecology of Food and Nutrition, Vol. 36 No. 2–4, pp. 287–319, doi: 10.1080/03670244.1997.9991521.

Chen, G., Tan, W., Ran, N., Zhang, J. and Yan, B. (2022), "Do urban tourists prefer vegetarianism? An urban-rural comparison of vegetarian consumption in China", Frontiers in Nutrition, Vol. 9, p. 996158, doi: 10.3389/fnut.2022.996158.

Dobermann, D., Swift, J.A. and Field, L.M. (2017), "Opportunities and hurdles of edible insects for food and feed", Nutrition Bulletin, Vol. 42 No. 4, pp. 293–308, doi: 10.1111/nbu.12291.

Dossey, A.T., Tatum, J.T. and McGill, W.L. (2016), "Modern Insect-Based Food Industry: Current Status, Insect Processing Technology, and Recommendations Moving Forward", Insects as Sustainable Food Ingredients, Elsevier, pp. 113–152, doi: 10.1016/B978-0-12-802856-8.00005-3.

Dürr, J. and Ratompoarison, C. (2021), "Nature's 'Free Lunch': The Contribution of Edible Insects to Food and Nutrition Security in the Central Highlands of Madagascar", Foods, Vol. 10 No. 12, p. 2978, doi: 10.3390/foods10122978.

Escalante - Aburto, A., Rodríguez - Sifuentes, L., Ozuna, C., Mariscal - Moreno, R.M., Mulík, S., Guiné, R. and Chuck - Hernández, C. (2022), "Consumer perception of insects as food: Mexico as an example of the importance of studying socio - economic and geographical differences for decision - making in food development", International Journal of Food Science & Technology, Vol. 57 No. 10, pp. 6306–6316, doi: 10.1111/ijfs.15995.

Evans, J., Alemu, M.H., Flore, R., Frøst, M.B., Halloran, A., Jensen, A.B., Maciel-Vergara, G., et al. (2015), "'Entomophagy': an evolving terminology in need of review", Journal of Insects as Food and Feed, Vol. 1 No. 4, pp. 293–305, doi: 10.3920/JIFF2015.0074.

Fasanelli, R., Galli, I., Riverso, R. and Piscitelli, A. (2020), "Social Representations of Insects as Food: An Explorative-Comparative Study among Millennials and X-Generation Consumers", Insects, Vol. 11 No. 10, p. 656, doi: 10.3390/insects11100656.

Hartmann, C., Ruby, M.B., Schmidt, P. and Siegrist, M. (2018), "Brave, health-conscious, and environmentally friendly: Positive impressions of insect food product consumers", Food Quality and Preference, Vol. 68, pp. 64–71, doi: 10.1016/j.foodqual.2018.02.001.

Hlongwane, Z.T., Slotow, R. and Munyai, T.C. (2020), "Indigenous Knowledge about Consumption of Edible Insects in South Africa", Insects, Vol. 12 No. 1, p. 22, doi: 10.3390/insects12010022.

Jain, N., and Raman, T. V. (2022), "The interplay of perceived risk, perceive benefit and generation cohort in digital finance adoption", EuroMed Journal of Business, (ahead of print, p. 1450-2194, DOI 10.1108/EMJB-09-2021-0132), on Emerald Insight at: https://www.emerald.com/insight/1450-2194.htm

Johansson, H. and Gustafsson, J. (2018), "How do edible insects fly among Swedish consumers?: Exploring consumers' evaluation of edible insects as a meat substitute".

Kamenidou, I. (Eirini), Mamalis, S., Gkitsas, S., Mylona, I. and Stavrianea, A. (2023), "Is Generation Z Ready to Engage in Entomophagy? A Segmentation Analysis Study", Nutrients, Vol. 15 No. 3, p. 525.

Kamenidou, I., Stavrianea, A. and Bara, E.-Z. (2020), "Generational Differences toward Organic Food Behavior: Insights from Five Generational Cohorts", Sustainability, Vol. 12 No. 6, p. 2299, doi: 10.3390/su12062299.

Khatri, K. and Dixit, N. (2016), "Managing Aspiration of Generation" Y" and Generation" Z" at work place.", Khoj Journal of Indian Management Research & Practices.

Kisaka, C.N. (2018), "Evaluation of consumers acceptance and pricing of edible winged termites (Macrotermes subhylanus) in Kimilili Sub-County, Kenya", Egerton University.

Kymäläinen, T., Seisto, A. and Malila, R. (2021), "Generation Z Food Waste, Diet and Consumption Habits: A Finnish Social Design Study with Future Consumers", Sustainability, Vol. 13 No. 4, p. 2124, doi: 10.3390/su13042124.

Leslie, B., Anderson, C., Bickham, C., Horman, J., Overly, A., Gentry, C., Callahan, C., et al. (2021), "Generation Z Perceptions of a Positive Workplace Environment", Employee Responsibilities and Rights Journal, Vol. 33 No. 3, pp. 171–187, doi: 10.1007/s10672-021-09366-2.

Liu, A.-J., Li, J. and Gómez, M.I. (2019), "Factors Influencing Consumption of Edible Insects for Chinese Consumers", Insects, Vol. 11 No. 1, p. 10, doi: 10.3390/insects11010010.

Mannheim, K. (1970), "The problem of generations", Psychoanalytic Review, National Psychological Association for Psychoanalysis, Vol. 57 No. 3, pp. 378–404.

Marchioni, D.M., Cacau, L.T., De Carli, E., Carvalho, A.M. de and Rulli, M.C. (2022), "Low Adherence to the EAT-Lancet Sustainable Reference Diet in the Brazilian Population: Findings from the National Dietary Survey 2017–2018", Nutrients, Vol. 14 No. 6, p. 1187, doi: 10.3390/nu14061187.

Marketwatch. (2023), "Global Edible Insects Market [2023-2030] | Discover the Market Upcoming Performance with Detailed Statistical Report", MarketWatch, available at: https://www.marketwatch.com/press-release/global-edible-insects-market-2023-2030-discover-the-market-upcoming-performance-with-detailed-statistical-report-2023-04-24 (accessed 26 May 2023).

Matandirotya, N.R., Filho, W.L., Mahed, G., Maseko, B. and Murandu, C.V. (2022), "Edible Insects Consumption in Africa towards Environmental Health and Sustainable Food Systems: A Bibliometric Study", International Journal of Environmental Research and Public Health, Vol. 19 No. 22, p. 14823, doi: 10.3390/ijerph192214823.

Medoro, C., Cianciabella, M., Magli, M., Daniele, G.M., Lippi, N., Gatti, E., Volpe, R., et al. (2022), "Food Involvement, Food Choices, and Bioactive Compounds Consumption Correlation during COVID-19 Pandemic: How Food Engagement Influences Consumers' Food Habits", Nutrients, Vol. 14 No. 7, p. 1490, doi: 10.3390/nu14071490.

Mendini, M. and Schubiger, M.D. (2022), "Willingness to eat insect-based food among Generation Z consumers: the role of correct information and communication.", AMA Summer Academic Conference, presented at the AMA Summer Academic conference, Chicago, Illinois.

Mulvey, M.S., Lever, M.W. and Elliot, S. (2020), "A Cross-National Comparison of Intragenerational Variability in Social Media Sharing", Journal of Travel Research, Vol. 59 No. 7, pp. 1204–1220, doi: 10.1177/0047287519878511.

Nagy, S. (2017), "The impact of country of origin in mobile phone choice of generation Y and Z", Journal of Management and Training for Industries, Institute of Industrial Applications Engineers, Fukuoka, Japan, Vol. 4 No. 2, pp. 16–29.

Niva, M. and Vainio, A. (2021), "Towards more environmentally sustainable diets? Changes in the consumption of beef and plant- and insect-based protein products in consumer groups in Finland", Meat Science, Vol. 182, p. 108635, doi: 10.1016/j.meatsci.2021.108635.

Orsi, L., Voege, L.L. and Stranieri, S. (2019), "Eating edible insects as sustainable food? Exploring the determinants of consumer acceptance in Germany", Food Research International, Vol. 125, p. 108573, doi: 10.1016/j.foodres.2019.108573.

Pickard, S. (2019), Politics, Protest and Young People: Political Participation and Dissent in 21st Century Britain, Palgrave Macmillan, London.

Radaev, V.V. (2021), "Historical and Empirical Evidence for the Schism in the Millennial Generation (Part 1)", Sociological Research, Vol. 59 No. 1–3, pp. 1–31, doi: 10.1080/10610154.2022.2111188.

Ros-Baró, M., Casas-Agustench, P., Díaz-Rizzolo, D.A., Batlle-Bayer, L., Adrià-Acosta, F., Aguilar-Martínez, A., Medina, F.-X., et al. (2022), "Edible Insect Consumption for Human and Planetary Health: A Systematic Review", International Journal of Environmental Research and Public Health, Vol. 19 No. 18, p. 11653, doi: 10.3390/ijerph191811653.

Rovai, D., Amin, S., Lesniauskas, R., Wilke, K., Garza, J. and Lammert, A. (2022), "Are early adopters willing to accept frozen, ready‐to‐cook mealworms as a food source?", Journal of Sensory Studies, Vol. 37 No. 5, doi: 10.1111/joss.12774.

Salonen, A.S. (2023), "'If I could afford an avocado every day': Income differences and ethical food consumption in a world of abundance", Journal of Consumer Culture, Vol. 23 No. 1, pp. 27–44, doi: 10.1177/14695405211051033.

Schroth, H. (2019), "Are You Ready for Gen Z in the Workplace?", California Management Review, Vol. 61 No. 3, pp. 5–18, doi: 10.1177/0008125619841006.

Schubiger, D.M., Mendini, M. and Peter, P.C. (2022), "Enablers of entomophagy willingness to try for Generation Z consumers", ISPIM Conference Proceedings, The International Society for Professional Innovation Management (ISPIM), Manchester, United Kingdom, pp. 1–9.

Sogari, G., Bogueva, D. and Marinova, D. (2019), "Australian Consumers' Response to Insects as Food", Agriculture, Vol. 9 No. 5, p. 108, doi: 10.3390/agriculture9050108.

Soysal, F., Calli, B.A. and Coşkun, E. (2019), "Intra and intergenerational digital divide through ICT literacy, information acquisition skills, and internet utilization purposes: An analysis of Gen Z", TEM Journal, ASSOC Information Communication Technology Education & Science, Vol. 8 No. 1, pp. 264–274.

Stavrianea, A. and Kamenidou, I. (Eirini). (2022), "Memorable tourism experiences, destination image, satisfaction, and loyalty: an empirical study of Santorini Island", EuroMed Journal of Business, Vol. 17 No. 1, pp. 1–20, doi: 10.1108/EMJB-10-2020-0106.

Tzompa-Sosa, D.A., Moruzzo, R., Mancini, S., Schouteten, J.J., Liu, A., Li, J. and Sogari, G. (2023), "Consumers' acceptance toward whole and processed mealworms: A cross-country study in Belgium, China, Italy, Mexico, and the US", edited by Okpala, C.O.R.PLOS ONE, Vol. 18 No. 1, p. e0279530, doi: 10.1371/journal.pone.0279530.

Van Huis, A., Van Itterbeeck, J., Klunder, H., Mertens, E., Halloran, A., Muir, G. and Vantomme, P. (2013), Edible Insects: Future Prospects for Food and Feed Security, Food and agriculture organization of the United Nations.

Williams, K. and Page, R. (2011), "Marketing to the Generations", Journal of Behavioral Studies in Business, Vol. 3, pp. 1–17.

Woolf, E., Zhu, Y., Emory, K., Zhao, J. and Liu, C. (2019), "Willingness to consume insect-containing foods: A survey in the United States", LWT, Vol. 102, pp. 100–105, doi: 10.1016/j.lwt.2018.12.010.

# TRADITIONAL AND CONTEMPORARY COSTING SYSTEMS IN HEALTHCARE SYSTEMS- A LITERATURE REVIEW

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## ABSTRACT

The concept of cost accounting has been developed in the context of Management Accounting. The need of accurate determination and control of product and service cost that are produced, as well as the need of measuring organizations' performance has led to the use and implementation of new management accounting systems. The application of cost accounting systems can decisively and effectively address the challenges in the modern economic environment. The purpose of this paper is to investigate the role of management accounting and cost accounting systems in the most critical sector of healthcare services. More specifically, an empirical research has been conducted at healthcare institutions in order to investigate their existing state regarding with the management accounting systems that they use, the degree of its use and the methods of their application and development. For the purposes of this survey, a questionnaire was created which was distributed to the directors, chief accountants and employees of the financial department of a random sample of 40 public, private and military Health Care Organizations. The results analyzed using the statistical package SPSS showed that hospital ownership has a significant effect on the use of costing accounting systems. In public and military hospitals the utility of costing systems and cost information appear to be with no great significance and systems that are used are not substantially exploited.

*Keywords: Cost accounting, Management Accounting, Management Accounting Systems, Activity-based costing (ABC), Cost control, Health Services*

# 1. INTRODUCTION

Healthcare is an important aspect of society. Ensuring proper treatment regarding the farewell and conditions in the healthcare system is among the main concerns of every organized society. The aim of an organized health system is to provide health services satisfying the principles of effectiveness, efficiency and social equality. Besides, the health sector is a global indicator of the development of

states. Systems choose to implement policies that concern all governments, while their effectiveness depends on a set of administrative, economic and scientific acts.

The difficulties that arise in all developed countries in achieving their goals in health sector are of grave importance. Research worldwide has shown that the cost of health services has increased significantly due to the equal increase in demand for services, the aging of the population, the increase in expectations for health services and the application of new technologies (Young, 2014). At the same time, the given complexity of health care services makes the need for reliable cost data more acute.

In addition, health professionals are aware of the problem of resource availability and for this reason efforts are being made to develop strategies to minimize costs and save available resources. In Greece, according to OECD data, health services absorb 8.3% of GDP and employ 5.4% of the workforce (OECD, 2017).

The study of the costs of health services can help in making administrative and political decisions, in economic evaluation as well as in improving the efficiency of the systems (Cooper and Kaplan, 1999). Administrative Accounting and Costing can be a critical tool in this effort. The objective of Management Accounting is to inform the executives of an organization in order to make management decisions in relation to planning, control, evaluation and the rational distribution of available resources (Garrison and Noreen, 2003). In particular and in the context of Administrative Accounting, costing is a powerful tool for the valid and timely information of the administration, the precise determination of the results, the size of the production activity, the control and measurement of the performance of the processes and operations of an organization (Sackelis, 1992).

Reliable information systems and monitoring tools are prerequisites for achieving modern and efficient management and for health service organizations to fulfill their mission, cope with modern economic challenges and solve problems that arise in their operation.

The aim of this work is to investigate the role of administrative accounting and in particular costing systems in the most critical sector that of health service provision. Its individual objectives are the investigation of the existing costing organization and infrastructure of hospital institutions, the degree of use and utilization of costing systems and the methods of their application and development in Greek hospitals.

According to the World Health Organization, achieving the highest possible level of health is one of the basic rights of every human being regardless of race, religion, political beliefs, economic and social status, therefore the importance and necessity of the sector is evident of health in any organized society. At the same time, the health sector is one of the most important sectors of the economic life of an organized society and this is proven by the fact that in developed countries health expenditures represent 10% of the total economic activity of a state (Liaropoulos, 2007).

The main causes of the increase in the volume and value of health expenditure are demographic, socio-economic, health and epidemiological factors, such as the improvement of life expectancy, the phenomenon of population aging, the development and expansion of medical and diagnostic procedures, the spread of biomedicine and the increase in chronic degenerative diseases (Karagianni, 2014; Young, 2014). Besides, the global economic crisis combined with the increased demand for health services creates financing and operational problems for health service providers, which are under pressure to contain their costs (Morgan and Astofli, 2014; Morgan and Astofli, 2013).

In this socio-economic context, the increasing pressure to improve the cost-effectiveness relationship in the health sector makes it necessary for the management of health care organizations to be well informed in order to make decisions and manage limited funds optimally. possible way (Theodorakioglou and Tsiotras, 2000). Based on the principles of effectiveness, efficiency, equity and social justice that must govern the operation of health care units, the need for changes in business planning, the organization of services as well as the rationalization of the use of their finances is imperative. resources (Economou, 1999). Cost estimates are a measure for the efficiency of a hospital as well as for the control of its activity at a budgetary and accounting level (Polyzos, 2007).

From the above, the role that can be played by Administrative Accounting and Costing Systems can be seen, so that organizations providing health services can cope with their mission and modern financial challenges and solve the problems that arise during their operation. According to (Tsitsakis, 2010) Health Services Cost Management is defined as: "the set of actions and activities, through which those responsible at each level of health services operation, in the context of short-term and long-term planning and control decisions of the action of the organizations, they try to achieve the reduction of the cost of the services provided while simultaneously improving the value enjoyed by the users of the services".

## 2. COSTING AND HEALTH SERVICES

The cost of health care is increasing significantly due to the aging of the population, increasing expectations for health care and the implementation of new technologies (Karagiannis, 2014). As a result of these changes, the incentive to accurately determine health care costs has become increasingly important (Preston, 1992). There is a growing perception by healthcare professionals that resources are limited and therefore, strategies are being developed worldwide to limit healthcare expenditure (Abernethy, 1996; Kurunmaki, 2004). The study of health care costs can significantly help in making political and administrative decisions, and economic evaluation is a tool for improving efficiency (Gyldmark, 1995). Therefore, the costing of health care services is of great importance,

although accounting systems may prove limited when calculating costs per individual patient (Negrini et al., 2004).

Interest in the costing of health services became more intense in the 1980s when, in order to contain the cost of health expenditures, the prospective reimbursement system of nursing institutions was implemented by the Medicare program in the USA. With the establishment of the method of predetermined payment per diagnostic group (Diagnosis Related Groups – DRGs), the perception of the administrations of the nursing organizations in relation to the cost changed as now the final bearer of the cost is the diagnostic group of the patient and not the days of hospitalization. Consequently, the need to use sophisticated costing systems that will provide reliable data for the purpose of controlling and managing the costs of institutions is imperative (Hill, 1991).

2.1.1 **Particularities of health services**

At this point, it is appropriate to point out the factors that influence the calculation of the cost of health services. Estimating the cost of services provided by hospitals is a complex and extremely difficult task for many reasons. The main difference compared to other production units that produce products or services, is that hospitals provide a wide range of health care services due to the diversity of the human organism of each patient and the number of factors involved (Vitikainen, Street and Linna, 2009 ; Friedman and Shortell, 1988; Llewellyn and Northcott, 2005; Cardinaels and Soderstrom, 2013).

A further differentiation stems from the nature of the service itself. The health services provided are intangible in contrast to the products of a productive enterprise which are tangible and easy to measure (Tsitsakis, 2010). But what are the "products" that a hospital produces? Are all services provided to a patient from the time of admission to discharge from the hospital? How feasible is it to calculate the cost of the services provided? For example, can we estimate the cost of the inpatients a clinic manager sees each day? Calculating this cost can be difficult, as the time to diagnosis and treatment can vary significantly from patient to patient. Health organizations are a system of activities from which the services provided are produced, and which are consumed simultaneously with their production. Therefore, hospitals cannot cope with the problem of variation in demand for healthcare services by using their service inventories (Tsitsakis, C.; Karasavvoglou, A.; Elefteriadou, G., 2013).

On the other hand, since most health care expenditures are fixed, lower demand than the organization's capacity means higher costs of underemployment of the factors of production. However, health care services provided by a hospital must be available at all times of the day and night, despite the cost of underemployment (Pauly and Wilson, 1986).

Another special feature that differentiates the health care sector from any other sector, and which directly affects the cost of health care services, is the special position of medical personnel within the

health care delivery system (Harris, 1977; Cardinaels and Soderstrom , 2013). Doctors often do not have a conscious perception of the costs generated by the services they provide (Kurunmaki, 2004). As (Broyles and Reilly, 1998) point out, the phenomenon of consuming uncontrollable amounts for the treatment of their patients is often observed without considering that among their tasks is the optimal utilization of available resources. This view of doctors is at odds with the concept of central management which must manage limited resources and plan their allocation to departments across the hospital to operate efficiently (Wood and Matthews, 1997). Conflict with hospital management is critical, as physicians are held responsible for most hospital expenditures (Harrison et al., 1992). Hillman et al. (1986) report in their research that physician' decisions regarding admissions, medications, and diagnostic tests account for approximately 80% of total hospital costs. Hospital physicians' low awareness of these costs may lead to overspending (Narayan et al., 1996; Tsitsakis, 2010).

2.1.2 **Distribution of the cost of health services**

An organization that produces a single good or service usually has little difficulty calculating the cost of each unit. In contrast, organizations such as health care providers that produce a variety of services, each requiring a different combination of amounts of land, labor, and capital, have a more difficult task in determining the cost of each unit of service provided (Young, 2014; Tsitsakis, C .; Karasavvoglou, A.; Elefteriadou, G., 2013).

According to the literature, there are three sequential steps in allocating the costs of health services, either to individual patients or to groups of patients that are both medically coherent and homogeneous in terms of costs (Tan et al., 2009; Finkler, Ward and Baker, 2009):

1. The distribution of the costs of the auxiliary departments of the hospital, in the main departments.

2. The distribution of general hospital expenses generated in the main departments of the hospital, to the patients.

3. The distribution of the direct costs generated in the main departments, to the patients.

To deal with this more complex process, an organization must follow six steps based on the full costing method: (1) the definition of the final cost objects, (2) the determination of the cost centers of the main and auxiliary departments, (3 ) the distinction between direct costs and indirect costs, (4) the selection of the basis for apportioning the costs of the auxiliary departments, (5) the selection of the apportionment method (direct method, step down method or indirect reciprocal method - reciprocal method) and (6) linking the cost centers of the main departments to the cost objects. Together these six decisions constitute the full costing methodology (Young, 2014; Garrison and Noreen, 2003).

A critical decision for the exact sharing of the indirect costs of nursing institutions is the basis of sharing. The choice of the allocation base should be appropriate and representative of the elements that generate the indirect costs (Lucey, 2002; Zimmerman, 2011). In their research paper (Bean and Hussey, 1996) collected the bases of apportionment most frequently used by nursing institutions, which are equal apportionment in services, square meters, number of employees, direct labor costs, size of the budget, the value of fixed assets, hospital days, outflows and the actual use of resources in proportion to the use of GAEs.

### 2.1.3 Allocation of support department overheads

The available literature describes different frameworks for allocating hospital overhead costs to medical departments (Drummond et al., 2005). The most common framework is allocation to cost centers (Finkler, Ward and Baker, 2009). In cost center allocation, a distinction is made between main medical departments and support departments. Ancillary departments do not provide patient care and may include departments of administration, facility maintenance, supply, and housekeeping. Overheads from these departments can be allocated to medical departments through various allocation bases, such as the number of inpatient days or the amount of direct costs (Finkler, Ward and Baker, 2009).

The choice of method of apportioning the costs of auxiliary departments to the main departments can have a significant effect on the calculated cost of services and the evaluation of a department's performance. In the literature, three methods are mentioned for apportioning the costs of auxiliary departments to the main ones, the direct method, the indirect tiered method and the indirect reciprocal method (Young, 2014).

The direct method is the simplest method and apportions the costs of the ancillary departments directly and alone to the main operating departments through the appropriate apportionment bases. For example the costs of a hospital's administration services and pharmacy service will be shared directly with the clinic departments.

In contrast to the direct method, the indirect or step-down method apportions the cost of auxiliary departments to all the departments it supports, auxiliary and main. To implement the method, successive steps are followed, starting with the apportionment of the auxiliary department that provides the largest amount of services to the other auxiliary and operational departments and ending with the apportionment of the cost of the auxiliary department that provides the least amount of services to the other auxiliary departments in the main sections. The reciprocal method is the most complicated and rarely used method. For the development of the method, linear equations are used, so as to mutually distribute the costs between the auxiliary departments that provide services to each other.

2.1.4 **Allocation of indirect costs of main departments**

Department overheads (indirect costs) are those costs of medical departments that are not directly related to patients, such as the cost of non-medical staff. The method of cost allocation to cost centers and activity-based costing do not apply to the allocation of indirect costs of major departments to patients because they imply a cause-and-effect relationship with the medical department and not with the cost objects that are the patients . They can therefore be attributed to patients using the following methods (Tan et al., 2011; Finkler, Ward and Baker, 2009):

- Marginal mark-up percentages: the distribution of indirect costs is distributed by applying mark-up percentages.

- Weighting statistics: service time, for example, can be used to represent value for resource consumption, yielding a cost per treatment minute or hospital day.

- Relative Value Units: it is a scale of relative value based on the resources that have been used (Resource Based Relative Value Units – RBRVUs), it is mainly used as a basis for the remuneration of the medical staff.

Relative Value Units (RVUs) are a national standard used to measure productivity, budgeting, cost allocation and cost benchmarking. RVUs reflect the relative level of time, skill, training, and intensity required of a physician to provide a particular service. They are a method of calculating the amount of work or effort expended by a physician in treating patients. An inpatient visit for example would have a lower RVU than a surgical procedure (Birdsall, M.H.A. and Trivedi, 1983). The resource-based relative value scale (RBRVS) developed by William Hsiao (1988) was based on: (a) time consumed by providing the service or procedure, (b) practice overhead including liability insurance premiums, (c) the cost of training opportunities and (d) the intensity and complexity of work (required knowledge and skills, as well as emotional workload (stress)) (Johnson and Newton, 2002; NHPF, 2015).

2.1.5 **Allocation of direct costs of main departments**

Direct costs refer to the costs of medical departments that are directly connected to patients, such as the cost of medical personnel, drugs and medical equipment. Direct costs per patient are calculated by identifying the quantities of hospital services consumed by a patient and valuing their unit costs (Drummond et al., 2005). Approaches to measuring resource consumption vary widely and can be determined by the objective of the cost analysis and the availability of data (Mogyorosy and Smith, 2005). In total, there are four methodologies for calculating direct costs per patient. These methodologies differ:

- In terms of the level of accuracy with which they identify the costs of health services: gross-costing and micro-costing and

- Regarding the way of valuing the cost of services: top-down approach and bottom-up approach (Tan et al., 2009).

Average costing identifies health services provided at a highly aggregated level. Hospitalization days are often defined as the only outcome of health services provided (Tan et al., 2011). In top-down average costing, the outcome is evaluated in hospital days per average patient, while in bottom-up average costing the outcome is expressed in hospital days for each patient.

Top-down microcosting recognizes all relevant care services at a detailed level, but estimates the value of each service per average patient (Wordsworth et al., 2005; Tan et al., 2011). Services may include staff time, laboratory services, medical imaging services, drugs, medical supplies, and surgical procedures. Since the methodology does not require patient-level data, statistical cost analyzes cannot be performed and differences between patients cannot be detected (Clement (Nee Shrive) et al., 2009). Top-down first calculates the total cost of the service at the level of the organization or department, and then allocates the total cost to the department or services (products) according to predetermined allocation rules and assumes that all services of a cost center consume the same resources (Meenan et al., 2002).

Although the top-down approach is relatively simple, it is inappropriate for some types of economic evaluation, as it assumes an equal distribution of resources among patients. Furthermore, due to the lack of detailed data (eg at patient level), the top-down approach is sometimes the only feasible option as well as the cheapest and fastest technique (Waters and Hussey, 2004). Bottom-up microcosting recognizes and calculates all relevant health services provided at the most detailed level. Because the methodology calculates the value of services for each patient, this method allows for statistical analyzes and comparative evaluations at the level of patients but also of the composition of services provided (Wordsworth et al., 2005; Tan et al., 2011).

The method can be developed retrospectively and prospectively using medical records, surveys, questionnaires or other reliable databases. For this purpose measurement techniques developed by other disciplines are often used, such as time and motion studies in which the production function is broken down into separate activities (stages) which are further broken down. In time and motion studies, evaluators directly measure the time required to provide a service or produce a specific product. This method uses a variety of techniques, including random sampling. Researchers using this method typically prepare a detailed process flow chart that includes all relevant and necessary steps to deliver a particular service. The flow chart can be developed using existing clinical care pathways and protocols (Mogyorosy and Smith, 2005).

Therefore, one could argue that bottom-up micro-costing is more reliable and accurate, but at the same time more costly and time-consuming (Gyldmark, 1995; Negrini et al., 2004; Mogyorosy and Smith, 2005). However, both methods follow the principles of full absorption costing known from cost accounting (Brouwer, Rutten and Koopmanschap, 2001; Petitti, 2000).

2.1.6 **Process Costing**

A process costing system is used in cases where all production units (products or services) are homogeneous, such as in a continuous production line. All costs related to production for a given accounting period are calculated and then divided by the total number of units of production. Thus for each product unit an average cost per unit is calculated. This type of costing can be used by organizations that provide nearly identical results or are characterized by repetitive operations or processes. To calculate the unit cost of services, the total cost of providing services must be divided by the number of services provided (Lucey, 2002). It is also often used in situations where the service unit is the result of a process, involves many inputs from different departments, and follows a series of sequential processes. Services are divided into successive stages (phases) and the cost of each phase is calculated separately. The unit cost of each service is the total sum of the costs of all stages (Mogyorosy and Smith, 2005).

This type of costing can be used to cost various health care services. For example, if in a dialysis unit the department's only product is an identical dialysis treatment, the cost per treatment can simply be calculated by dividing the total cost by the total number of treatments. Also, the process costing system can be used in hospital departments that produce similar results, such as the microbiology or radiology department (Young, 2014).

2.1.7 **Job – order Costing**

A job-to-order costing system can be applied when the unit of product or service is unique, produced in batches and each batch is unique (Young, 2014). It is widely used in service industries such as hospitals, as even patients with the same disease differ in the consumption of resources required for their treatment (Garrison and Noreen, 2003). To accomplish its goal, the project-order costing system uses a different cost file for each patient case. In each file, the cost elements related to the patient's treatment are entered in detail in order to finally calculate the treatment cost.

Unlike a dialysis unit, in a radiology department that produces a heterogeneous mix of results, such as chest x-rays, joint x-rays, MRIs, CT scans, and so on, the average unit cost would provide inaccurate information regarding cost of final services and their pricing. In this case a project-to-order system would be more appropriate.

By applying the order costing method, a hospital's management can determine whether, for example, the total cost of the emergency department was greater or less than the reimbursement the hospital

received for the care and treatment of the patient. In this way, it could determine the characteristics of those visits that generate profit and those that generate loss.

However, in project-to-order costing systems the allocation of indirect production costs to the services produced proves difficult in practice because it is an indirect cost and it is difficult to link the cost elements to a specific service. For example, the staff who plan the procedures in a department, who deal with the medical supplies of the departments or with the sterilization in the operating room as well as the water and electricity costs, the administrative costs, the depreciation are indirect cost elements that are difficult to assign directly to a service. To deal with the problem, a predetermined indirect cost sharing index with some appropriate sharing basis is usually used (Garrison and Noreen, 2003).

### 2.1.8 **Ratio of costs to charges**

To deal with the difficulties that arise in relation to the imputation of indirect costs and to adjust their charges to patients, many hospitals used the Ratio of Costs to Charges (RCC) method (Shwartz, Young and Siegrist, 1995), which estimates the cost of a procedure through the price charged to the patient for providing the services. First the full cost of the main department for one year is calculated and then the total charges of the same department over the same period. The cost-to-charge ratio (RCC) is the ratio of total costs to total charges. The service cost of each cost center is calculated by multiplying the RCC index by the billing amount of the service provided (Young, 2014).

Although this approach provides reasonably accurate cost information for a product mix, it can be highly misleading for an individual product or service. Research has shown that the RCC approach to determining a hospital's costs is approximately 95% accurate at the production line level and approximately 85% accurate with regard to DRGs (Shwartz, Young and Siegrist, 1995). But at the level of a product or service provided by a major hospital department its accuracy is questionable and its results unreliable (Shwartz, Young and Siegrist, 1995).

Based on some comparative measurements that have been made, the cost results with the RCC method seem to be different from the actual cost of a service provided, and this is because each hospital applies a different policy and uses different coefficients to cover the indirect costs (GBE) in order to achieve profits. In general, the use of RCC produces misleading information about true costs and is therefore not useful in determining the cost of services provided to a patient (Young, 2014).

### 2.1.9   **Modern Costing Systems of Health Services**

Based on the increasing demands and resource constraints in health care, a valid calculation base is increasingly important in controlling health care costs. This applies both to planning at the central administration level and to the direct production of health care at the hospital level. Healthcare professionals face the consequences of budget constraints and pressures to maintain high quality

patient care. Agency managers and clinic managers need to know what services need to be provided and how to reduce costs without reducing the quality and safety of care.

Process orientation in health care is a key factor in the effort to improve cost effectiveness and medical outcomes. Costing methodologies and techniques are essential to link relevant clinical outcome data and administrative cost data to the health care process (Ridderstolpe et al., 2002).

Conventional methodologies, however, do not provide information about the costs of activities performed to meet patient needs. Since the performance of these activities causes (or does not) improve quality and resulting costs, managers need reliable information to ensure the sustainability of their organizations (Aird, 1996).

### 2.1.10 Activity-based costing in healthcare

Activity-based costing, as we have already mentioned, is a method designed to cost a product or service more accurately and has been successfully implemented in many manufacturing and service organizations (Lee, 1990; Lewis, 1991). Cooper & Kaplan (1999), argue that health service organizations are ideal candidates for ABC much more so than productive ones because most of the costs in this type of organization are indirect costs. ABC is based on the paradigm that activities consume resources and services or products are the result of activities. Therefore, the resource consumption of any activity can be measured more accurately and a more accurate cost estimate can be made. An activity is the set of resources that are combined to perform a service. The objective of ABC is to determine the total cost of the activities performed and related to the care of a patient. Activity costs include consumables costs, medication costs, staff costs, equipment costs and hospital infrastructure costs (Negrini et al., 2004).

An activity-based costing system identifies the activities necessary to produce a service and which are the object of cost. The next step is to calculate the cost of each activity and assign the cost to the cost objects (Young, 2014). If the 'care' activities provided to a patient are known then costs per patient or per activity or even per department can be accurately calculated.

The accuracy of its results on the cost elements provides the possibility to the administrative staff of the health organizations, to develop strategic planning and contain the costs more effectively (Udpa, 1996). In activity-based costing, costs are initially accumulated in activities that are carried out in order to produce the required services and that consume resources. These costs are then allocated to products (or patients) based on the activities required to produce (or treat) them (Chan, 1993).

Besides, ABC with the accuracy of the cost data as well as the detailed presentation of the procedures it offers can contribute to the development of standard treatment protocols (Standard Treatment Protocol) and determine whether a specific treatment positively affects the final result of the organization or corrective measures should be taken to reduce costs (Chan, 1993; Aird, 1996).

Efficiency and cost control in health facilities became a priority with the introduction (initially in the USA) in 1983 of a new method of reimbursing health care providers, the prospective payment method based on DRGs (Fetter and Freeman, 1986). The retrospective method of reimbursement established before the introduction of DRGs, based on hospital days, did not promote efficiency (Cinquini et al., 2009). Insurance carriers or the government now reimburse hospitals based on the pre-determined price set for each DRG category, without considering actual costs and resource consumption. The introduction of this method significantly changes the perception of hospital administrations regarding the cost of services (Evans, Hwang and Nagarajan, 1997; Tan et al., 2011) therefore healthcare organizations began to look for more sophisticated approaches to the management of their budgets (Kerschener and Rooney, 1987).

Another important phenomenon in the early 1990s was the introduction of a series of reforms in various countries such as the United Kingdom, Sweden, Finland, the Netherlands (a quasi-market mechanism) in healthcare, modeled on business models and economic private sector exposures, in order to ensure greater efficiency of health service providers (Kurunmaki, 1999).

The above phenomena create the need for reliable information and more accurate data, in order to understand the causes of the creation of the costs of the services provided, to assess their efficiency and to design flexible budgets that respond directly to the changing environment of health services (King et al., 1994).

Activity-based costing is more accurate in determining product costs than traditional costing techniques because the products produced differ in terms of the resources required, the diversity of activities, their complexity, the materials and the special arrangements that apply. in the health sector, but also because there is a high percentage of indirect costs (Chan, 1993). With the product cost information generated by ABC, managements can make better decisions about pricing, discontinuing, or introducing new products and services.

This costing method can guide managers to effectively reduce costs by focusing on non-value-added activities. Costs can be reduced by reducing the time or effort required to perform the activity, or by eliminating the activity entirely if it does not add value to the organization. For example, one way to reduce the overhead costs of managing medical supplies may be to reduce the distance between the distribution and management department and the main departments. In this way, materials can be delivered as soon as possible, thereby reducing handling costs.

Another alternative is to have the suppliers deliver the materials directly to the main departments, thus completely eliminating material handling overhead. Costs can also be reduced by selecting low-cost activity from a set of alternatives and sharing the activity with other product or service units to achieve economies of scale. The advantages of the ABC method are multiple when combined with

Total Quality Management (TQM), Benchmarking and Operations and Supply Chain Management (Gonzalez et al., 2005; Grandlich, 2004).

Kirton and Hazlehurst (1991) argue that ABC enables management to better understand how services work, better visualize where and why costs are incurred and supports quality improvement initiatives. They also argue that if cost drivers are well defined, they can express the complexity of the case mix. In reality, costs vary depending on the nature of the patient, the type of examination, the mix of staff, and appropriate cost drivers can shape the most efficient mix of resources required.

Despite the contribution that an ABC system can make to the operation and organization of an organization, the financial and technical requirements for its implementation should first be assessed. It should be assessed from the beginning if the benefits resulting from the development of such a system are greater than the costs of its implementation, if it is possible to identify the activities that consume resources, to allocate the costs per activity and to make selection of appropriate cost drivers (Ridderstolpe et al., 2002). A necessary condition is also the existence of a sophisticated information system as well as the appropriate training of the staff. All things considered, ABC should only be implemented if its benefits far outweigh its costs. Also, management support and communication of the development plan with employees are essential for the successful implementation of ABC in an organization (Chan, 1993; Ridderstolpe et al., 2002).

## 3. LITERATURE REVIEW

In her study, Chan (1993) compares the results of the traditional costing method with those of the modern ABC method. Her study is based on the calculation of the cost of four different controls of a microbiological laboratory with the two methods. Research results show that traditional costing systems tend to overcost high-volume services and undercost low-production services, as has been demonstrated in the manufacturing sector. In addition, the use of ABC appears to provide cost information of the services produced with great accuracy, not only when they differ in terms of the amount of resources required, complexity, but also when there is a high percentage of indirect costs not related to the production of the services . In addition to the potential for improved decision-making, ABC can lead executives to effectively reduce costs by identifying, redesigning, or eliminating processes that do not add value to the final services or by changing the mix of services provided. The researcher also states that the implementation of ABC is not a panacea and that management of organizations should balance its benefits in relation to the financial and technical capabilities of the organization before making a decision on its implementation.

Aird (1996) in his research presents the development of a cost management model at Weston Park specialist oncology center in Sheffield. Activity-Based Cost Management (ABM) could bring real

benefits to managerial decision-making in the areas of quality, cost and performance. Emphasis on the quality of patient care, the high cost of new technology and increased competition are among the factors that are forcing healthcare organizations to rethink how they provide services to their patients, as well as the cost of those services. Furthermore, he emphasizes that in order to improve quality and control costs, managers need information appropriate to their decision-making needs. Conventional methodologies, however, do not provide information about the costs of activities performed to meet patient needs. Process and process analysis and redesign could yield significant quality and efficiency gains. The research concludes that activity-based cost management (ABM) not only improves the quality of financial information available to managers to control their costs and better manage their resources, but can also help drive improvement initiatives of the procedures. In addition, it highlights the contribution that ABM can have to the development of clinical protocols, and the standardization of care processes. The aim of the protocols is to develop "best practices" for the organized and efficient management of diseases to ensure a higher quality of care. Information from ABM can be used to help develop these protocols as it is based on process analysis.

Thorley Hill (2000), studied the effect of changes in the external environment of hospitals on the adoption of costing systems. In particular, the study, which was based on historical data from the period 1980 to 1990, examines the impact of the introduction of the new method of reimbursement of health care providers with the Medicare program in America as well as the increased competition in the implementation of costing systems. The survey included 589 hospital finance directors from a random sample of 1,662 hospitals in America. Empirical results show that the change in payment method from retrospective to prospective was the driving force for the adoption of costing systems in the 1980s. As revenue constraints increased, so did the rate of adoption of costing systems. In addition, competition had a smaller but positive impact on their implementation. Organizational characteristics, including ownership, size, and whether hospitals were part of a health care provider group, also had a significant effect on the adoption of the costing system. However, despite the significant change in reimbursement policy, only 37.8% of responding hospitals had begun using a costing system during the 1980s.

Cardinaels, Roodhooft and Herch (2004), investigated the specific factors that can facilitate (or hinder) the development of an ABC system in the organizational context of a hospital. The results of the survey conducted in 120 hospitals in Belgium showed that factors such as dissatisfaction with the existing costing system, the support of medical staff for the use of a costing system, the type of contracts of doctors with hospital institutions largely determine the implementation of a more sophisticated costing system. At the same time, factors characterized as critical for the adoption of ABC in other industries were judged to be less important, since the installation of a cost system

requires a different approach in accordance with the organizational conditions of a hospital. In particular, the results showed that hospital management should not underestimate the interest of medical staff in the process of redesigning cost systems.

Several studies have been published over time and internationally that describe the costing of hospital clinics. However, it is difficult to compare them with each other as they were conducted in different countries and in environments with different organization and regulations. In addition, the costing methodology they applied differed according to the perspective and the object of the research. The aim of the study by (Negrini et al., 2004) was to examine the methodologies used in 11 published studies conducted from 1991 to 2003 in Europe and America and to attempt to describe the key components of a standardized method, the which could be applied internationally.

According to the results of the research, the diversity of costing methods led to a small percentage of external validity and the inability to compare research findings. As cost measurement is a complex subject and there is a lack of clarity in the terminology and cost concepts used, the review of methods concludes that there is a lack of standardized methodologies to accurately determine hospital clinic costs. In conclusion, it suggests that a standardized costing methodology would facilitate comparisons, encourage benchmarking between clinics within a hospital, and thereby assist in the decision-making process in terms of efficient resource allocation.

Larsen and Slothuus Skjolbdorg (2004), in their research, attempt to analyze the differences between billing systems such as the traditional billing system in a hospital, the DRGs system, and the ABC activity-based costing system and demonstrate the difficulties that exist when comparison of these systems. Data were collected from the university hospital in Odense, Denmark, and the sample consisted of patients with diagnosed angina pectoris. A detailed description of the treatment given to the patients was used as the basis for determining the costing procedures. The results of the study show that the ideas behind the different cost systems used in hospitals are reflected in how they overestimate or underestimate the cost of a given treatment. Among the properties that distinguish systems from one another are the level of cost concentration, how cost categories are treated, how patients are classified, and the costs involved in setting up and maintaining the different cost systems. As it turned out, it is generally not possible to conclude which system is preferable, and the researchers suggest further research to explore the advantages and disadvantages of the systems.

The study by Antikainen et al. (2005) was performed at the surgical unit of the South Karelia Central Hospital in Finland. The purpose of the study was to determine the differences in the cost of surgical procedures using the ABC calculation method and their price based on DRGs and then to determine the actual cost of operating the surgery in order to assess whether a possible investment to expand the surgery would be profitable. operating room unit. The differences between ABC costing and DRGs

prices were found to be large, the costs based on ABC costing being higher than the corresponding DRGs prices. The causes of these differences are mainly found in the high cost of unused capacity. The efficiency of a possible expansion of the operating room was examined by developing a simulation model while a sensitivity analysis determined the optimal level of surgical operations. The study proved that the cost information produced by an ABC system can improve the management of an organization's operations and processes by making appropriate management decisions. By extension, ABC costing can form the basis for the Activity-Based Management (ABM) model.

The research by Gonzalez et al. (2005) represents one of the first empirical attempts to integrate methodologies in the literature and proposes a solution to the costing problem of healthcare organizations. In their research, they present a new model for developing an appropriate ABC activity-based costing system for the healthcare sector, applying two important methodologies, Benchmarking and Quality Function Deployment (QFD), to five hospitals of Spain. Applying QFD and benchmarking methodologies as a common analysis tool is an interesting approach because information is analyzed from different perspectives simultaneously. With the QFD method, the requirements and needs of the hospitals were determined, while with the benchmarking, the best practices, methods and procedures were determined to achieve the maximum performance of the hospitals. The model exploiting the advantages offered by the two techniques, ensures a better understanding of the needs of the patients, the goals of the hospital administration, identifies the requirements of the hospitals and aims to improve the quality of the services provided.

In an extensive two-phase study Arai (2006) studied the reforms in relation to costing practices in Japanese hospitals. First, the general characteristics of the costing methods and their objective were identified, with semi-structured interviews of finance executives in 31 hospitals in Japan. Subsequently and based on these results, a survey was carried out in 7,430 private hospitals in Japan, with the aim of examining the extent of implementation of costing systems at the departmental level and whether this was implemented with the assistance of external partners. The development of the systems was examined based on hospital characteristics such as the size/scale of the hospital and the degree of complexity in the organization of the hospital (general, specialized, university, etc).

According to the respondents' responses, most hospitals in Japan show reluctance to implement costing as the information provided by existing accounting systems is not used effectively. In addition, it is reported that traditional costing systems developed mainly by manufacturing companies are inadequate for use in hospitals, while the findings of this study are in line with a previous study by (Hill, 2000) that hospitals are reluctant to adopt (new) costing systems, given their high cost and difficulty in implementation. Also, the size of the hospital (based on the number of beds) and the adequacy of appropriately qualified staff have a positive effect on the implementation of new

costing systems, on the contrary, small-sized hospitals rely on external collaborations for the development of costing systems.

Purpose of the case study conducted in a Tuscan hospital from September 2005 to March 2006 by Cinquini et al. (2009) was to examine the applicability of activity-based costing (ABC) in the healthcare setting and the generation of useful and reliable information about resource consumption and processes. The main objective of developing the ABC model was to measure the cost of laparoscopic cholecystitis treatment. Its design and development were carried out in accordance with the methodological principle of the "hierarchy of activities" and with the operational characteristics of the specific health care institution where the study was carried out. Interview and direct observation was the method followed to identify activities and patterns of resource consumption.

The researchers report that the application of an ABC model provides the ability to analyze work flows and understand how tasks are performed within the hospital's different organizational structures, to calculate the cost of performing the tasks, to make comparisons and to support decisions to reallocate the organization's resources. In addition, knowledge of costs for each activity can determine strategic planning, management of organization costs, improvement of operation, results and quality of services provided. For example, it is possible to reduce the cost of a surgical procedure without reducing the quality by reducing the non-used time, while choosing a non-invasive technique as a treatment, can reduce hospitalization and improve the quality of life of patients.

Unlike mainstream business organizations, decisions to implement accounting systems and to improve hospital operations and management occur in a complex institutional environment with many stakeholders. Cardinaels & Soderstrom (2013), investigate the influence of the institutional environment of a hospital that follows complex organizational structures, procedures, rules and behaviors. According to institutional theory, the institutional environment in which organizations operate drives the choices they make (Covaleski, Dirsmith and Samuel, 2003). Both internal factors such as different professional groups, and external factors such as government, legislators, patients and insurers strongly influence hospital choices and decisions. By reviewing relevant research, they analyze the institutional factors that are important and must be taken into account in any effort to adopt new regulations, management systems and governance structures, as it is these factors that influence the way, implementation and effectiveness of changes in a specific organization.

Regarding extra-business factors, the results showed that competition is an important factor for the adoption of modern costing systems, while regarding intra-business factors, organizational factors such as location and ownership regime were found to be statistically significant for the implementation of advanced costing systems. All structural factors such as the rational structure, the existence of specialized personnel, the existence of an information system and the importance of cost

information were also found to be statistically significant for the use of costing systems. Organizational factors such as hospital size, academic character, and bed occupancy were found to be neutral for the adoption of costing systems.

The data of the research regarding the implementation of costing systems and according to the questionnaire of the financial executives showed a percentage of the absence of a costing system in the hospital organizations at a rate of 68.85%. In particular, the percentage of absence of a costing system in Public Hospitals is 78.05%, while in Private Hospitals it amounts to 30.00%.

## 4. DISCUSSION AND CONCLUSIONS

From the literature review it appears that the use of sophisticated costing systems in the modern environment of the health sector is critical as estimating the cost of services provided by health organizations is a complex and difficult task. The increase in the volume and value of health expenditure due to the improvement of the population's life expectancy and the application of new medical technologies as well as the uncontrolled and inappropriate use of resources are causes of the increase in health expenditure. The containment of health care costs is a major concern of all governments of developed countries, which emphasize the cost-effectiveness relationship that governs health expenditures, while at the same time it is necessary to ensure the health level of the population.

Accurate and reliable cost information is a decisive factor in making effective administrative and political decisions. The need to use costing systems that will provide reliable data for the purpose of controlling and managing the costs of institutions is imperative. Besides, the study of health care costs and the economic evaluation of organizations is a tool for measuring their efficiency and effectiveness. Worldwide, there is an organized effort for nursing institutions to implement costing systems that enable them to more accurately determine the resources they consume as well as calculate their costs, the more rational distribution of available resources and the pricing of their services. The bibliographic research shows that the application of cost calculation systems provides the possibility to improve the decision-making of executives and can contribute decisively to the redesign of procedures, the reduction of costs and, by extension, to the improvement of the quality of patient care services.

At the same time, the research proves that the installation and the way of developing a cost system requires a different approach each time, in accordance with the general regulations and organizational conditions that govern a hospital organization. In any effort to adopt new regulations and management systems it is important to consider the particular factors that influence the manner, implementation and effectiveness of the changes being attempted.

In conclusion, the use of cost accounting systems in the critical health sector can function effectively and support rational administrative decision-making, planning and control, motivate desired behaviors and contribute to the creation of the necessary values to achieve goals of organizations. The initial purpose of the research was to capture the existing cost organization of the hospitals and in particular what are the cost systems they use, what the possible differences are observed in relation to the ownership regime.

According to the results, it appears that Analytical Accounting is not applied in military hospitals. 21.7% of the public hospital participants also state that Analytical Accounting is not implemented in the hospital where they work. On the contrary, 18 of the 23 total participants who work in public hospitals, at a rate of 78.3%, state that they apply Analytical Accounting.

The processing of the data also shows that there is a high degree of agreement among the participants of the public hospitals, who at a rate of 21.3% state that Analytical Accounting is not applied in that the Top Management did not contribute to the support and implementation of a costing system, that it was not carried out staff training, that there was no support from external partners for the implementation of the costing system and that there is no specialized staff for the implementation of the system.

The above data seem to agree with the research findings of (Tsitsakis, 2010) as these factors have proven to be important for the implementation of costing systems. It seems that the absence of these factors in combination with the operation, mentality and culture that governs public organizations, their small margins of flexibility and the general reaction and resistance to changes and reform efforts affect the adoption and implementation of costing systems.

In addition, all research participants working in private hospitals state that they apply a Traditional Costing System, while in public and military hospitals it is applied at a rate of 50%. At the same time, the fact that 7 out of 9 total participants state that a modern activity-based costing system (ABC) is used in their hospital is particularly interesting, they are employees in public hospitals and 2 in private hospitals. Considering the existence of competition in the private sector and the narrow profit margin of businesses, which is determined by the cost and selling price of services, it would be reasonable for the ABC costing system to be used more by private nursing institutions as it provides the possibility of accurate information and cost containment, which can positively affect an organization's bottom line.

Moreover, statistical analysis showed that the ownership status of hospitals has a significant effect on the reasons for using cost accounting. In public and military hospitals the utility of costing systems and cost information appears to be of little importance and any systems that are used are not effectively utilized. This small utilization of cost information results from and is limited by the existing

legal obligations and the administrative structure of public institutions whose Managements do not have a substantial possibility to redesign activities and draw up strategic planning.

In contrast, private sector hospitals seem to attach more importance to the use of such systems and to have realized the potential and advantages that can arise from their implementation. This may be due either to the legal framework that governs each category of hospital, or to the mentality and specific goals of each hospital, as in private hospitals the goal is profit, while in public and military hospitals, it is to meet the needs of the population.

In addition, the type of costing system affects the reasons for using and exploiting the cost information, although with slight differences in the prioritization of the reasons for use, they converge that the main reasons for use are the determination of the total cost of the hospital, the determination of costs at the level of departments and clinics as well as and the costing of services.

Regarding the development of the costing systems, the philosophy of the organization towards a continuous improvement of the quality of the services provided, the good cooperation of the financial department of the hospitals with the departments and clinics and the support of the Top Management seem to have a significant effect. Regarding the emphasis on the quality of the services provided, these findings agree with the findings of the research of Ridderstolpe et. al.(2002) and Tsitsakis (2010) where it was found that it is an important factor in the adoption of costing systems. Also the role of Top Management and its support has been shown to be critical in empirical studies (Innes, Mitchell and Sinclair, 2000; Maelah and Ibrahim, 2007; Fei and Isa, 2010; Byrne, 2011) for the implementation of costing systems.

Factors such as hospital size and the existence of an integrated information system appear to have little or no effect on the utilization of cost information and the development of costing systems. Also, in the research work of (Cardinaels, Roodhooft and Herck, 2004) no statistical significance is found for the factors of hospital size and the level of information system technology in the adoption of costing systems by the Belgian nursing institutions that participated in the research. However, the results of other research in organizations and nursing institutions show that the size factor affects the implementation of cost management systems (Innes, Mitchell and Sinclair, 2000; Hill, 1991; Hill, 2000; Macinati and Anessi-Pessina, 2014).

## 5. STUDY LIMITATIONS

The conclusions obtained should be interpreted taking into account certain limitations, such as the limited number of the sample (35 people) and the limited period of time during which the research was conducted. In addition, it should be mentioned that the answers are based on the opinions of the executives of the organizations, and although an effort was made to create the questionnaire to be

simple, understandable and require as little time as possible, we cannot know for sure whether the answers they correspond to their real perceptions.

## 6. SUGGESTIONS FOR FUTURE RESEARCH

In order to enhance the awareness of the importance of cost information and the understanding of the value and usefulness of modern Management Accounting practices and tools such as costing systems, more research is recommended which will focus on the manner and methodology by which they are introduced management and cost accounting innovations in nursing institutions, in order to ensure the efficiency and effectiveness of their action and the achievement of their goals. Also, an important object of study could be the comparative analysis of the costing systems, traditional or modern methods applied in EU countries and how they are related to the respective health costs of these countries.

## REFERENCES

1. Abernethy, M.A. (1996) 'Physicians and resource management: The role of accounting and non-accounting controls', Financial Accountability & Management, May.
2. Aird, B. (1996) 'Activity-based cost management in health care – another fad?', International Journal of Health Care Quality Assurance.
3. Antikainen, K., Roivainen, T., Hyvarinen, M., Toivonen, J. and Karri, T. (2005) 'Activity-Based Costing Process of a Day-Surgery Unit - from Cost Accounting to Comprehensive Management', Frontiers of e-Business Research, Jan.
4. Arai, K. (2006) 'Reforming Hospital Costign Practices in Japan: An implementation study', Financial Accountability and Management, Nov.
5. Bean, J. and Hussey, L. (1996) Costing and pricing public sector services. Essential skills for the public sector, London: HB Publications.
6. Berlin, M.F., Faber, B.P., Berlin, L.M. and Budzynski, M.R. (1997) 'RVU costing applications', Healthcare Financial Management, Nov, p. 73+.
7. Birdsall, M.L., M.H.A. and Trivedi, V.M. (1983) 'Productivity-Based Relative Value Units Radiology Procedures', Journal of Medical Systems.
8. Boyns, T. and Edwards, J.R. (1997) 'The Construction of Cost Accounting Systems in Britain to 1900: The Case of the Coal, Iron and Steel Industries', Business history.
9. Brouwer, W., Rutten, F. and Koopmanschap, M. (2001) "Costomg in economic evaluations", in Drummond M, McGuire A (eds) Economic evaluation in health care.Merging theory with practice, Oxfrod University Press.
10. Broyles, R. and Reilly, B. (1998) 'Physicians, patients and administrators: a realignment of relationships', Journal of Healthcare Management.
11. Byrne, S. (2011) 'What determines ABC success in mature sites?', Journal of Accounting & Organizational Change, pp. 259-277.
12. Cardinaels, E., Roodhooft, F. and Herck, C.v. (2004) 'Drivers of cost system development in hospitals: results of a survey', Health Policy.
13. Cardinaels, E. and Soderstrom, N. (2013) 'Managing in a Complex World:Accounting and Governance Choices in Hospitals', European Accounting Review, pp. 647-684.
14. Chan, Y.-C.L. (1993) 'Improving hospital costs accounting with activity-based costing', Health Care Managenent Review, pp. 71-77.
15. Cinquini, L., Miolo Vitali, P., Pitzalis, A. and Campanale, C. (2009) 'Process view and cost management of a new surgery technique in hospital', Business Process Management, pp. 895-919.

16. Clement (Nee Shrive), F., Ghali, W.A., Donaldson, C. and Manns, B.J. (2009) 'THE IMPACT OF USING DIFFERENT COSTING METHODS ON THE RESULTS OF AN ECONOMIC EVALUATION OF CARDIAC CARE: MICROCOSTING VS GROSS-COSTING APPROACHES', HEALTH ECONOMICS.

17. Cleverly, W.O. (1987) 'Product Costing for Health Care Firms', Health Care Management Review 12, pp. 39-48.

18. Cooper, R. and Kaplan, R.S. (1988) Measure Costs Right: Make the Right Decisions, 1988th edition, Harvard Business Review.

19. Cooper, R. and Kaplan, R.S. (1999) The design of cost management systems : text and cases, 2nd edition, Upper Saddle River, N.J. : Prentice Hall.

20. Cooper, R. and Slagmulder, R. (1997) 'Target Costing and Value Engineering', Productivity Press.

21. Covaleski, M.A., Dirsmith, M.W. and Samuel, S. (2003) 'Changes in the institutional environment and the institutions of Governance: extending the contributions of transaction cost economics within the management control literature', Accounting Organizations and Society, pp. 417-441.

22. Dekker, H. and Smidt, P. (2003) 'A survey of the adoption and use of target costing in Dutch firms', International Journal of Production Economics 84, pp. 293–305.

23. Drummond, M., Brandt, A., Luce, B. and Rotiriva, J. (1993) Standarizing methodologies for economic evaluation in health care. Practice, problems and potential., Health Care Winter.

24. Drummond, M.F., Sculpher, M.J., Torrance, G.W., O'Brien, B.J. and Stoddart, G.L. (2005) Methods for the Economic Evaluation of Health Care Programmes, Oxford: Oxford University Press.

25. Drury, C. (2012) Management and cost accounting, 8th edition, Cengage Learning.

26. Edbrooke, D., Hibbert, C., Ridley, S., Long, T. and Dickie, H. (1999) 'The development of a method for comperative costing of individual intensive care units', Anaesthesia.

27. Evans, J.H., Hwang, Y. and Nagarajan, N.J. (1997) 'Cost reduction and process reengineering in hospitals', Journal of Cost Management, May - June.

28. Fei, Z.Y. and Isa, C.R. (2010) 'Factors Influencing Activity-Based Costing Success: A Research Framework', International Journal of Trade, August.

29. Fetter, R.B. and Freeman, J.L. (1986) 'Diagnosis related groups: product line management within hospitals', Academy of Management Review, pp. 41-54.

30. Finkler, S.A., Ward, D.M. and Baker, J.J. (2009) Essentials of Cost Accounting for Health Care, New York: NY: Aspen Publishers.

31. Friedman, B. and Shortell, S. (1988) The Financial Performance of Selected Investor-Owned and Not-For-Profit System Hospitals Before and After Medicare Prospective Payment, 05159th edition, National Center for Health Services Research and Technology Assessment.

32. Garrison, R.H. and Noreen, E.W. (2003) Managerial Accounting, McGraw-Hill Companies Inc.

33. Garrison, R., Noreen, E., Brewer, P. and Uwaydah Mardini, R. (2014) Managerial Accounting, 2nd edition, Berkshire: MacGraw-Hill Education.

34. Gonzalez, M., Quesada, G., Mack, R. and Urrutia, I. (2005) 'Building an activity-based costing hospital model using quality function deployment and benchmarking', Benchmarking: An International Journal, pp. 310-329.

35. Grandlich, C. (2004) 'Using activity-based costing in surgery', AORN, Jan.

36. Green, A. (1999) Cost and cost accounting. Introduction to health planning in developing countries, Second Edition edition, Oxford University Press.

37. Gunasekaran, A. and Sarhadi, M. (1998) 'Implementaion of activity-based costing in manufacturing', International Journal ofProduction Economics.

38. Gyldmark, M. (1995) 'A review of cost studies of intensive care units: problems with the cost consept', Critical Care Medicine.

39. Harris, J.E. (1977) The Internal Organization of Hospitals: Some Economic Implications, RAND Corporation, Available: http://www.jstor.org/stable/3003297.

40. Harrison, S., Hunter, D., Marnoch, G. and Pollitt, C. (1992) 'Just Managing: Power and Culture in the National Health Service', Macmillan.

41. Hill, N.T. (1991) The adoption of costing systems in hospital industry , Dissertation Abstracts International.

42. Hill, N.T. (2000) 'Adoption of costing systems in US hospitals: An event history analysis 1980 - 1990 ', Journal of Accounting and Public Policy, Spring, pp. 41-71.

43. Hillman, A., Nash, D., Kissick, W. and Martin, S. (1986) 'Managing the medicalindustrial complex', The New England Journal of Medicine.

44. Ibusuki, U. and Kaminski, P.C. (2007) 'Product development process with focus on value engineering and target-costing: A case study in an automotive company', Int. J. Production Economics 105, pp. 459–474.

45. Innes, J., Mitchell, F. and Sinclair, D. (2000) 'Activity-based costing in the U.K.'s largest companies: a comparison of 1994 and 1999 survey results', Management Accounting Research, pp. 349–362.

46. Johnson, T.H. (1983) 'The search of gain in markets and firms: A review of the historical emergence of management accounting systems', Accounting, Organizations and Society.

47. Johnson, T. and Kaplan, R. (1987) Relevance Lost: The Rise and Fall of Management Accounting, Boston: Harvard Business School Press.

48. Johnson, S.E. and Newton, W.P. (2002) 'Resource-based Relative Value Units: A Primer for Academic Family Physicians', Family Medicine, March.

49. Kerschener, M.I. and Rooney, J.M. (1987) 'Utilizing cost accounting information for budgeting', Topics in Health Care Finance, pp. 1-9.

50. King, M., Lapsey, I., Mitchell, F. and Moyes, J. (1994) 'Costing needs and practices in changing environment: the potential for ABC in the NHS', Financial Accountability & Management.

51. Kirton, R. and Hazlehurst, M. (1991) 'Activity based costing at the Luton & Dunstable Hospital', paper presented at CIMA Mastercourse.

52. Kurunmaki, L. (1999) 'Professional vs financial capital in the field of health care - struggles for the redistribution of power and control', Accounting Organizations and Society, pp. 95-124.

53. Kurunmaki, L. (2004) 'A hybrid profession - the acquisition of management accounting expertise by medical professionals', Accounting, Organizations and Society.

54. Larsen, J. and Slothuus Skjoldborg, U. (2004) 'Comparing systems for costing hospital treatments The case of stable angina pectoris', Health Policy.

55. Lee, J.Y. (1990) 'Activity-Based Costing at Cal Electronic Circuits', Management Accounting, October, pp. 36-38.

56. Lee, T.-R. and Kao, J.-S. (2001) 'Application of simulation technique to activity-based costing of agricultural systems:a case study', Agricultural Systems.

57. Lewis, R.J. (1991) 'Activity-Based Costing for Marketing', Management Accounting, November, pp. 33-35,38.

58. Llewellyn, S. and Northcott, D. (2005) 'The average hospital', Accounting, Organizations and Society.

59. Lucey, T. (2002) Costing, 6th edition, United Kingdom: Thompson Learning.

60. Macinati, M.S. and Anessi-Pessina, E. (2014) 'Management Accounting Use and financial performance in puplic health-care organizations: Evidence from the Italian National Health Service', Health Policy, March, pp. 98-111.

61. Maelah, R. and Ibrahim, D.N. (2007) 'Factors influencing Activity Based Costing (ABC) adoption in manufacturing industry', Investment Management and Financial Innovations.

62. Meenan, R., Goodman, M., Fishman, P., Hornbrook, M. and O'Keeffe-Rosetti, M. (2002) 'Issues in Pooling Administrative Data for Economic Evaluation', The American Journal of Management Care.

63. Mogyorosy, Z. and Smith, P. (2005) The main methodological issues in costing health care services, York: Center of Health Economics University of York.

64. Monden, Y. (1995) 'Cost Reduction Systems: Target Costing and Kaizen Costing', Productivity Press.

65. Morgan, D. and Astofli, R. (2013) Health spending growth at zero:Which sectors are more affected?, 60th edition, OEDD Publishing.

66. Morgan, D. and Astofli, R. (2014) Health spending continues to stagnate in many OECD countries, OECD Publishing.

67. Narayan, A., Critchlow, H., Standing, V. and Kaye, D. (1996) 'A survey to determine the level of drug cost awareness amongst hospital consultants', Pharmacy Management, pp. 37-38.

68. Negrini, D., Kettle, A., Sheppard, L., Mills, G.H. and Edbrooke, D.L. (2004) 'The cost of a hospital ward in Europe Is there a methodology available to accurately measure costs?', Journal of Health Organization and Management.

69. NHPF (2015) The Vasics Relative Value Units (RVUs), Washington: The George Washington University.

70. OECD (2017) Health at a glance.

71. Pauly, M. and Wilson, P. (1986) Hospital output forecasts and the cost of empty hospital beds.

72. Petitti, D.B. (2000) Meta-analysis, decision analysis and cost-effectiveness nalysis. Methods for quantative synthesis in medicine, 2nd edition, Oxford University Press.

73. Porter, M. and Millar, V. (1985) 'How information gives you competitive advantage', Harvard Business Review.

74. Porter, M.E. and Millar, V.E. (1985) https://hbr.org/1985/07/how-information-gives-you-competitive-advantage[28/11/2016 11:34:33], July, [Online].

75. Preston, A.M. (1992) 'The birth of clinical accounting: A study of the emergence and transformations of discourses on costs and practices of accounting in U.S. hospitals', Accounting, Organizations and Society, pp. 63-100.

76. Rasmussen, R., Savory, P. and Williams, R. (1999) 'Integrating simulation with activity-based management to evaluate manufacturing cell part sequencing', Computers and Industrial Engineering.

77. Ridderstolpe, L., Johansson, A., Skau, T., Rutberg, H. and Ahlfeldt, H. (2002) 'Clinical Process Analysis and Activity-Based Costing at a Heart Center', Journal of Medical Systems.

78. Roy, R., Colmer, S. and Griggs, T. (2004) 'Estimating the cost of a new technology intensive automotive product: A case study approach', International Journal of Production Economics 97, pp. 210–226.

79. Shwartz, M., Young, D. and Siegrist, R. (1995) 'The Ratio of Costs to Charges: How good a basis for estimating costs?', Inquiry, pp. 476-481.

80. Swain, M. and Gladwin, B. (1998) 'Activity-Based Costing and Simulation Modeling', The Journal of Bank Cost & Management Accounting.

81. Tan, S., Rutten, F., M. van Ineveld, B., Redekop, W.K. and Hakkaart-van Roijen, L. (2009) 'Comparing methodologies for the cost estimation of hospital services', Eur J Health Econ.

82. Tan, S.S., Serdén, L., Geissler, A., Ineveld, M.v., Redekop, K., Heurgren, M. and Hakkaart-van Roijen, L. (2011) 'DRGs and cost accounting: Which is driving which?', in Diagnosis-Related Groups in Europe - Moving towards transparency, efficiency and quality in hospitals, New York: McGraw-Hill Education.

83. Theodorakioglou, Y. and Tsiotras, G. (2000) 'The need for the introduction of quality management into Greek health care', Total Quality Management.

84. Thorley Hill, N. (2000) 'Adoption of costing systems in US hospitals:An event history analysis 1980-1990', Journal of Accounting and Public Policy.

85. Tsitsakis, C.; Karasavvoglou, A.; Elefteriadou, G. (2013) The cure of a big patient - An accountant's perspective (EBEEC 2013).

86. Udpa, S. (1996) 'Activity-Based Costing for Hospitals', Health Care Management Review , pp. 83-96.

87. Vitikainen, K., Street, A. and Linna, M. (2009) 'Estimation of hospital efficiency—Do different definitions and casemix measures for hospital output affect the results?', Health Policy.

88. Waters and Hussey, H.a.P. (2004) 'Pricing Health Services for Purchasers - A review of Methods and Experiences.'.

89. Waters, H. and Hussey, P. (2004) 'Pricing Health Services For Purchasers:A Review of Methods and Experiences', Health Policy.

90. West, T.D., Balas, A. and West, D.A. (1996) 'Contrasting RCC, RVU, and ABC for managed care decisions', Healthcare Financial Management, p. 54+.

91. Wood, K. and Matthews, G. (1997) 'Overcoming the physician group-hospital culture gap', Healthcare Financial Management.

92. Wordsworth, S., Ludbrook, A., Caskey, F. and Macleod, A. (2005) 'Collecting unit cost data in multicentre studies - Creating comparable methods', Eur J Health Econom.

93. Yoshikawa, T., Innes, J. and Mitchell, F. (1994) 'Applying functional cost analysis in a manufacturing environment', International Journal of Production Economics 36, pp. 53–64.

94. Young, D. (2014) Management accounting in health care organizations, 3rd edition, San Francisco: Jossey-Bass.

95. Zimmerman, J. (2011) Accounting for desicion making and control, 7th edition, The McGraw-Hill Companies, Inc.

# EUROPEAN PROGRAMS AND FOREST BIO-ECONOMY: REVIEW AND RESEARCH GAP IDENTIFICATION

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## ABSTRACT

The starting point of this paper is the ongoing debate about the bioeconomy and how it can affect the economies of countries. In the context of the recent revision of the European Strategy concerning the bioeconomy, it is sought to draw up a dynamic policy concerning Europe's renewable organic resources. Europe seeks through the policies it implements, as well as through the relevant financial tools, to limit the consequences created due to climate change, but also due to the intense environmental pressures that have been created (European Commission, 2011).

According to the lit4erature review, it appears that despite efforts to monitor the EU bioeconomy and bioeconomies of a country (Lovrić et al., 2020) there is so far no common approach to monitoring and measuring the bioeconomy in all EU states, and as therefore it is not possible to compare the results between countries. Furthermore, according to Kardung et al., (2020), there is a need for improvements in methodologies to monitor and measure production based on bioeconomy models. Also, the perception and definition of the forest bioeconomy varies from country to country. That is why it is not possible to compare the level of financial support of the forest bioeconomy between countries (Rinn et al., 2022). It is also not possible to use it as a single and comparable indicator to measure sustainability.

The overall aim of the study is an attempt to fill the gap, measuring the impact of funding and expertise provided by all European sources (co-financed programs, research projects), in the forest bioeconomy in Greece, through the creation of an evaluation model, taking into account the economic benefits derived from them and their contribution to Regional development.

*Keywords: bioeconomy, forests, European programs, bioeconomy policies, Greece*

## 1. INTRODUCTION

The concept of bioeconomy is experiencing a rapid, positive evolution in recent years. Bioeconomy is directly linked to the production of renewable biological resources, as well as to the transformation of these resources. It relates to residues and by-products of processing, which are considered to be of

added value and can be converted into food, animal feed, products and services of biological origin, as well as bioenergy (Trydeman et al., 2015).

The development of the bioeconomy can improve the management of natural resources, ~~as it~~ provides access to new and diversified markets, and has a positive effect on tackling climate change, as well as reducing the consequences caused by climate change. The application of bioeconomy models comes to face the challenges that have been created at the global level, such as climate change, soil erosion and ecosystems, combined with the growing demand for food, animal feed and energy. Essentially, through the sustainable and circular bioeconomy, these challenges can be addressed (European Network for European Development, 2019). Among others, the bioeconomy can contribute to economic development, to well-being, and it can also lead to the creation of jobs, especially in rural and isolated areas, which have the greatest needs to strengthen employment. Furthermore, there can be a significant strengthening of the environmental and ecological sustainability of primary production, as well as of almost all of the processing activities that are directly related to it.

The recent revision (2018) of the European Bioeconomy Strategy seeks to draw up a dynamic policy for Europe's renewable organic resources. It should be emphasized that the full implementation of this strategy will result in the creation and maintenance of many jobs mainly in rural areas, through the ever-increasing participation of producers in the value chain, as well as through the diversification of economic activities. The above Strategy highlights the 'access-tofinance' as a top priority and promotes a mix of public finance tools and private investments as well as the exchange of best practices (EC 2018b). Additionally, loans and guarantee-based finance instruments are employed heavily by the EU and national public institutions to enable the bioeconomy and attract private investment. (Haarich et al. 2017; Albrecht 2019)

However, it appears, that so far, there is a lack of research on how European funding programs have contributed to the implementation of forest bioeconomy policies to date. The research so far, as shown below, partially addresses the above question whether it concerns the geographical area or the means of financing.

The research of Thöle et al. "The Agri-Environment-Climate Measure as an Element of the Bioeconomy in Poland—A Spatial Study", aims to assess the spatial diversification of the level and structure of spending funds for two Rural Development Program (RDP) measures, at supporting proenvironmental forms of agricultural management in the context of bioeconomy development.

The paper of Albrecht et al. (2021) "Regional bioeconomies: public finance and sustainable policy narratives", evaluates the public finance processes of three spatially variegated regional bioeconomy developments in Europe (Finland, Sweden, Spain). It provides empirical accounts from the case study

sites and contrasts their public finance narratives with sustainable bioeconomy policy trajectories employed in EU policy promotion and benchmarking.

The study of  Lovrić, et al. (2020) "Mapping forest-based bioeconomy research" in Europe, was a first attempt to provide an overview of the European forest-based bioeconomy research field by mapping the actual research activity in the field, based on projects from the EU Framework Programs and the European Research Area, supplemented by data on self-reported research capabilities.

The present study purports to investigate how we can measure the impact of European Programs from all funding sources on the forest bioeconomy, focusing on the case of Greece. More specifically, it tries to create a model for evaluating the impact of funding and expertise provided by all European sources in the forest bioeconomy in Greece, taking into account the benefits that derive from them at an economic level and their contribution to Regional development.

This paper presents the theoretical background, the gap identified and the first hypotheses for the study. The bibliographic review shows that in Greece, despite its classification at country and regional level in low development of the bioeconomy, (Haarich, 2017) compared to other Member States, the perspective of the importance of its implementation and development and the desire to promote it in real economy seems strong (Silaidi, 2018). Taking into account the importance of the decentralized and local dimension of the bioeconomy, as well as the severe economic crisis since 2009, measuring the impact of European Programs on the forest bioeconomy in Greece will help to shape the policy strategies related to the bioeconomy, as well as their main objectives but also the priority areas.

## 2. THEORETICAL BACKGROUND

**Conceptual approach to the bioeconomy**

The concept of bioeconomy has been defined in many ways in different contexts (Mittra and Zoukas, 2020). The term bioeconomy was coined in 1997, by Juan Enriquez and Rodrigo Martinez, in a genomics seminar: bioeconomy is described as all economic activity derived from scientific and/or research activity focused on understanding mechanisms and processes at the genetic/molecular level and as their application in the industrial process (Martinez, 1998). At a more general level, a bioeconomy "can be understood as an economy where the basic building blocks for materials, chemicals and energy come from renewable biological sources, such as plant and animal sources" (McCormick and Kautto, 2013). Within this broad understanding, many different visions of the bioeconomy have emerged.

In the bioeconomy strategy (EC, 2012), the bioeconomy is defined as "the economy based on renewable biological resources (e.g. crops, forests and animals) and their transformation into food, feed, products, materials and energy. The bioeconomy includes agriculture, forestry, the food

industry, pulp and paper production, as well as parts of the chemical, biotechnological and energy industries." Mittra & Zoukas (2020) attempted to trace the origin and use of the bioeconomy concept in the academic literature. As a result of their research, the concepts were categorized into 4 groups: for the sectors of health/medicine (red biotechnology), agriculture/food (green biotechnology), energy/environment (white biotechnology) and blue (no clear sector). Furthermore, according to the approach of Bugge et al., (2016), three main directions in the bioeconomy can be identified:

The first direction concerns biotechnology (bio-technology vision), where actions are focused on technical and innovative applications. In the context of this specific direction, it is sought to commercialize the results deriving from research and planning. The development that is created is considered uneven to a large extent, as some countries have comparative advantages over others, while correspondingly, some of the companies also have their own research departments (Philp, 2017).

Regarding the second interpretation of the bio-economy (bio-resource), it should be noted that it seeks to combine economic expansion with environmental sustainability. This direction of the bioeconomy is more geo-centric, with regard to the orientation concerning production, emphasizing the first stages of production, as well as the utilization of unexploitable lands for biofuel crops. Also, special importance is given to the field of research, as well as to the aspects of the production-consumption dipole (Luana & Blind, 2017).

Furthermore, the third direction of the bioeconomy (bio-ecology), focuses on sustainability, as well as on sustainable management, but also on the preservation of biodiversity. In the context of this direction, the prevention and mitigation of soil degradation is sought, as well as the avoidance of monovarietal crops. In addition, it is sought to achieve optimal utilization of organic waste, through reuse and recycling, before it is channeled into energy production. Particularly important is the fact that production self-regulation systems are promoted within the framework of this approach, while in the recent past, there has been an increased interest in converting from the bio-technology and bio-resource directions to the bio-ecology direction (Hausknost et al., 2017).

The three directions of the bioeconomy outlined so far (biotechnology, bio-resources and agro-ecology) are organized according to socio-technical strategies and do not adequately reflect the different socio-political trajectories that the transition to a bioeconomy may entail. For example, the biotechnology vision and the bioresources vision are conceptually entangled as both may rely on biotechnology and a large renewable resource base, while neither vision questions the overall direction of development.

**The concept of bioeconomy as a policy project**

The bioeconomy is part of the European Commission's strategic documents, including the 1993 White Paper which outlined the importance of investment and innovative biotechnology for development. Since its definition by Enriquez and Martinez (1997), the bioeconomy concept has taken off and become the basis for official initiatives in the European Union and many countries, including the United States. More specifically, the bioeconomy as a concept is first emphasized in the OECD report of 2001 and in the strategy document "The Bioeconomy to 2030: Designing a Policy" (OECD, 2009). According to the OECD "bioeconomy means the exchange of knowledge arising from the natural sciences with new, environmentally friendly, ecologically efficient and competitive products" (OECD, 2009). The term is widely used in European Commission reports but also by regional development agencies, international organizations and biotechnology companies.

On this basis, the European Commission presented and continues to present documents related to the subject. Indicatively, in 2010, the work "Bioeconomy Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth" introduced some production models based on biological processes and natural ecosystems (Beluhova-Uzunova, et al., 2019). The bioeconomy, however, was defined in the strategy of using renewable biological resources in various sectors of the economy (EC, Innovating for Sustainable Growth: A Bioeconomy for Europe, 2012). According to this definition, "bioeconomy is the sustainable production of renewable biological resources and their processing into food, feed and industrial goods and into bioenergy" (EC, 2012). Although there are similarities between the EU and OECD definitions, the latter focuses more on industrial biotechnology, biofuels, biorefineries, chemicals, transport and recycling.

The bioeconomy was also part of the discussions in the US. According to the definition from the White House "a bioeconomy is an economy based on the use of research and innovation in the life sciences to fuel economic activity and generate public benefits" (White House, 2012).

With the update of the Bioeconomy strategy (2018), a new definition was presented in EU: "the bioeconomy covers all sectors and systems based on biological resources – animals, plants, micro-organisms and produced biomass, including organic waste - the functions and their principles" (Updated Bioeconomy Strategy, 2018, pg.4). The concept of bioeconomy is transforming alongside perspectives and global goals and challenges. It should be noted that definitions differ not only internationally but also nationally and regionally.

Recently, the European Commission produced the Progress Report "European Bioeconomy Policy: Stocktaking and Future Developments" (2022). The report outlines the state of the European bioeconomy and assesses progress in the implementation of the 2018 EU Bioeconomy Strategy and its

Action Plan. It identifies policy gaps and future opportunities for the bioeconomy in light of recent policy developments under the European Green Deal.

**Bioeconomy policies in Europe**

In Europe, the European Union can be seen as the main driver of national bioeconomy policy strategies. Support for the development of the bioeconomy dates back to 2007, when Janez Potocnik, former EU Commissioner for Research, Science and Innovation, introduced the concept of a knowledge-based bioeconomy.

In 2007, Germany strengthened the concept and emphasized the importance of biological resources as primary feedstock and biorefineries as important production facilities. Germany was the first country to publish a specific national bioeconomy research strategy in 2010, followed by a policy strategy in 2013. In 2012, the European Commission presented the first specific macro-regional bioeconomy strategy, triggering the development of specific bioeconomy strategies in individual Member States of the EU. The Horizon 2020 program (2014–2020) forms the basis for further development of national research and innovation strategies across Europe. In 2014, Finland published a dedicated bioeconomy policy strategy, pushing it to become a leading bioeconomy nation in Europe (Global Bioeconomy Policy Report (IV), 2020).

The international political landscape changed significantly in 2015 with the adoption of the UN 2030 Agenda and the 17 Sustainable Development Goals which led to important discussions on the contribution of the bioeconomy to sustainable economies. As of 2015, 9 specific bioeconomy policy strategies have been adopted in Austria, France, Ireland, Italy, Latvia, Norway, Nordic countries (including Denmark, Finland, Iceland, Norway, Sweden, the Faroe Islands, Greenland), Spain and the United Kingdom. In addition, a number of strategies have been updated, including those of the EU, Italy and Germany, with Finland renewing its strategy in 2021. In the updated strategies, the concepts of sustainability, the circular economy and the need to understand the ecological boundaries of the bioeconomy became more integral parts of the bioeconomy concept. With this increasing complexity, bioeconomy strategies in Europe recognize a wide range of objectives and increasingly seek to maximize impact by better aligning with other policy priorities.

Many European countries have adopted bioeconomy-related strategies, such as research and innovation strategies (e.g. the Netherlands and Sweden have adopted holistic bioeconomy/bioeconomy research and innovation strategies). In Belgium, a regional bioeconomy strategy was developed for Flanders. Furthermore, the bioeconomy in European countries is often addressed in the wider context of green or blue development strategies and more recently within strategies focusing on the circular economy. Interestingly, in its most recent roadmap, Portugal promotes the blue bioeconomy as a new economic model, focusing on the production and use of

knowledge-based blue bioresources to provide products, processes and services (Global Bioeconomy Policy Report (IV) 2020).

**The bioeconomy in Greece**

In Greece, despite its ranking at the Greek and regional level at a low level of development of the bioeconomy (Haarich, 2017) compared to other Member States, the perspective of the importance of its implementation and development and the desire to promote it in the real economy seems strong (Silaidi, 2018). According to EU data, the bioeconomy in Greece corresponds to a turnover of 27 billion (respectively, the turnover of the EU is about 2 trillion) employing about half a million workers, with 80% corresponding to agricultural exploitation (Karagouni, 2017; Papadopoulou et al. 2018). Agriculture is an important factor in the Greek economy, more than 70% of jobs in the bioeconomy and about 55% of the added value of the bioeconomy (Ronzon & M'Barek, 2018) and contributes to 4.1% of the Greek GDP representing 70% of agricultural products and 30% of animal products (Papadopoulou et al, 2018). According to studies (e.g. Papadopoulou et al, 2018) there is a great potential for providing feed for the bioeconomy in Greece, however biomass residues are not exploited, as only 3% of the total biomass is used in Greece, mainly as fuel.

Greece does not yet have a specific National Strategy for the bioeconomy, although the Greek government gives high priority to resource efficiency and low-carbon investments (Bioeconomy Council, 2018). Government initiatives today are occasional and scattered, but there are National Strategies that mention the importance of effective management of biological resources which is related to the goals set by the bioeconomy:

1. Common Agricultural Policy Strategic Plan 2023-2027

2. National Climate Change Adaptation Strategy

3. National Research and Innovation Strategy for Smart Specialization (RIS) 2021-2027

4. National Development Strategy (NDS 2021), where the agro-food industry is defined as a
   priority axis

Focusing on forests, forest areas in Greece constitute 31.7% (Worldbank, 2016) of the country's total land area. Despite this, their participation in the GDP of the country is very small. Typically, in 2016 it was at 0.05% (Tsiaras et al., 2020) while in 2019 it was 0.04 (Kalogiannidis et al., 2022). The main characteristic of the Greek forest products market lies in the fact that its needs are not met by domestic production with a few exceptions, such as firewood, chipboard, veneers, while exports compared to imports are extremely limited (Zafeiriou et al., 2012).

Regarding biomass, several regions of Greece have a relatively high availability, which can come, depending on local characteristics, from different sources such as forest lands, agriculture as well as waste sources (excluding primary forest harvest). Nevertheless, there are significant obstacles to its

exploitation, such as the difficulty of introducing new technologies due to the age of the agricultural sector, bureaucratic difficulties in licensing ventures, the lack of financial mechanisms as well as the division of cultivated land into small sections (Papadopoulou et al. 2018).

**Bioeconomy and forests**

European forests are multifunctional, providing a range of ecosystem services such as food, shelter, regulatory (water, soil, air quality and noise reduction), cultural (recreation, tourism and health), as well as providing services (raw materials and energy, medicines, non-timber forest products such as mushrooms and berries) (Di Cori, et al., 2022). Often the importance of forest products, such as various types of plants (medicinal, aromatic plants), mushrooms and other non-wood products, is very great. Based on research, their economic value is estimated at approximately 23 billion. euros per year for the entire EU which corresponds to approximately 71% of the value of the annual roundwood production (Lovrić et al. 2020).

According to the literature (Bos & Kranendonk, 2018), forests can play a dual role in the bioeconomy, as we can manage them as carbon sinks but also as suppliers of raw materials to the forest industry. Also, after the expected decline of the graphic paper industry, important new wood-based markets are considered construction, textiles, biofuels, chemical platforms and (plastic) packaging (Hurmekoski, 2018).

The European Green Deal highlights the concept of multifunctionality, linking forest resilience to the promotion of a circular bioeconomy. Similarly, the new EU bioeconomy strategy (2018) emphasizes innovation, calling for new business models based on the valuation of forest ecosystem services. However, the lack of systematic data on non-wood products leads to a lack of awareness of its importance, which leaves them not fully taken into account in plans and policies related to rural development, forests and land use (FAO, 2014 and Sills et al., 2011). This is particularly important in the context of a developing bioeconomy, in which forests are expected to play an important role (Koukios et al., 2016; Lainez et al., 2017; Scarlat et al., 2015).

 Biomass plays a special role in the forest bio-economy. Usually the term is used to refer to organic matter used for energy production or for purposes other than nutrition, such as the production of biological materials and chemicals (Lewandowski, 2015). Biomass sources imported for conversion to bioenergy include agricultural and forestry residues, solid wastes, and terrestrial and aquatic plant crops containing exclusively energetic purposes (Papapostolou et al. 2010). Since the available arable land to cover the growing biomass demand is limited in the European Union (von Witzke and Noleppa 2016), many studies in a number of scientific areas are investigating the most efficient biomass exploitation. More generally, the slowing down of climate change, energy security and rural

development are the three main factors, at national, regional and global level, for the further use of biomass in the production of bioenergy and other bio-based products.

## Sustainability Indicators

Although there are many definitions, the most commonly used definition of sustainable development is that proposed by the Brundtland Commission "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Cerin 2006; Dernbach J. C., 1998; Dernbach, 2003; Stoddart, 2011), and does not limit the scope of sustainability. This idea of conserving resources for future generations is one of the main features that distinguish sustainable development policy from traditional environmental policy, which also seeks to internalize the externalities of environmental degradation (Emas, 2015). The overall goal of sustainable development is the long-term stability of the economy and the environment. This is only possible through the integration and recognition of economic, environmental and social concerns throughout the decision-making process.

Strong sustainability, on the other hand, recognizes the unique characteristics of natural resources that cannot be replaced by industrial capital. Most ecologists and environmentalists are supporters of the strong definition of sustainability (Stoddart, 2011). Despite the lack of continuity regarding the term sustainability, its concept has evolved from a vague concept to a set of more specific definitions that attempt to present sustainability in quantitative terms and indicators (Scerri 2010, Barbosa 2014, Büyükozkan, 2017). Some of the main sustainability indicators are the amount of materials used to produce a good or service, energy and water consumption, emissions of pollutants and toxic substances, while there are also indicators related to economic development and efforts to deal with climate change.

The use of indices for inference follows the simple rule that the smaller the index, the more efficient the process (Schwarz et al. 2002). Indicatively, in order to assess the sustainability of the use of biomass, the entire value chain and all the environmental, social and economic impacts arising from issues concerning the utilization of the raw material and its type, its characteristics and origin as well as the use are examined of the final products or their reuse (Fritsche et al., 2018).

For the creation of sustainable development models in the context of the bioeconomy there are some specific approaches that distinguish between "weak" and "strong" sustainability. The weak sustainability model maintains a market-based view of the economy, assuming that markets have the potential to ensure efficient allocation and optimal use of resources to create value (Hoffman, 2012). Essentially, it gives space to economic development under certain parameters such as the non-degradation of natural resources and then creates a more specific framework of standards and rules.

While weak sustainability pursues economic development with compensatory measures for the environment and natural resources that may be exploited, the implementation of strong sustainability requires the achievement of specific environmental constraints that must be met while pursuing economic development (Zilberman et al., 2018). Essentially, the main difference between the two is that the economy is not considered superior to the environment and that technological innovations cannot provide the only solution to challenges related to sustainability (Ekins et al., 2003). The strong sustainability model, in contrast to the weak one, considers natural capital as non-replaceable (Bennich and Belyazid, 2017) and essentially its economic exploitation can only come from its rents while maintaining its original state intact (Lewandowski 2018). Based on this model, there is from the beginning a specific legislative framework for the exploitation of natural resources from which there cannot be any deviation.

**Monitoring and Evaluation of the forest bio-economy**

Tracking bioeconomy transitions and their impacts can be seen as a Herculean task, as they cannot be easily captured using current economic statistics. Organic and non-organic products are rarely distinguished when official data are collected. However, production along bioeconomy supply chains and its impacts on sustainability require measurement and evaluation to enable informed policy making. (Jander, 2020).

For example, the BioMonitor project (2022) attempts to address the information gap in bioeconomy research by reframing the existing data and modeling framework. The study Kutay (2021): A Cross-Country Measurement of the EU Bioeconomy: An Input–Output Approach, within the Biomonitor project, manages to measure the added value of the bioeconomy that is not immediately apparent but rather hidden in other industries in part bioeconomy. The information platform created within the project provides a measure of the share of the bioeconomy for the EU-28 countries for the period 2005–2015 based on input-output tables.

In the study by Lovrić, et al. (2020), an attempt was made to form an overview of the European forest-based bioeconomy research field by mapping the actual research activity in the field, based on projects from the EU Framework Programs and the European Research Area, supplemented with data on self-reported research abilities. Projects included in the CORDIS database were used as the main data source for mapping research activity in the field of forest-based bioeconomy. The analysis is limited to the period 2008–2018, where the projects listed fall under FP7, H2020 and the European Research Area Work Program (ERA-NETs). The study assesses the coherence and synergies of public research and innovation programs and maps research activity across industries and sectors in order to help improve the existing knowledge base, while making two clear policy recommendations: the need for stronger involvement of research organizations from countries of Eastern Europe to the international

scientific community in the field of forest-based bioeconomy, emphasizing a geographical coverage criterion in future research and innovation planning and the design of research and innovation calls for projects that thematically cover multiple forest-based bioeconomy supply chain categories.

In the recent study by Rinn, et al. (2022), a comparative analysis of forest bioeconomies and our understanding of them in selected countries is carried out, and the level of comprehensive data on projects supported by the RDP 2014–2020 is assessed. This analysis showed that the perception and definition of the forest bioeconomy varies from country to country. That is why it is not possible to compare the level of financial support of the forest bioeconomy between countries. It is also not possible to use it as a single and comparable indicator to measure sustainability.

The study by Lovric, et al. (2021) provide an insight into the future of the forest-based bioeconomy sector in selected countries in South-Eastern Europe. It elicits forest-based bioeconomy experts' understanding, opinion and level of agreement on the future implementation of the bioeconomy concept by 2030/2050, through two rounds of the Delphi method. The study contributes to a better understanding of regional contexts related to forest-based bioeconomy status and further development, while demonstrating that regional and national priorities in forest-based bioeconomy should be set in regional, national and sub-national strategic documents (Winkel, 2017), to further support the implementation of the concept.

## 3. RESEARCH OBJECTIVE

Over the past twenty years, EU policy makers have prioritized the expansion of organic value chains through various EU policy initiatives and research programmes. Despite the growing popularity of the bioeconomy in Europe, its research and statistics lag in several ways, such as the lack of a comprehensive database and statistics for bio-based industries, the lack of a transparent methodology for bio-based data collection and the lack of comprehensive data and value chain indicators depicting the processing system flows of different biological materials (Kardung et al., 2019).

Despite efforts to monitor the EU's bioeconomy and a country's bioeconomies, there is so far no common approach to monitoring and measuring the bioeconomy across EU states, and therefore it is not possible to compare results across countries. Furthermore, according to Kardung (2020), there is a need for improvements in methodologies to monitor and measure production based on bioeconomy models.

In particular, in the case of Greece, there is, to date, no targeted National Strategy for the bioeconomy, the high priority assigned by the Greek government to resource efficiency, energy efficient and low carbon investments (Papadopoulou, 2018). Although the importance of the bioeconomy has been

recognized globally from an economic, social, environmental and touristic dimension, in Greece the bioeconomy model does not seem to have received the attention it deserves yet.

More specifically, from the study of the relevant literature, it emerges that

> (i) there is no comprehensive database and despite the lack of available data, the increase in policy interest has caused the need for evidence-based monitoring of the bioeconomy sectors and the effective adaptation of policy support (Ronzon 2021)

> (ii) a transparent methodology for data collection is lacking.

While there is a lack of study in emerging methodologies and monitoring systems, further, the ambiguous and unclear influence of government and EU funding and collaboration on forest bioeconomy practices makes it difficult to develop policies that foster socio-economic benefits in forest bioeconomy.

Therefore, the main purpose of this research is to measure the impact of funding and expertise provided by all European and national sources (co-financed programs, research projects), in the forest bioeconomy in Greece.

Our first research objective is to identify the role that EU and public funding plays in enhancing forest bioeconomy outputs, taking into account the economic benefits derived from them and their contribution to Regional development.

Our second research objective is to examine the influence that transnational and interregional collaborations have on these outputs.

## 4. CONCLUSION

Development into a sustainable society is challenged by various factors such as climate change, a growing and wealthier world population, rapidly increasing urbanization and growing inequality in income distribution. In 2018, the United Nations affirmed the value of sustainable development as it can bring harmony to countries' economic development, social inclusion and environmental protection. Over the past twenty years, EU policy makers have seen the important role of the bioeconomy in achieving sustainable development. This can be achieved once the bioeconomy is adapted to the achievement of the Sustainable Development Goals (Wesseler and von Braun 2017, Zilberman et al. 2018). This commitment is reflected in the launch of policy initiatives and research programs at EU level, such as the European Bio-Based Industries Joint Entertainment (Wesseler and von Braun, 2017). The recent update of the EC bioeconomy strategy (European Commission, 2018a) also highlights how high the bioeconomy is on the political agenda. So far, quantifications in the bioeconomy have focused more on economic and social aspects and less on those related to the environment (European Commission, 2018b).To appreciate how economic activities depend on forest

ecosystems and to assess the contribution of forest ecosystems to gross domestic product (GDP), one must look beyond the direct contribution of the forest sector, attempting to assess the economic impact on other industries and the indirect and induced effects on the economy. In a resource-based bioeconomy, there is a need to more thoroughly understand the full range of available resources, to define the opportunities and locations of these resources, to explain use rights as well as trade-offs and synergies between forests and other types land Wolfslehner et al. 2019. In the above research, through the methodology analyzed above, all relevant data will be collected and analyzed while the indicators will be identified through which the contribution of the forestry sector to the Bioeconomy in Greece will be described.

# REFERENCES

Albrecht, M. 2019. "(Re-)Producing Bioassemblages: Positionalities of Regional Bioeconomy Development in Finland."

Barbosa Gisele Silva, Drach Patricia Regina, Corella Oscar Daniel (2014): Global Bioeconomy Policy Report (IV) (2020): A decade of bioeconomy policy development around the world. A report from the International Advisory Council on Global Bioeconomy.

Bastos Lima, M.G. (2022) Just transition towards a bioeconomy: Four dimensions in Brazil, India and Indonesia. For. Policy Econ.

Beluhova R.-Uzunova, Shishkova M., Ivanova B. (2019): Concepts and key sectors of the Bioeconomy.

Bengtsson, A. (2019). Carbon fires from lignin-cellulose precursors.

Bennich Therese and Salim Belyazid (2017): The Route to Sustainability—Prospects and Challenges of the Bio-Based Economy.

Bergamo, D.; Zerbini, O.; Pinho, P.; Moutinho, P. (2022) The Amazon bioeconomy: Beyond the use of forest products.

Birome Holo Ba, Christian Prins, Caroline Prodhon (2016): Models for optimization and performance evaluation of biomass supply chains: An Operations Research perspective

Blake A Simmons, Dominique Loque & Harvey W Blanch (2008): Next-generation biomass feedstocks for biofuel production

Bos, H. & Kranendonk, R. (2018). Bio-economy mapping report: An overview of the bio-economy.

Bröring, S.; Vanacker, A. (2022) Designing Business Models for the Bioeconomy: What are the major challenges?

Cerin, P. (2006). Bringing economic opportunity into line with environmental influence: A Discussion on the Coase theorem and the Porter and van der Linde hypothesis.

D'Adamo Idiano, Falcone Pasquale Marcello, Morone Piergiuseppe (2019) :A New Socio-economic Indicator to Measure the Performance of Bioeconomy Sectors in Europe.

Dernbach, J. C. (1998). Sustainable development as a framework for national governance.

Dernbach, J. C. (2003). Achieving sustainable development: The Centrality and multiple facets of integrated decisionmaking.

Eggert Hakan and Greaker Mads (2014): Promoting Second Generation Biofuels: Does the First Generation Pave the Road?

Ekins P, Simon S, Deutsch L, Folke C, De Groot R (2003) A framework for the practical application of the concepts of critical natural capital and strong sustainability.

European Commission (2010). The Knowledge – Based Bioeconomy in Europe. Achievements and Challenges, Contemporary Report.

European Commission (2011). Bio-based Economy for Europe: State of play and Future Potential-Part 2, DG Research and Innovation. European Commission: Luxemburg, Belgium.

European Commission (EC). Innovating for Sustainable Growth: A Bioeconomy for Europe; COM (2012) final; European Commission: Brussels, Belgium, 2012.

European Commission Research &Innovation Food, Agriculture & Fisheries, & Biotechnology (2011): Bio-based economy in Europe: state of play and future potential Part 2, Summary of the position papers received in response of the European Commission's Public on-line consultation.

European Commission, Bioeconomy Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth, Brussels, 2010.

European Commission, Growth, competitiveness, and employment. The challenges and ways forward into the 21st century. COM (93) 700 final. Brussels: 05.12.1993.

European Commission. Bioeconomy Country Dashboard. Available online: https://knowledge4policy.ec.europa.eu/visualisation/bioeconomy-different-countries_en (accessed on 7 July 2022).

European Forest Institute (2017): Towards a sustainable bioeconomy : Assessment and the way forward . What science can tell us.

Eva-Mari Aro (2016): From first generation biofuels to advanced solar biofuels

FAO 2014. Contribution of the Forestry Sector to National Economies, 1990–2011; Forest Finance Working Paper FSFM/ACC/09; FAO: Rome.

FAO 2014. State of the World's Forests 2014: Enhancing the socioeconomic benefits from forests. FAO, Rome.

Federal Ministry of Education and Research (BMBF), Federal Ministry of Food and Agriculture (BMEL), (2015): Bioeconomy in Germany Opportunities for a bio-based and sustainable future.

Fereshteh Mafakheri, Fuzhan Nasiri, (2014) :Modeling of Biomass-to-Energy Supply Chain Operations: Applications, Challenges and Research Directions.

Forest Europe. State of Europe's Forests 2020; Forest Europe: Bratislava, Slovakia, 2020.

Frisvold, G.B.; Moss, S.M.; Hodgson, A.; Maxon, M.E.(2021) Understanding the U.S. Bioeconomy: A New Definition and Landscape. Sustainability.

Fritsche, U., Diaz-Chavez, R., de la Rúa, C., Gabriel, B., & Perrin, A. (2018). Sustainability of bioenergy. The Role of Bioenergy in the Emerging Bioeconomy.

Gabrielle B (2008): Significance and limitations of first generation biofuels

German Federal Ministry of Education and Research. Worldwide Strategies. Available online: https://biooekonomie.de/en/topics/in-depth-reports.

Grossauer Franz and Gernot Stoeglehner, (2023) Bioeconomy—A Systematic Literature Review on Spatial Aspects and a Call for a New Research

Gülçin Büyükozkan, Yagmur Karabulut (2017): Sustainability performance evaluation: Literature review and future directions.

Haarich Silke (2017), Bioeconomy development in EU regions Mapping of EU Member States' /regions'. Research and Innovation plans & Strategies for Smart Specialisation (RIS3) on Bioeconomy Final Report.

Hausknost Daniel, Schriefl Ernst, Lauk Christian and Kalt Gerald (2017): A Transition to Which Bioeconomy? An Exploration of Diverging Techno-Political Choices.

Hoffman, R. (2012) On the Need for New Economic Foundations: A Critique on Mainstream Macroeconomics.

Huber Patrick, Mikko Kurttila, Teppo Hujala, Bernhard Wolfslehner, Mariola Sanchez-Gonzalez, Maria Pasalodos-Tato, Sergio de-Miguel, José Antonio Bonet, Marlene Marques, Jose G. Borges, Cristian Mihai Enescu, Lucian Dinca and Harald Vacik,(2023):Expert-Based Assessment of the Potential of Non-Wood Forest Products to Diversify Forest Bioeconomy in Six European Regions.

Hurmekoski Elias, Jonsson Ragnar, Korhonen Jaana, Jänis Janne, Mäkinen Marko, Leskinen Pekka, and Hetemäki Lauri (2018): Diversification of the forest industries: role of new wood-based products.

Jander Wiebke, Wydra Sven, Wackerbauer Johann, Grundmann Philipp and Piotrowski Stephan (2020): Monitoring Bioeconomy Transitions with Economic–Environmental and Innovation Indicators: Addressing Data Gaps in the Short Term.

Jankovský Martin, García-Jácome Sandra P., Jiˇrí Dvoˇrák, Nyarko Isaac and Hájek Miroslav (2021): Innovations in Forest Bioeconomy: A Bibliometric Analysis.

Kalogiannidis Stavros, Kalfas Dimitrios, Loizou Efstratios and Chatzitheodoridis Fotios (2022) Forestry Bioeconomy Contribution on Socioeconomic Development: Evidence from Greece.

Kardung Maximilian, Cingiz Kutay, Costenoble Ortwin, Delahaye Roel, Heiman Wim, Lovriˊc Marko, Myrna van Leeuwen, M'Barek Robert, Hans van Meijl, Piotrowski Stephan, Ronzon Tévécia, Johannes Sauer, David Verhoog , Verkerk Pieter Johannes, Vrachioli Maria, Justus H. H. Wesseler and Benz Xinqi Zhu (2020) Development of the Circular Bioeconomy: Drivers and Indicators.

Kardung Maximilian, Ortwin Costenoble, Lara Dammer, Roel Delahaye, Marko Lovrić, Myrna van Leeuwen, Robert M'Barek, Hans van Meijl, Stephan Piotrowski, Tévécia Ronzon, David Verhoog, Hans Verkerk, Maria

Vrachioli, Justus Wesseler, Benz Xinqi Zhu (2019) Framework for measuring the size and development of the bioeconomy.

Kleinschmit, D.Lindstad, B.H. Thorsen, B.J. Toppinen, A.Roos, A. Baardsen, S. (2014) Shades of Green: A Social Scientific View on Bioeconomy in the Forest Sector.

Koukios, E. "The bio-tsunami project." The emergence of bioeconomy-opportunities and risks-a forward-looking study, ITeE, Radom (2017).

Kutay Cingiz, Hugo Gonzalez-Hermoso , Wim Heijman and Justus H. H. Wesseler (2021): A Cross-Country Measurement of the EU Bioeconomy: An Input–Output Approach.

Lainez Manuel, José Manuel González, Alfredo Aguilar, Carmen Vela (2017). Spanish strategy on bioeconomy: Towards a knowledge based sustainable innovation.

Leire Barañano , Olatz Unamunzaga, Naroa Garbisu, Siebe Briers, Timokleia Orfanidou, Blasius Schmid , Inazio Martínez de Arano, Andrés Araujo and Carlos Garbisu(2022): Assessment of the Development of Forest-Based Bioeconomy in European Regions.

Leskinen Pekka, Cardellini  Giuseppe, González-García Sara, Hurmekoski  Elias, Sathre Roger, Seppälä Jyri, Smyth  Carolyn, Stern Tobias and Verkerk  Pieter Johannes (2018): Substitution effects of wood-based products in climate change mitigation.

Levidow, L., Birch, K., Papaioannou, T. (2015). EU-agri-innovation: two contending visions of the bio-economy.

Lewandowski, I., Guadet, N., Lask, J., Maier, J., Tchouga, B., Vargas-Carpintero, R. (2017). Conventional Textiles- A Statistical Review.

Linser Stefanie and Lier Markus (2020): The Contribution of Sustainable Development Goals and Forest-Related Indicators to National Bioeconomy Progress Monitoring.

Lovrić Marko, Nataša Lovrić, Robert Mavsar (2020): Mapping forest-based bioeconomy research in Europe.

Lovrić Marko, Riccardo Da Re, Enrico Vidale, Irina Prokofieva, Jennifer Wong, Davide Pettenella, Pieter Johannes Verkerk, Robert Mavsar (2020):Non-wood forest products in Europe – A quantitative overview.

Lovrić, Nataša Marko Lovrić, Robert Mavsar (2019): Factors behind development of innovations in European forest-based bioeconomy

Lovric, Natasa Silvija Krajter Ostoic, Dijana Vuletic , Mirjana Stevanov , Ilija Đorđevic, Vladimir Stojanovski , Marta Curman (2021): The future of the forest-based bioeconomy in selected southeast European countries

Luana, L. & Blind, K. (2017). Overview of policies, standards and certifications supporting the European bio-based economy, Current Opinion in Green and Sustainable Chemistry.

Maliha Azra, Bassam Abu-Hijleh (2022): A review on the current status and post-pandemic prospects of third-generation biofuels

Marchetti Marco, Vizzarri Matteo, Lasserre  Bruno, Sallustio  Lorenzo, Tavone Angela (2014): Natural capital and bioeconomy: challenges and opportunities for forestry.

Mariusz Maciejczak, Karen Hofreiter, (2013): How to define bioeconomy?

Martinez J. 1998: Genomics and the World's Economy.

McCormick, K.; Kautto, N. The Bioeconomy in Europe (2013): An Overview. Sustainability

Meenakshi Piplani and Carsten Smith-Hall (2021): Towards a Global Framework for Analyzing the Forest-Based Bioeconomy.

Mittra, & Zoukas, G. (2020). Unpacking the concept of bioeconomy: problems of definition, measurement, and value.

Moritz Albrecht, Grundel Ida and Morales Diana (2021) Regional bioeconomies: public finance and sustainable policy narratives.

Näyhä Annukka (2019): Transition in the Finnish forest-based sector : Company perspectives on the bioeconomy, circular economy and sustainability.

Ncube, A.; Sadondo, P.; Makhanda, R.; Mabika, C.; Beinisch, N.; Cocker, J.; Gwenzi, W., Ulgiati, S. (2022) :Circular bioeconomy potential and challenges within an African context: From theory to practice.

OECD (2009). The Bioeconomy to 2030: Designing a policy agenda.

OECD. The Application of Biotechnology to Industrial sustainability, 2001.

Organisation for Economic Cooperation and Development (OECD). The Bioeconomy to 2030: Designing a Policy Agenda, Main Findings; Organisation for Economic Cooperation and Development: Paris, France, 2009..

Papadopoulou Christina-Ioanna, Loizou Efstratios, Melfou Katerina and Chatzitheodoridis Fotios (2021) The Knowledge Based Agricultural Bioeconomy: A Bibliometric Network Analysis

Papadopoulou Electra, Vaitsas Konstantinos, Fallas Ioannis, Tsipas Giorgos, Chrissies Konstantinos, Bikiaris Dimitrios, Kottaridi Constantina and Vorgias Konstantinos E. (2018): Bio-economy in Greece: Current trends and the road ahead.

Papapostolou Ch., Minoyiannis M., Kondili E., 2010. Biomass Supply Chain Development in Greece with Special Focus on the Utilization of Biomass Residues.

Patermann, C.; Aguilar, A. 2018. The origins of the bioeconomy in the European Union. New Biotechnol.

Philp, J. (2017). The bioeconomy, the challenge of the century for policy makers. New Biotechnology.

Pyka, A.; Cardellini, G.; van Meijl, H.; Verkerk, P.J. (2022) Modelling the bioeconomy: Emerging approaches to address policy needs.

Rachel Emas (2015) :The Concept of Sustainable Development: Definition and Defining Principles

Robert Nicolas, Giuntoli Jacopo, Araujo Rita, Avraamides Marios, Balzi Elisabetta, Barredo José I., Baruth Bettina, Becker William, Borzacchiello Maria Teresa, Bulgheroni Claudia, Camia Andrea, Fiore Gianluca, Follador Marko, Gurria Patricia, la Notte Alessandra, Lusser Maria, Marelli Luisa, M'Barek Robert, Parisi Claudia, Philippidis George, Ronzon Tévécia, Sala Serenella, Lopez Javier Sanchez, Mubareka Sarah (2020). Development of a bioeconomy monitoring framework for the European Union: An integrative and collaborative approach

Scerri Andy and Paul James (2010): Accounting for sustainability: combining qualitative and quantitative research in developing 'indicators' of sustainability.

Ronzon Tévécia and M'Barek Robert (2018): Socioeconomic Indicators to Monitor the EU's Bioeconomy in Transition.

Ronzon Tévécia, Iost Susanne, Philippidis George (2021): Has the European Union entered a bioeconomy transition? Combining an output‑based approach with a shift‑share analysis.

Rinn, Radek Petra Palátová , Markéta Kalábová and Vilém Jarský (2022):Forest Bioeconomy from the Perspectives of Different EU Countries and Its Potential for Measuring Sustainability.

Romani, A., Rocha, C.M.R., Michelin, M., Domingues, L., Teixeira, J.A. (2020). Valorization of lignocellulosic-based wastes. In Current Development in Biotechnology and Bioengineering: Resource Recovery from Wastes.

Ronzon Tévécia, Lost Susanne, Philippidis George (2021). An output-based measurement of EU bioeconomy services: Marrying statistics with policy insight

Ronzon, T.; Santini, F.; M'Barek, R. The Bioeconomy in the European Union in Numbers—Facts and Figures on Biomass, Turnover and Employment; Joint Research Centre, Institute for Prospective Technological Studies: Seville, Spain, 2015; pp. 1–4. Available online: https://joint-research-centre.ec.europa.eu/publications/bioeconomy-european-union-numbers-facts-and-figuresbiomass-turnover-and-employment_en (accessed on 15 July 2022).

Socio-Economic and Environmental Impacts of Biomass Valorisation: A Strategic Drive for Sustainable Bioeconomy.

Searcy Erin and Flynn Peter C. (2008): The impact of biomass availability and processing cost on optimum size for biomass processing

Scarlat Nicolao, Jean-François Dallemand, Fabio Monforti-Ferrario, Viorel Nita (2015): The role of biomass and bioenergy in a future bioeconomy: Policies and facts

Silaidi Maria, 2018: Greek Agro-food Map, Bioeconomy development in Greece

Sills, E., Shanley, P., Paumgarten, F., de Beer, J. and Pierce, A. 2011. Evolving perspectives on non-timber forest products. In Non-timber forest products in the global context.

Singh Aditi, Prajapati, Shaili Vyas, Vivek Kumar Gaur, Raveendran Sindhu, Parameswaran Binod, Vinod Kumar, Reeta Rani Singhania, Mukesh Kumar Awasthi, Zengqiang Zhang, Sunita Varjani (2022): A Comprehensive Review of Feedstocks as Sustainable Substrates for Next-Generation Biofuels

Stark, S.; Biber-Freudenberger, L.; Dietz, T.; Escobar, N.; Janosch Förster, J.; Henderson, J.; Laibach, N.; Börner, J.(2022) Sustainability implications of transformation pathways for the bioeconomy.

Stoddart, H. (2011). A Pocket guide to sustainable development governance.

Schwarz, J., Beloff, B., & Beaver, E. (2002). Use sustainability metrics to guide decision-making.

The "Circular Bioeconomy" – Concepts, Opportunities and Limitations(2018): Michael Carus and Lara Dammer, nova-Institut, Hürth (Germany)

The Federal Government of Germany (2020) National Bioeconomy Strategy.

Thöle-Jezierska Aleksandra, Rudnicki Roman, Łukasz Wiśniewski, Marta Gwiazdzinska-Goraj and Mirosław Biczkowski (2021). "The Agri-Environment-Climate Measure as an Element of the Bioeconomy in Poland—A Spatial Study"

Trydeman K.M.; Hermansen J.E.; Thostrup, L.B.; 2015. Mapping Sustainability Criteria for the Bioeconomy.

Tsiaras, Koulelis, & Spanos (2020): The contribution of forests in regional development: the role of National Forest Strategy in Greece.

Viola Di Cori, Nicolas Robert , Cristiano Franceschinis , Davide Matteo Pettenella and Mara Thiene (2022). Framework Proposal to Quantify the Contribution of non-Wood Forest Products to the European Union Forest-Based Bioeconomy.

Weber, C., Farwick, A., Benish, F., Brat, D., Dietz, H., Subtil, T., Boles, E. (2010). Trends and challenges in the microbial production of lignocellulosic bioalcohol fuels.

White House, National Bioeconomy Blueprint. The White House Washington, 2012

Witzke Von Harald and Noleppa Steffen (2016). A European perspective: the case for a highly productive and innovative agriculture in Europe.

Wolfslehner, B.; Prokofieva, I.; Mavsar, R. (Eds.) Non-Wood Forest Products in Europe: Seeing the Forest around the Trees. What Science Can Tell Us 10; European Forest Institute: Joensuu, Finland, 2019.

Zafeiriou E., G. Arabatzis and Th. Koutroumanidis (2012) : The round wood market in Greece: An empirical approach.

Zilberman, D., Gordon, B., Hochman, G., & Wesseler, J. (2018). Economics of sustainable development and the bioeconomy..

# ECONOMIC RETURNS TO HIGHER EDUCATION FOR INDIVIDUALS AND COUNTRIES: EVIDENCE FROM LITHUANIA

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## ABSTRACT

**The purpose** of the study is to evaluate the effectiveness of higher education in Lithuania by identifying return to higher education for both individual university graduates and the state.

**Design/Methodology/Approach**. Two methods - the Mincer earnings equation and the full discounting, - are applied in present study drawing a clear distinction between the return enjoyed by individuals and those accrued to the country. In this paper, calculations for individual economic returns are done using newly available 2018 Lithuanian Department of Statistics data on the wage structure. To estimate the country's return on education, we apply the full discounting method using detailed publicly available National Tax Company's and Lithuanian public finance data.

**Findings.** The results of our study indicate that in Lithuania investments into education positively influences individual earnings and the society mainly due to the low costs of education and the high returns. For individuals' net present value is on average about 250 000 Euros and the internal rate of return is around 15%. The highest return is for male working in a company of 50-249 employees and holding bachelor degree. It is also noteworthy that one additional year spent in education increases earnings on average by 4.1%. The financing of first cycle studies costs the state two times less than second and third cycle studies. For this reason, the net present value (NPV) and internal rate of return (IRR) of first cycle studies are higher than those of second and third cycle studies are.

**Originality/value**. Higher education is generally seen as a way to ensure financial stability and provide both short- and long-term benefits for a career advancement. However, rising education costs and uncertainty about job prospects put prospective students and their parents at a crossroads and raise the questions: Do the financial benefits outweigh the costs? How much more is that better education worth? In the case of Lithuania, considering the amount of research in this area, little evidence has been found in the literature on financial gains from higher education for individuals or country. We believe that the present results are significant in at least two major respects: they shed new light on this issue and provide substantial implications for designing effective funding policies in higher education.

*Keywords: investment, higher education, full discounting method, Mincer earnings function, Lithuania*

## INTRODUCTION

Obtaining a tertiary degree brings many labour-market advantages. In 2021, across OECD countries the average unemployment rate for individuals with tertiary attainment was 4%, whereas it was 6% for those with upper secondary attainment and 11% for those with below upper secondary attainment. Full-time workers with tertiary attainment earn on average approximately 50% more than workers with upper secondary attainment and nearly twice as much as workers without upper secondary attainment (OECD, 2022). It is also a known fact that education helps people to achieve financial stability and protects strongly against the effects of economic crises and Covid-19 pandemics. Importance of financial stability especially increased during 2008 financial crisis – post financial crisis more people decided to apply to universities (Webber, 2014). In addition, global spending on education has risen significantly over the past two decades, although spending as a share of gross domestic product has remained relatively unchanged, at about 4.5 percent (OECD, 2022). With rising costs of education, the central questions are: does investment in education always pays off. What is the added value for various levels of higher education? Because of the rising costs of education, potential students forego university (Webber, 2014). Decision to study or not should be based on potential financial rewards, keeping in mind that not all university degrees bear the same returns.

Most of the authors apply Mincer earnings function to calculate return on education in their studies. Yubilianto (2020) used two methods – Mincer earnings function and full discounting method. Mincer earnings function is easy to calculate and has needed data, however this method doesn't include costs of education, therefore the return on education isn't complete. Full discounting method includes costs of education, however data for this method is harder to obtain. To overcome this challenge, US Census Bureau came up with synthetic work-life-earning variable, as cited by Yubilianto (2020). This variable shows hypothetical earnings that a person earns throughout their tenure in the workforce.

However, global trends mask large differences across countries. As extensively discussed in the research papers, the size of the direct effect of education varies among individuals and countries. The aim of this paper is to evaluate the effectiveness of higher education by identifying return to higher education in Lithuania for individual university graduates and the economy.

The next section details the theoretical framework of return to education on both for individual and the country with an emphasis on the tertiary level. Then we describe empirical framework and the data sources. Next section discusses the results, and the last section concludes.

## THEORETICAL FRAMEWORK OF RETURN TO EDUCATION

*Return to education for an individual*

There is consensus that differences in educational attainments explain a significant fraction of the adult variation in wages, incomes, and other economic outcomes. The emergence of large-scale microeconomic datasets in the1960s lead to an outpouring of research on education and earnings (Card, 1999). Previous research suggests that return to education is usually measured in gains on wage when education is complete and it differs in various countries: Belgium – 29%, UK – 57%, USA – 77% and Argentina – 156%. (Webber, 2014). OECD (2022) noticed that in countries where studies are hard but it's easy to get into university return on education is smaller compared to countries where university degree is reserved for only handful of people but it's easy to graduate (Belgium – 29% compared to Argentina – 156%).

Becker's (1964) human capital model suggests, when deciding whether to continue their educations, individuals compare the benefits of human capital to the costs of obtaining it. Return to education depends on various factors: notoriety of university, personal attributes, and field of studies. Webber (2014) conducted research in UK and found that studies that required obtaining technical skills yielded the highest return. This seems logical because of the work force supply and demand. People with technical skills (mathematics, computer science, economics etc.) can create high value for the company hence the higher wage. Graduates of such technical studies are in high demand in the work force. Webber (2014a) calculated returns for biggest university programs in USA: science, technology, engineering, and mathematics (STEM) fields, business, social studies, and arts and compared them to salaries of a high school graduate. STEM fields are thought to be major drivers of innovation and therefore have important consequences for long-run economic growth and individual welfare (Atkinson and Mayo, 2010). Because of highly regarded skills STEM graduates tend to have the highest salary to be precise, they could earn up to $1.5 million more than high school graduate could. Economics graduate could receive up to $1.7 million more compared to a person with high school diploma. However, not all university graduates are compensated the same – graduate of psychology studies could earn $700,000 more than high school graduate. That is considerably less than other university programs graduates earn. Overall, theory suggests that education is worth the costs; however, prospective students should consider their personal characteristics, prestige of university as well as field of study when applying. There is an unwritten expectation that if a person graduates high school he must study at university. However, due to increased universities fees education will not pay back wanted returns.

Economic theory predicts that an individual's education not only boosts his or her own productivity but also that of others, that is the presence of more educated workers leads to a "knowledge spillover".

Some studies (Acemoglu and Angrist, 2000) have found empirical evidence in support of this prediction.

*Return to education for economy*

This study takes the human capital approach to return to education which assumes that education improves a worker's productivity and thus earnings, that earnings rise over time, that the rate of increase falls with age and that the rate of return falls as educational attainment rises (O'Donoghue, 1999).

Part of economic discourse is on the return to education for the country in which the student is studying. Schultz; Becker; Heckman and Klenow; Hanushek and Woesmann as cited by Bhutoria (2016) claim that additional year in official education increases GDP per capita. Higher education aids economy by attracting foreign investments into research and development sector. Such sector is developing high tech technology that requires educated professionals to operate.

Hall (2000) theorizes that because of two mechanisms: Schumpeterian growth and propagation or dissemination of knowledge employees become more efficient thus GDP grows. Schumpeterian growth achieves growing GDP by increasing investment in human capital. Theory of human capital states that investment into skills of an employee will benefit both employee and employer (Schultz, 1961). Propagation of knowledge is based on official education in the schools. We can assume that investment into human capital can be beneficial for a country and an individual. Individual will gain skills and therefore will be eligible for a promotion. Whereas country also has a reason to invest into human capital, because in doing so country will increase its work force expertise thus increasing GDP.

Considering these results in the literature, several hypothesis were developed. Specifically, we hypothesize that:

H1: the rates of return to education fall as educational attainment rises.

H2: the rates of return to education are not homogeneous (they vary among demographic groups).

H3: years spent in education increase earnings.

H4: investment into human capital is beneficial for a country.

## EMPIRICAL FRAMEWORK

There are two conventional methods to measure the rate of return of investment to education, namely Mincer earnings function method and the full discounting method. In interpreting the evidence presented below, it is necessary to bear in mind that Mincer and full discounting returns are not directly comparable because they differ in scale (Psacharopoulos and Patrinos, 2018). In line with these methods and hypotheses stated, in our study we use research model presented in Figure.

Full Discounting Method

Mincer Equation

Data on wage, age, experience, sex and educational attainment

Calculate earnings per career (SWE)

Constructing Mincer earnings regression

Tuition fees

Finding Mincer earnings regression coeficients

Calculate NPV and IRR

Return on education

Comparison

Return on education
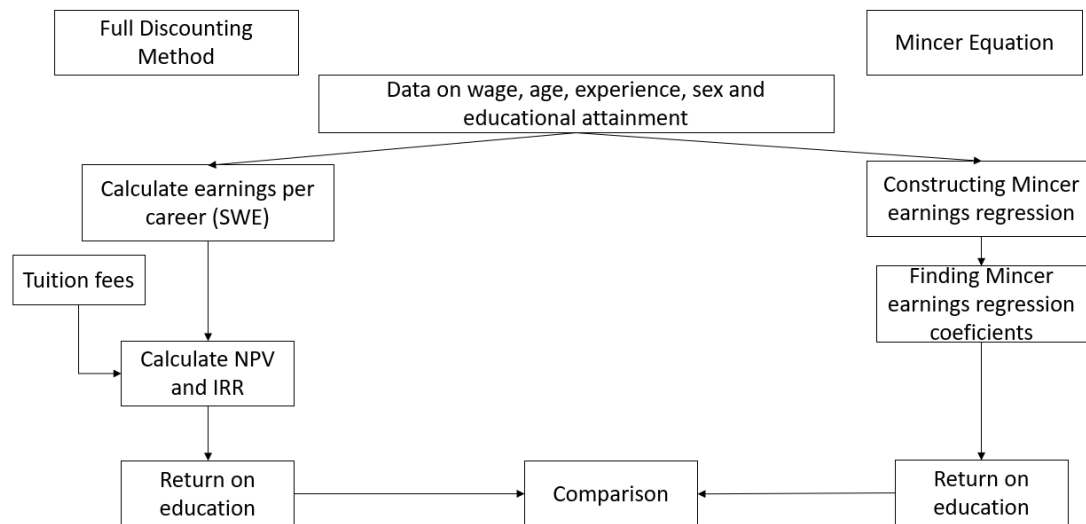
Figure. *Research model*

*Note:* NPV- net present value; IRR - internal rate of return.

*Source:* adapted Yubilianto, 2020.

The internal rate of return (IRR) shows the amount of discount that, if applied, would make the net present value 0. In other words, what is the profitability of a particular investment? Net present value (NPV), on the other hand, represents the present value of a future stream of payments.

In measuring the return to education, we examine the differences in costs and benefits between two education levels and other characteristics based on advanced econometric techniques.

*Mincer earnings function*

Many authors (Yubilianto, 2020; Comola and Mello, 2010; Patrinos, 2016; Psacharopoulos and Patrinos, 2014 and 2018) use Mincer earnings function to calculate returns on investment in education for individuals because of its convenience. According to Card (1999, p.1804), Mincer earnings equation can be seen as "an extraordinarily successful marriage of inductive and deductive reasoning". This single-equation model that explains wage income as a function of schooling and experience was first introduced by a father of modern labor economics Jacob Mincer in 1974 (Mincer, 1974). The equation has been examined on many datasets. In this paper we use following equation:

$$ln\,(earnings_i) = \beta_1 + \beta_2 yos + \beta_3 tenure_i + \beta_4 tenure_i^2 + \beta_5 sex_i + \sum_i$$

where

$earnings_i$ – earnings of an employee; $yos_i$ – years spent in official education; $s$ – years spent in formal education; $tenure_i$ – tenure in current workplace; $sex_i$ – sex of an employee; $\epsilon_i$ – error terms.

The Mincer equation provides estimates of the average monetary returns of one additional year of education. As can be seen from equation (1) Mincer earnings function does not include costs of education; it only focuses on the effects of education and experience.

*Full discounting method*

Despite economists' general satisfaction with the application of Mincer method, some of them decided to shift toward a full discounting method to investigate return to education. The full discounting method is used to compute not only the private rate of return but also the social rate of return. It estimates the relationship between schooling and earnings over the life cycle, comparing costs to the discounting stream of expected earnings (Moreno and Patrinos, 2020). The full discounting method resembles the cost–benefit analysis; therefore, it is necessary to find out costs and benefits of education for an individual and the society in Lithuania. Benefits of education are clear; mostly it is about increases in earnings. However costs of education is broader issue: tuition fee, rent of flat, opportunity costs, food etc. Moreover, costs are calculated for whole period of studies while benefits are calculated for working period of a person. Pros of full discounting method is that it includes direct and indirect costs of education therefore is more precise empirical procedure. One limitation of this methodology is that the discounting method requires specific information that is not easily accessible or available in surveys or censuses (Moreno and Patrinos, 2020). US Census Bureau came up with fictional variable to overcome lack of data: synthetic work-life earnings (SWE) variable. This artificial variable seeks to show persons' earnings earned throughout his career. SWE calculations are not complicated: first the employees must be divided into age groups (e. g. 15-20 that is 5-year gap); second, we have to calculate median wage (because it prevents outliers from distorting the data); thirdly, we multiply the median by 5 (that way we know each individual salary); and lastly, we add them all up (Yubilianto, 2020).

*Data*

Secondary sources of data were consulted in order to obtain the necessary information for the present study. To calculate return to education this study uses two sources of data: newly available 2018 Lithuanian Department of Statistics data on the wage structure and open access data on Lithuanian finance (Atviri Lietuvos finansai, 2018). The report of Lithuanian Department of Statistics also contains data on employee's educational attainment, sex, tenure at current employer, size of the company, age, profession, overtime worker and wage. Costs of education are not listed in this data set, therefore we used Lithuanian Department of Statistics data on tuition fees, public transport ticket price, food prices, rent prices in 2018 to calculate costs of education for duration of one's studies.

Benefits of education for a state are based on collected tax from employees and employer: income tax and resident's income tax to be precise. Employees earn more because of their increased productivity thus state collects more tax. This information was found in open access page on Lithuanian finance.

It should be noted that in this study are a number of assumptions and certain limitations that need to be met before performing calculations of the return to education:

1. We use data on the university students only.

2. We use data on students at public (state funded) universities.

3. Students can be fully funded by the state or not funded by the state.

4. If student was accepted into university as fully funded, he/she will graduate with the same status.

5. State will only fund tuition fees for the students.

6. Mincer earnings function will only be used to calculate return to education for an individual.

7. Full discounting method will be used to calculate return to education for Lithuanian economy

8. Student does not work during his/her studies.

9. Discount rate is 3%.

10. G1 is primary or elementary education.

11. G2 is secondary education.

12. G3 is bachelor's degree.

13. G4 is master's/doctoral degree.

14. Finally, authors calculate variable experience (as the years from which people start that education and deducting it from the higher end of each age group).

Regardless of these data limitations and assumptions, our estimates are sufficiently accurate and point to the empirical magnitude of return to education.


## EMPIRICAL RESULTS

*Individual return to education (Full discounting method)*

Table 1 provides evidence to suggest that return to higher education depends on various factors. The first column of Table 1 reports that all university students assigned to groups based on their educational attainment (bachelor studies and master's/doctoral studies), their living arrangements (renting an apartment, living in a student dormitory, or living with parents) and whether the studies are State Funded (SF) or Not State Funded (NSF). From this table, we can observe that the highest return to education can expect a bachelor state funded student who lives with his/her parents and does not pay his/her tuition fee (NPV is 223 831 Eur. and IRR is 46%). For a master's/doctoral student the return is lower and the largest values of both indicators are for those who receive state scholarships and live with parents (NPV is 211 546 Eur. and IRR is 19%). First-cycle students have lower costs, mainly due to a shorter study period and lower study costs. For this reason, undergraduate students have a higher net present value and internal rate of return than graduate or

doctoral students. It should be noted that both indicators – NPV and IRR - are calculated for the entire working career.

| Group of students | Costs, Eur. | Net present value (NPV), Eur. | Internal rate of return (IRR), % |
|---|---|---|---|
| Bachelor student, NSF, and rents an apartment | - 49 224 | 196 495 | 20 |
| Master's or doctoral student, NSF, and rents an apartment | - 140 296 | 125 970 | 7 |
| Bachelor student, NSF, and lives in students dormitory | - 42 289 | 203 430 | 24 |
| Master's or doctoral student, NSF, and lives in students dormitory | - 122 958 | 143 308 | 8 |
| Bachelor student, NSF, and lives with parents | - 30 984 | 214 735 | 32 |
| Master's or doctoral student, NSF, and lives with parents | - 94 696 | 171 570 | 11 |
| Bachelor student, SF, and lives in students dormitory | - 33 193 | 212 526 | 30 |
| Master's or doctoral student, SF, and lives in students dormitory | - 82 982 | 183 284 | 12 |
| Bachelor student, SF, and rents an apartment | - 40 128 | 205 591 | 25 |
| Master's or doctoral student, SF, and rents an apartment | - 100 320 | 165 946 | 10 |
| Bachelor student, SF, and lives with parents | - 21 888 | 223 831 | 46 |
| Master's or doctoral student, SF, and lives with parents | - 54 720 | 211 546 | 19 |

Table 1. *Return to higher education using full discounting method (return for an individual), Lithuania 2018*

*Note:* SF- State Funded studies; NSF - Not State Funded studies*.*

*Source:* authors calculations.

The results of this study are similar to those of other researchers; in Yubilianto's (2020) study, he found that the IRR of public universities varied between 18 and 54 percent.

To conclude, these differences in return by graduate degree suggest a question: to what extent do these differences represent the causal effects of the degrees? According to Altonji, Humphries and Zhong, (2022), this question is hard to answer as people likely sort into specific graduate programs based on their occupational preferences and predetermined ability, making it difficult to separate out the differences in sorting from differences in returns.

*Lithuania's economy return to education (Full discounting method)*

By comparing the total benefit of continuing to higher education with all costs borne by the workers during their study, we calculated the value of the return of investment to education using full discounting method. The same assumptions are accepted: the discount rate is 3 percent, for state funded studies the state pays only the costs of university studies. For this reason, studies that are not funded by the state do not cost the state anything. As discussed earlier, the financing of first cycle studies costs the state two times less than second and third cycle studies. For this reason, the net present value (NPV) and internal rate of return (IRR) of first cycle studies are higher than those of second and third cycle studies. As shown in Table 2, NPV of state funded bachelor studies is 913 367 984 Eur., and IRR – 1489.7%. Return of master's/doctoral studies is lower: 791 799 832 Eur. NPV and 444.2% of IRR. After investment in not state funded bachelor studies Lithuanian economy will gain

976 648 856 Eur. of NPV and 100594732% of IRR. Not state funded master's/doctoral studies will bring

976 648 856 Eur. of NPV and 100594732% of IRR.

|  | Bachelor studies (SF) | Master's/doctoral studies (SF) | Bachelor studies (NSF) | Master's/doctoral studies (NSF) |
|---|---|---|---|---|
| Costs, Eur. | -63 280 872 | -184 849 024 | 0 | 0 |
| Net present value (NPV), Eur. | 913 367 984 | 791 799 832 | 976 648 856 | 976 648 856 |
| Internal rate of return (IRR) | 1489.7% | 444.2% | - | - |

Table 2. *Return to higher education using full discounting method (return for Lithuanian economy), 2018*

*Source*: authors calculations.

It is important to stress that the calculation of the return to the state in previous studies was carried out more from a theoretical point of view. In addition, as discussed earlier, there was not much data available on the state's tax receipts. Therefore, it is difficult to decide whether the results of this study are consistent with the literature.

*Individual return to education (Mincer earnings function)*

According to the results of our calculations, on average, in Lithuania for individuals NPV is about 189 000 Euros and IRR is around 20 %. NPV is higher for the holders of bachelor degree compared to the graduate of master's or doctoral studies. Variations in return to education also reflect factors other than educational attainment. For instance, the gender pay gap persists regardless of level of educational attainment, size of the company etc. (OECD, 2022). In the Table 3 the results of two Mincer earning functions are presented: in the first, one education is described as years spent in official education and in the second education is understood as the highest level of education obtained. From the Table 3 we can see that in both equations all variables are statistically significant except experience variable. Mincer earnings equation where education is understood as years spent in education shows that the biggest impact on earnings has company size (contrary to first belief, company of 50-249 employees has bigger effect on earnings than 250 or more employees' company). If person works in a company of 50-249 employees, his wage could increase by 43.3%, and if he/she worked in the company that employed more than 250 people his/her salary could increase by 42.3%. Surprisingly, negative effect on earnings has tenure squared, experience and experience squared. In addition, results of our analysis also suggest that one additional year spent in education would increase earnings by 4.1%.

| Variable | Estimate | Statistical significance |
|---|---|---|
| Variable is years spent in official education (years_edu) | | |
| (Intercept) | 7.591 | *** |
| years_edu | 0.04111 | *** |
| GenderM | 0.2468 | *** |
| tenure | 0.0827 | *** |
| tenure2 | -0.00176 | *** |
| Company250> | 0.4229 | *** |
| Company50-249 | 0.4333 | *** |
| exp | -0.00006256 | |
| exp2 | -0.0001809 | *** |
| Variable is highest obtained education (education) | | |
| (Intercept) | 7.747 | *** |
| educationG2 | 0.1957 | *** |
| educationG3 | 0.612 | *** |
| educationG4 | 0.5936 | *** |
| GenderM | 0.257 | *** |
| tenure | 0.08109 | *** |
| tenure2 | -0.00172 | *** |
| exp | 0.002521 | |
| exp2 | -0.0001717 | *** |
| Company250> | 0.4458 | *** |
| Company50-249 | 0.4381 | *** |

Table 3. *Results of Mincer earnings function (individual return), Lithuania 2018*

*Note:* Any p-value less than 0.001 was designated with three (***) asterisks.

*Source:* authors calculations.

In case of Mincer earnings function with education seen as highest level of education obtained, regression functions have similar tendencies (negative tenure squared and experience squared). If a person obtains secondary education (G2) his earnings could increase by 19.57%. If person obtains bachelor's degree, he/she could get a 61.2% higher salary. However, if person obtains master's/doctoral degree he/she should get 59.4% higher earnings. This shows that the salary difference between graduate of tertiary education (bachelor) yields higher returns than high school graduate compared to master's/doctoral degree holder and high school graduate. Heteroskedasticity tests were performed to ensure the reliability of our results. After running the Breush-Pagan test on both Mincer's earnings regression functions, we got a p-value less than 0.05.

The results obtained by construction of Mincer's earnings functions are similar to those obtained by other authors (Comola and Melo, 2010; Yubilianto, 2020).

To sum up, the results of the analysis revealed that *all hypotheses* stated in the previous section are *not rejected*:

- Economic return to education is higher for bachelor degree compared to master's or doctoral studies (H1): *the rates of return to education fall as educational attainment rises*).

- There is heterogeneity in the average return to higher education depending on characteristics of individual (gender, size of the company, experience in the workforce, tenure in current company, highest attained education level). The highest return is for male working in a company of 50-249 employees and holding bachelor degree (H2: *the rates of return to education are not homogeneous*).

- One additional year spent in education increases earnings on average by 4.1% (H3: *years spent in education increase earnings*).

- Investment into education in Lithuania positively influences the economy (H4: *investment into human capital is beneficial for a country*).

In general, these results are similar to many other reviews of the literature, except an atypical situation: the rate of return for women in Lithuania was higher than rate of return for men in 2018.

## CONCLUSION

The value of a higher education degree is indisputable: the more advanced your education, the higher your earning potential. Many empirical studies reviewed here find a positive correlation between higher levels of educational attainment and higher earnings and better employment outcomes.

This paper considers returns from the perspective of the individual and society. Literature review revealed that the most commonly used method to calculate return to education is Mincer earnings function. Its biggest drawback is that it does not include costs of education thus cannot show full picture of return to investment in education. Therefore, application of full discounting method was employed to show fuller picture of the return to education. It should be noted that full discounting method has a data availability problem that can be solved by including synthetic work-life earnings variable into analysis.

We estimate the net present value and internal rate of return for each degree, which account for the time and monetary costs of degrees. It is not surprising that evidence from our study suggests that in Lithuania investments into education positively influences individual earnings and the society mainly due to the low costs of education and the high returns. Return to schooling is highest at the bachelor level to a person who lives with their parents and studies in state funded place. Almost similar results (with a lower IRR only) were obtained for the graduate of master/doctoral studies. The highest return to investment in education for Lithuanian economy is for bachelor studies not funded by the state.

However, it is worth bearing in mind that full discounting method and Mincer earning equation indicate almost a similar return to education. In addition, it is important to point out that caution must be taken when observing these results as the models impose a set of limitations.

In summary, the results of this paper could therefore be used extensively towards further improvements in the system of education, in discussions of allocative efficiency and give support the ideas that policymakers can learn much. Specifically, graduates in STEM disciplines are likely to have especially large positive effects on the productivity and wages of other workers because of the important role those disciplines play in local technological innovation (Winters, 2014). The high earnings associated with STEM may relate to a potential mismatch between the supply of current graduates and labour market needs (OECD, 2022). This study also supports efforts by policymakers to increase the stock of STEM graduates in Lithuania; increasing the production of native STEM graduates likely requires improving primary and secondary mathematics and science education, perhaps by devoting more instructional time and more resources to these areas.

In our opinion, this topic will continue to be a fruitful area of research; to develop a fuller picture of economic return to higher education in Lithuania, additional studies will be definitely needed. On a final note, the paper underscores the urgent need to improve data in the field allowing looking more closely not only at the economic return but also at non-economic private and social benefits of education.

## REFERENCES

Acemoglu, D. & Angrist, J. (2000). "How large are Human-Capital Externalities? Evidence from Compulsory Schooling Laws". NBER Macroeconomics Annual, Vol. 15, pp. 9-59. New York: National Bureau of Economic Research.

Altonji, J. G, Humphries, J. E. & Zhong, L. (2022). "The Effects of Advanced Degrees on the Wage Rates, Hours, Earnings and Job Satisfaction of Women and Men". Institute of Labor Economics. IZA DP No. 15010.

Atkinson, R.D. & Mayo, M. (2010). "Refueling the U.S. Innovation Economy: Fresh Approaches to Science, Technology, Engineering and Mathematics (STEM) Education". Information Technology and Innovation Foundation Report. https://itif.org/publications/2010/12/07/refueling-us-innovation-economy-fresh-approaches-stem-education/

Atviri Lietuvos finansai (2018). Retrieved from: https://lietuvosfinansai.lt/

Becker, G. (1964). Human Capital: A Theoretical and Empirical Analysis. New York: Columbia University Press.

Bhutoria, A. (2016). "Economic returns to education in the United Kingdom". Foresight:
Government Office for Science, draft for discussion. https://www.gov.uk/government/
uploads/system/uploads/attachment_data/file/593895/Economic_Returns_To_
Education_-_final.pdf

Card, D. (1999). "The causal effect of education on earnings". Handbook of labor economics.

Comola, M., & De Mello, L. (2010). "Educational attainment and selection into the labour market: The determinants of employment and earnings in Indonesia". Paris School of Economics Working Paper N°2010–06. https://www.researchgate.net/publication/49131303_Educational_attainment_and_selection_into_the_labour_market_The_determinants_of_employment_and_earnings_in_Indonesia

Hall, J. (2000). Investment in education: Private and Public returns. Washington DC: Joint Economic Committee.

Mincer, J. A. (1974). Schooling, Experience, and Earnings. National Bureau of Economic Research.

Moreno, V.G. & Patrinos, H.A. (2020). "Returns to Education in Azerbaijan: Some New Estimates". World Bank. Policy Research Working Paper 9117.

OECD (2022). Education at a Glance 2022: OECD Indicators, OECD Publishing. https://doi.org/10.1787/3197152b-en

O'Donoghue, C. (1999). "Estimating the Rate of Return to Education using Microsimulation". The Economic and Social Review, Vol. 30, No. 3, July, pp. 249-265. https://core.ac.uk/download/pdf/7045397.pdf

Patrinos, H. A. (2016). "Estimating the return to schooling using the Mincer equation". IZA World of Labor. https://wol.iza.org/articles/estimating-return-to-schooling-using-mincer-equation/long

Psacharopoulos, G. & Patrinos, H.A. (2014). "Returns to Investment in Education: A Review and Further Update". World Bank. Policy Research Working Paper 7020.

Psacharopoulos, G. & Patrinos, H.A. (2018). "Returns to Investment in Education: A Decennial Review of the Global Literature". World Bank. Policy Research Working Paper 8402.

Schultz, T. W. (1961). "Investment in human capital". The American economic review, 51(1), 1-17.

Webber, D. (2014). "Is the return to education the same for everybody?" IZA World of Labor. https://wol.iza.org/articles/is-the-return-to-education-the-same-for-everybody/long

Webber, D. A. (2014a). "The lifetime earnings premia of different majors: Correcting for selection based on cognitive, noncognitive, and unobserved factors". Labour economics, 28, 14-23.

Winters, J. V. (2014). "STEM graduates, human capital externalities, and wages in the U.S." Regional Science and Urban Economics vol. 48, issue C, 190–198.

Yubilianto (2020). "Return to education and financial value of investment in higher education in Indonesia". Economic Structures 9, 17. https://doi.org/10.1186/s40008-020-00193-6.

# BUYING DIRECTLY FROM FARMERS: SUSTAINABLE BEHAVIORS AND CONSUMPTION VALUES

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## ABSTRACT

Buying directly from farmers is getting more popular as sustainability becomes more important. The aim of this paper is to investigate the factors that drive consumers to buy directly from farmers. Building on the Consumption Value Theory, this study proposes a conceptual framework suggesting that consumers are driven by a general consumption value when buying directly from farmers while also being influenced by a priory sustainable behavior. A sample of 576 consumers was surveyed via an online consumer panel. Using SEM we show that consumption values effects consumers' attitudes and consequently buying intentions of buying agri-food products directly from farmers. Pro-environmental behavior is more effective in enhancing attitude among consumers with low consumption values and ethnocentrism perception enhances the positive effect of attitude on buying intention. Results emphasize the benefits of applying sustainable value messages to reach consumers with low consumption values to increase direct-to-consumer sales of agri-food.

*Keywords: agri-food produce, sustainability, ethnocentrism, consumption values, Direct-to-consumer, pro-environmental behavior*

## INTRODUCTION

Direct-to-consumer sales (D2C) of small and medium sized enterprises (SMEs) of agri-food produce have evolved in recent years due to technological advances and the impact of COVID-19. Advancements in e-commerce platforms, such as online marketplaces and mobile apps, have made it easier for farmers to directly connect with consumers and facilitate sales (Glaros *et al.*, 2023). Moreover, social media has played a significant role in D2C sales by enabling farmers to showcase and promote their products and engage with consumers in real-time (Zimand-Sheiner *et al.*, 2022). In addition, the COVID-19 pandemic has accelerated the adoption of D2C sales as consumers seek out locally sourced food products and farmers look for alternative distribution channels due to disruptions in traditional supply chains. According to the USDA NASS (2022), D2C sales of agricultural products have increased steadily over the past decade, reaching $2.9 billion in sales in 2020. As a result, D2C sales have become a critical strategy for many small and medium sized agri-

food businesses, using social media as their main platform to communicate with consumers and promote sales.

Recent research on agri-food SMEs' communication strategies found that farmers promoting D2C sales used more egotistic arguments (mainly functional and hedonistic motives) in their social media communication during COVID-19, though consumers better engage with altruistic appeals (Zimand-Sheiner *et al.*, 2022). It appears that consumers may perceive direct to consumer food sales and distribution as sustainable consumption because it supports local economies, reduces transportation-related emissions, and supports small-scale farming (Barska and Wojciechowska-Solis, 2020; Bryła, 2019). Yet, the impact of sustainable values on consumer D2C buying behavior remains an area that has received only scarce scholarly attention (Dhaoui *et al.*, 2020; Kol *et al.*, 2023). Therefore, this study seeks to examine the role of social and environmental motivational values (pro-environmental behavior and ethnocentrism) on consumer behavior toward buying produce directly from farmers. A comprehensive framework is suggested to explain consumer behavior of D2C agri-food buying. This study makes a valuable contribution to the understanding of what motivates consumers D2C behavior and help agriculture SMEs to improve their social media marketing communication.

## THEORETICAL FRAMEWORK

Direct-to-consumer (D2C) sale of agri-food products refers to the practice of farmers selling their produce directly to consumers without the involvement of intermediaries such as wholesalers or retailers. This practice allows farmers to capture a larger portion of the value chain and offers consumers the opportunity to purchase fresh and locally grown produce.

The Expectancy Value Theory (EVT) (Ajzen and Fishbein, 2000; Fishbein and Ajzen, 1975) has been used widely to explain consumer decision-making behaviour and provide a theoretical framework for explaining the possibility of consumers buying produce directly from small and medium sized agri-food businesses.

As a robust theoretical framework for predicting intentions and behaviors, this theory has been successfully applied to food consumption decisions (Ajzen, 2015), practices of environmentally responsible purchasing (Follows and Jobber, 2000) and local organic food buying (Kumar and Smith, 2018; Nardi *et al.*, 2019; Pham *et al.*, 2019).

This theory posits that the consumers' behavior is influenced by the expected value of the said behavior. The value of the behavior is determined by both its specific attributes and its outcomes (Fishbein and Ajzen, 1975). Through these beliefs, attitudes are formed by associating behavior with outcomes (Ajzen and Fishbein, 2000). Based on EVT, Consumers' attitude toward an object is

determined by their evaluated attributes, and then by their intention to behave in a certain way. As a result, behavior is triggered. Moreover, the relationship between the expected value and consumers' intention to behave in a certain way is mediated thorough an attitude formation. Thus, we assume that consumer consumers' intention to buy local food will be mediated by attitude toward local food, which in turn affect the local food's actual buying behaviour. Hence, concerning local food, we hypothesize that:

**H1**: D2C buying intention has a positive direct effect on the D2C actual buying behavior.

**H2a**: Attitude toward D2C has a positive direct effect on D2C buying intention.

**H2b**: D2C buying intention mediates the effect of attitude toward D2C on the D2C actual buying behavior.

Based on the consumption value theory (Sheth *et al.*, 1991), the literature elucidates that what influence and motivate consumers' buying choices are a variety of consumption values, such as functional value (utilitarian attributes), hedonic value (enjoyment attributes) and economic values (economizing attributes). Additionally, a recent study demonstrates that a multidimensional approach to consumer value is preferable, and a general consumption value comprised of varying consumption values has better explanatory power than the values put separately (Kol and Levy, 2022). This may be explained by the synergistic approach, which assumes that the multidimensional construct as a whole is greater than the sum of its parts (Carver, 1989; Vij and Walker, 2016). Thus, we suggest that a general value of D2C local food has an effect on consumers' attitude toward D2C local food buying. Additionally, its effect on consumers' intention to buy local food via D2C will be mediated by their attitude toward local food. Therfore, concerning local food, we hypothesize that:

**H3a**: D2C general value has a positive direct effect on attitude toward D2C.

**H3b**: Attitude toward D2C mediates the effect of D2C general value on the D2C buying intention.

In recent years, consumers have increasingly considered social and environmental values when purchasing goods and services (Lee and Haley, 2022). This shift in consumer behavior can be attributed to a variety of factors, including growing concern about climate change, social justice issues, and a desire for transparency and authenticity from companies (Meijers *et al.*, 2019; Sul and Lee, 2020). The values associated with social and environmental issues are also important to consumers because they provide a sense of purpose and provide a connection to a larger community (Kol *et al.*, 2023). Consumers may perceive D2C sales as a more sustainable option than purchasing food products from large-scale retailers that may rely on long-distance transportation and contribute to environmental degradation (Dhaoui *et al.*, 2020). Thus, consumers who prioritize sustainability values, such as

environmental responsibility and ethnocentricity, are more likely to consider D2C sales as a way to support sustainable and local food systems. Choosing products that align with their values gives consumers a positive sense of morality and a feeling that they are contributing to a greater good and making a positive impact on society and the environment (Trudel, 2019).

Pro-Environmental Behaviour (PEB) refers to purposeful actions taken to minimize the harmful impact on the environment (Dono *et al.*, 2010; Lange and Dewitte, 2019). Earlier studies have shown that consumers who place significance on the environment tend to possess more robust pro-environmental attitudes, ultimately resulting in a greater inclination to buy products that are environmentally friendly (Barber *et al.*, 2012; Follows and Jobber, 2000; Pham *et al.*, 2019). Previous research has demonstrated that buying produce directly from local farmers is considered by consumers as a sustainable, pro-environmental behavior and influence their intention toward this behavior (Aprile *et al.*, 2016; Vieira *et al.*, 2013). As such, we propose that pro-environmental behavior has a moderating effect on the relationship between the D2C general value and attitude and the following relationship to intention to buy directly from farmers. Therefore, we hypothesize:

**H4a:** Pro-environmental behavior moderates the positive effect D2C general value on attitude toward D2C.

**H4b:** Pro-environmental behaviour moderates the positive effect of attitude toward D2C on the D2C buying intention.

The concept of ethnocentrism signifies an individual's inclination towards products that are produced within their own region, with the aim of endorsing local businesses (Bryła, 2019). Previous research demonstrated that consumers with ethnocentric tendencies exhibit a preference for regional and locally sourced food products (Memery *et al.*, 2015), influencing their attitudes toward D2C buying (Aprile *et al.*, 2016; Bianchi and Mortimer, 2015). Moreover, a significant effect of consumer ethnocentrism on actual purchase of local food products was indicated (Fernández-Ferrín *et al.*, 2018). Therefore, we assume that consumers with strong commitment to the community and local identity, will be more inclined toward D2C buying which will impact their behaviour. As such, our hypotheses:

**H5a**: Consumer ethnocentrism moderates the positive effect of D2C general value on attitude toward D2C.

**H5b**: Consumer ethnocentrism moderates the positive effect of attitude toward D2C on the D2C buying intention.

The study's conceptual model and hypotheses are shown in Figure 1.
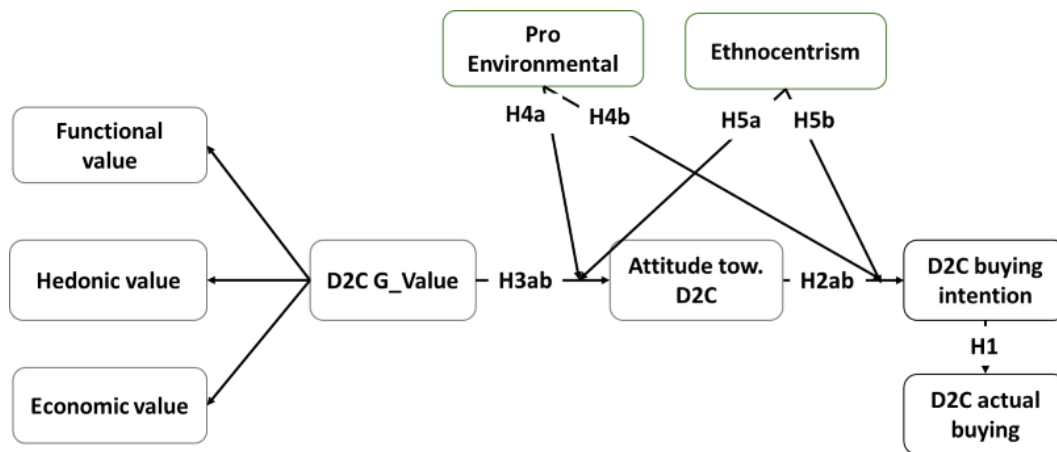
Figure 1. *Conceptual Model and Hypotheses*

## METHODOLOGY

*Sample.* Data were collected through a self-administered questionnaire. Participants were randomly recruited by an online consumer panel survey company in exchange for incentives. The sample included 576 participants, of whom 50% were females and 50% were males. Participants' age ranged from 25-77, with an average age of 47.8 (SD. 13.7). The majority of the sample had post-secondary education (78.1%), and an average income or below (61.1%). Most of them are residing in cities (89.9%) and on have an average of 3.4 persons per family.

*Measurement.* The questionnaire was mostly based on validated scales and formulated to convey the procedure of local food buying (see Table 1). Local food product actual buying behaviour was measured by a single item expressing the level of buying behaviour. Respondents were asked to answer the question: "to what extent have you purchased agricultural produce (such as vegetables, fruits, olives, honey, etc.) directly from farmers in the last six months". The scale was on a seven-point semantic differential scale ranging from "I didn't buy at all" (1) to "a very large extent" (7). The scale for intention to buy local food products was taken from Tran (2021) and the attitude toward buying local food products was taken from Vieira et al. (2013) . Values were treated as a second-order reflective construct (Kol and Levy, 2022), and items for three value factors: functional, hedonic, and economic were taken from Kol and Levy (2022). The scale for pro-environmental behaviour was taken from (Dono et al. (2010), and the scale for ethnocentrism from Bryła (2019).

The B2C buying procedure is digital, therefore an additional variable was added as a control variable, in order to account for the extrinsic effect of customer ability to control the buying channel, tech-savvy (adopted from Onyemah et al., 2010). Respondents were asked to indicate their level of agreement on a seven-point Likert scale, ranging from 1 = strongly disagree, to 7 = strongly agree. Demographic variables were also collected.

| Construct Variables and items | Std. Coef. | AVE | CR | Cronbach's alpha |
|---|---|---|---|---|
| Attitude toward local food | | .83 | .97 | .97 |
| Buying local food directly from farmers instead of regular shops: | | | | |
| Make me feel good. | . 94* | | | |
| Make me feel like doing the morally right thing. | .95* | | | |
| Make me feel pleased. | .97* | | | |
| Make me feel like a better person. | .88* | | | |
| Would be beneficial. | .86* | | | |
| Would be wise. | .80* | | | |
| Make me feel like making a personal contribution to something better. | .93* | | | |
| Local food buying intention | | .84 | .94 | .94 |
| I will make an effort to buy products directly from farmers. | .95* | | | |
| I will purchase products directly from farmers more often. | .94* | | | |
| I intend to purchase products directly from farmers to meet my needs. | .86* | | | |
| Pro-environmental behavior | | .61 | .88 | .85 |
| I make a special effort to buy fruits and vegetables grown without pesticides. | .86* | | | |
| I make a special effort to buy paper and plastic products that that are made from recycled materials. | .83* | | | |
| I avoid buying products from a company that may be harming the environment. | .86* | | | |
| I make a special effort to buy household chemicals such as detergent and cleaning solutions that are environmentally friendly. | .82* | | | |
| I make a special effort to sort garbage at home and put it in the recycling cans. | .48* | | | |
| Ethnocentrism | | .70 | .87 | .90 |
| It is important for me to buy produce from local producers. | .80* | | | |
| I give priority to the produce of local farmers over imports. | .82* | | | |
| I make sure that the produce I buy is from a local corporation. | .89* | | | |
| Functional value | | .70 | .87 | .86 |
| It is safer for me to buy fruits and vegetables directly from farmers. | .78* | | | |
| Buying products directly from farmers is more available to me. | .86* | | | |
| Buying products directly from farmers is more convenient than buying them from stores and supermarkets. | .87* | | | |
| Hedonic value | | .77 | .91 | .91 |
| Fruits and vegetables directly from the farmers are tastier. | .73* | | | |
| It gives me greater pleasure to buy fruits and vegetables directly from farmers. | .94* | | | |
| It's more fun for me to buy fruits and vegetables directly from farmers. | .95* | | | |
| Economic value | | .56 | .79 | .85 |
| Buying products directly from farmers helps me to save money. | .61* | | | |
| Buying products directly from farmers improves my financial situation. | .67* | | | |
| Buying products directly from farmers helps me get greater value for the money I pay. | .93* | | | |
| Tech Savvy | | .64 | .84 | .82 |
| It is convenient for me to use digital / technological tools by myself to order products / services online. | .70* | | | |
| When I want, I can easily order products / services online using digital / technological means. | .93* | | | |
| I can use various digital / technological services even when there is no one to help me. | .76* | | | |

Table 1. *Measures of constructs*

# RESULTS

*Validity and reliability*. Items were first subjected to exploratory factor analyses (EFA). Eight factors were produced, explaining 81.4 percent of the cumulative variance. All items' loadings were above 0.50. Next, all variables' items were subjected to confirmatory factor analysis (CFA) for construct validity and reliability. The results confirm the construct ($\chi2$ (362) = 1001.22, $p < .05$ ($\chi2/df < 3$); Comparative Fit Index (CFI) = .960; Normed Fit Index (NFI) = .939; and Root Mean Square Error of Approximation (RMSEA) = .055). CFA shows that scale items loaded satisfactorily on the relevant latent variables, and mostly all loadings were above 0.5 (except one slightly below 0.5). Convergent validity, discriminant validity, and internal consistency were examined using Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha. In AVE measurements, all constructs were above 0.50. CR measurements were all above 0.97 and Cronbach's alphas above 0.82, displaying acceptable validity and reliability of the measurements. Correlation patterns and Maximum Shared Squared Variance (MSV) are provided in Table 2.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Actual buying | | 0.72** | 0.38** | 0.44** | 0.48** | 0.48** | 0.33** | 0.24** | 0.07 |
| 2. Local food buying intention | 0.51 | 0.84 | 0.56** | 0.53** | 0.58** | 0.56** | 0.49** | 0.37** | 0.11** |
| 3. Attitude toward local food | 0.14 | 0.32 | 0.83 | 0.42** | 0.59** | 0.52** | 0.68** | 0.41** | 0.10* |
| 4. Pro-environmental behavior | 0.19 | 0.28 | 0.18 | 0.61 | 0.54** | 0.44** | 0.35** | 0.28** | 0.02 |
| 5. Ethnocentrism | 0.23 | 0.34 | 0.35 | 0.29 | 0.70 | 0.48** | 0.45** | 0.32** | 0.02 |
| 6. Functional value | 0.23 | 0.31 | 0.27 | 0.19 | 0.23 | 0.70 | 0.57** | 0.46** | 0.05 |
| 7. Hedonic value | 0.11 | 0.24 | 0.46 | 0.12 | 0.20 | 0.33 | 0.77 | 0.47** | 0.09* |
| 8. Economic value | 0.06 | 0.13 | 0.17 | 0.08 | 0.10 | 0.21 | 0.22 | 0.56 | -0.05 |
| 9. Tech Savvy | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.64 |

*Notes*:  N = 576; * < .05, ** < .01; a Correlations are in the upper right side while the MSV are in the lower left side; AVE are in bold diagonal.

Table 2. *Correlations and Maximum Shared Squared Variance (MSV)* a

*Model testing*. To examine the relationships among the constructs and test the hypotheses, a path analysis was conducted using Structural Equation Modeling (SEM). Following Kol and Levy (2022) local food general value was treated as a second-order reflective construct (composed of three values: functional, hedonic, and economic). The overall fit statistics exhibit an acceptable level of fit ($\chi^2$(515) = 1456.58, $p < .05$ ($\chi2/df < 3$); Comparative Fit Index (CFI) = 0.947; Normed Fit Index (NFI) = 0.921; Root Mean Square Error of Approximation (RMSEA) = .056), indicating that the path model is valid. The path model, regression coefficients, and their significance are presented in Figure 2.
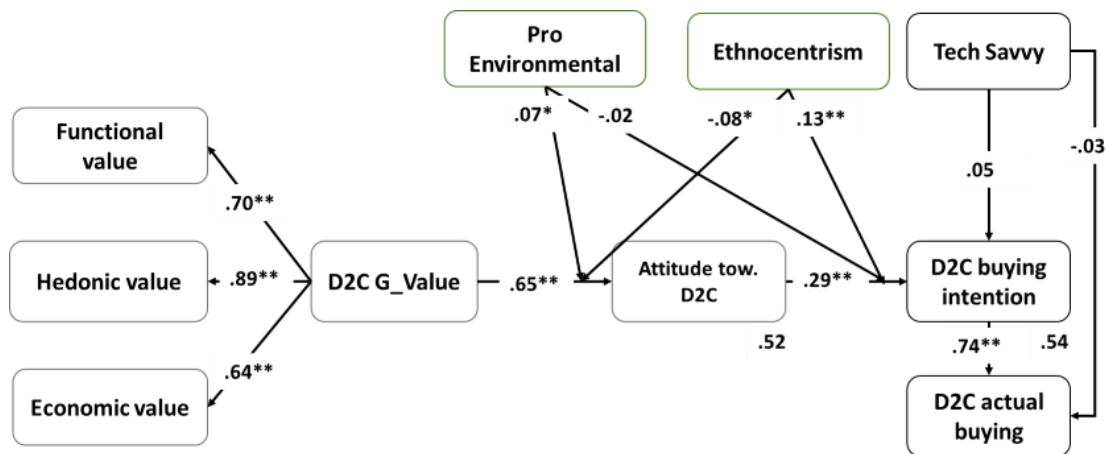
*Note*: Path parameters are standardized parameter estimates; R² is depicted in the right-down corner; *
*p* < .05; ** *p* < .01

Figure 2. *Conceptual Model Testing*

The model depicts the direct and indirect relationships and relevant coefficients (See Table 3). Local food buying intention is directly and positively related to local food actual buying (β = .74, *p* < .01), attitude toward local food is directly and positively related to local food buying intention (β = .29, p < .01) and local food general value has a significant relationship with attitude toward local food (β = .65, p < .01). Therefore, H1, H2a, and H3a are supported.

Additionally, attitude toward local food has an indirect relationship with local food actual buying (β = .21, *p* < .01), through the mediation of local food buying intention (bootstrap with 95% CI: .15-.27; *p* = .01) and local food general value has an indirect relationship with local food buying intention (β = .19, p < .01), through the mediation of attitude toward local food (bootstrap with 95% CI: .13-.25; p = .01). These results support H2b and H3b.

Regression analysis results, further show moderation effects. Pro-environmental behavior significantly moderates (interaction with values) the relationship between general value and attitude (β=.07, p<.05). This indicates that pro-environmental behavior strengthens the positive relationship between general value and attitude (see Figure 3). That is, under high pro-environmental behavior general value is more strongly related to attitude. However, pro-environmental behavior does not moderate (interaction with attitude) the relationship between attitude and buying intention (β=-.02, p>.05). Thus, H4a is supported while H4b is not supported.
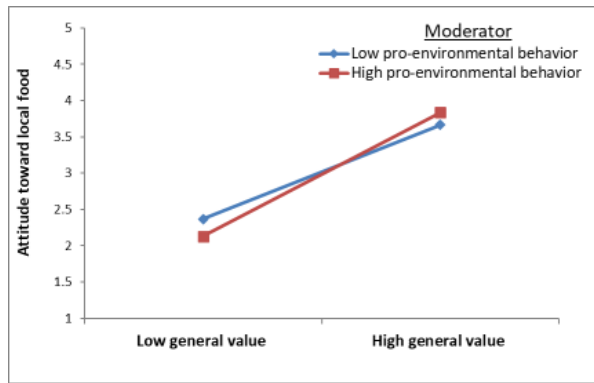
Figure 3. *Moderation Effect of Pro-environmental behavior on the Values-Attitude Relationship*

Ethnocentrism significantly and negatively moderates the relationship between general value and attitude (interaction with general value; β=-.08, p<.05) which indicates that ethnocentrism dampens the positive relationship between general value and attitude (see Figure 4a). That is, under low ethnocentrism general value is more strongly related to attitude. Additionally, ethnocentrism significantly and positively moderates the relationship between attitude and buying intention (interaction with attitude; β=.13, p<.01) which indicates that ethnocentrism strengthens the positive relationship between attitude and buying intention (see Figure 4b). That is, under high ethnocentrism attitude is more strongly related to buying intention. Hence, H5a and H5b are supported.
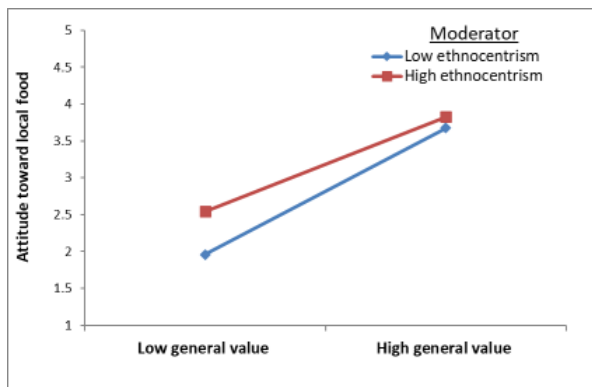




Figure 4a. *Moderation Effect of Ethnocentrism on the Values-Attitude Relationship*
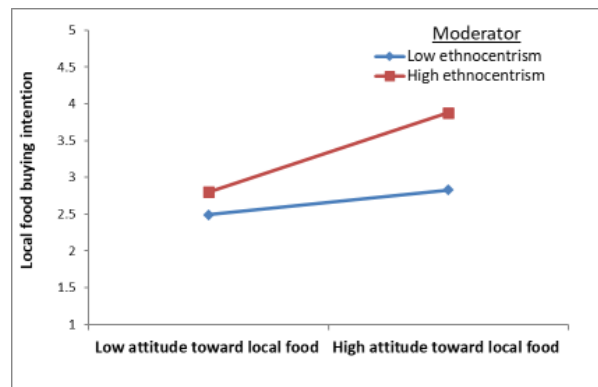
Figure 4b. *Moderation Effect of Ethnocentrism on the Attitude-Buying intention Relationship*

| Relationships | Standardized Effect | | | Regression (direct) | | Weights |
|---|---|---|---|---|---|---|
| | Total | Direct | Indirect | Estimate | C.R. | p |
| Local food buying intention ◎ Actual buying | .74 | .74 | .00 | .85 | 21.34 | <.01 |
| Attitude toward local food ◎ Local food buying intention | .29 | .29 | .00 | .35 | 6.79 | <.01 |
| Attitude toward local food ◎ Actual buying | .21 | .00 | .21 | | | =.01 |
| General value ◎ Attitude toward local food | .65 | .65 | .00 | .75 | 11.31 | <.01 |
| General value ◎ Local food buying intention | .19 | .00 | .19 | | | =.01 |
| Pro-environmental behavior × Attitude ◎ Local | -.02 | -.02 | .00 | -.03 | -.45 | >.05 |

| | | | | | | |
|---|---|---|---|---|---|---|
| food buying intention | | | | | | |
| Pro-environmental behavior × General value ⊚ Attitude | .07 | .07 | .00 | .10 | 2.33 | <.05 |
| Ethnocentrism × Attitude ⊚ Local food buying intention | .13 | .13 | .00 | .19 | 3.52 | <.01 |
| Ethnocentrism × General value ⊚ Attitude | -.08 | -.08 | .00 | -.11 | -2.47 | <.05 |

Table 3. *Results of hypotheses testing*


## DISCUSSION

The current study focuses on consumers' values and beliefs towards buying local agri-food D2C. It proposes a conceptual framework to explain the role consumers' sustainable values have on the effect of their consumption value on consumers' buying process. First, applying to the EVT theory (Ajzen and Fishbein, 2000) the findings support a higher-order construct of a general consumption value (Kol and Levy, 2022). The general consumption value stimulates the hierarchical dynamics process of consumers' attitude towards buying agri-food produce D2C, their buying intention and their actual buying. Second, the findings show an influence of individuals sustainable behaviors on this buying process.

Pro-environmental behavior negatively affects the relationship between general consumption value and attitude. This means that personal consumption values (as lower prices, convenience, and the like) are more effective in motivating positive attitude towards D2C among those who have low pro-environmental behavior. Therefore, a priori altruistic (environmental) behavior makes sense for motivating consumers who don't adhere to egoistic personal consumption values.

Additionally, pro-environmental behavior has no effect on the relationship between attitudes and buying intentions. This finding may be explained by the licensing effect perspective which suggests that as a result of engaging in a moral act (e.g., pro-environmental behavior) individuals are less likely to engage in future moral activity (e.g., buying directly from farmers), as they feel that they have moral credit which frees them from future moral behavior (Meijers *et al.*, 2019). In summary, these findings indicate that pro-environmental behavior, is mostly relevant for shaping attitudes but not for stimulating behavior.

Ethnocentrism also negatively affects the relationship between general consumption value and attitude. This further implies that the influence of social-environmental values is stronger among those consumers who have low consumption values of agri-food D2C. Furthermore, ethnocentrism positively affects the relationship between attitude and buying intention. This indicates that ethnocentrism perception enhances the positive effect of attitude on buying intention. Ethnocentric world view corresponds with buying directly from local farmers, thus it is an effective driver for leading the consumer from the attitude stage to actual behavior (Fernández-Ferrín *et al.*, 2018).

This study makes an important contribution to theory by deepen the understanding of the role of values in shaping consumption behavior. First, the study strengthens and supports the EVT theory that suggests that consumers make purchase decisions based on the expected value of the product or service. Second, the study complements the consumption value theory through integrating social and environmental values into it, creating a more comprehensive understanding of how consumers make choices. Furthermore, the study demonstrates how social and environmental values moderate the impact of consumption values, strengthening or weakening their influence. This finding highlights the importance of considering the broader social and environmental context when analyzing consumption behavior.

A number of recommendations are provided for practitioners. To begin with, in order to improve marketing communication efficiency, it is important for agri-food business to segment customers based on psychographic variables, specifically ethnocentrism and pro-environmental behavior and adapt marketing communication accordingly. In addition, advertising messages must be tailored along consumers' decision-making stages. It is evident that pro-environmental messages based on sustainability values are more effective in the persuasion stage, creating a positive attitude, while ethnocentric messages are more effective in the motivation to behave stage.

## REFERENCES

Ajzen, I. (2015), "Consumer attitudes and behavior: the theory of planned behavior applied to food consumption decisions", Italian Review of Agricultural Economics, Vol. 70 No. 2, pp. 121–138, doi: 10.13128/REA-18003.

Ajzen, I. and Fishbein, M. (2000), "Attitudes and the Attitude-Behavior Relation: Reasoned and Automatic Processes", European Review of Social Psychology, Vol. 11 No. 1, pp. 1–33, doi: 10.1080/14792779943000116.

Aprile, M.C., Caputo, V. and Nayga, R.M. (2016), "Consumers' Preferences and Attitudes Toward Local Food Products", Journal of Food Products Marketing, Vol. 22 No. 1, pp. 19–42, doi: 10.1080/10454446.2014.949990.

Barber, N., Kuo, P.-J., Bishop, M. and Goodman, R. (2012), "Measuring psychographics to assess purchase intention and willingness to pay", Journal of Consumer Marketing, Vol. 29 No. 4, pp. 280–292, doi: 10.1108/07363761211237353.

Barska, A. and Wojciechowska-Solis, J. (2020), "E-Consumers and Local Food Products: A Perspective for Developing Online Shopping for Local Goods in Poland", Sustainability, Vol. 12 No. 12, p. 4958, doi: 10.3390/su12124958.

Bianchi, C. and Mortimer, G. (2015), "Drivers of local food consumption: a comparative study", British Food Journal, Vol. 117 No. 9, pp. 2282–2299, doi: 10.1108/BFJ-03-2015-0111.

Bryła, P. (2019), "Regional Ethnocentrism on the Food Market as a Pattern of Sustainable Consumption", Sustainability, Vol. 11 No. 22, p. 6408, doi: 10.3390/su11226408.

Carver, C.S. (1989), "How should multifaceted personality constructs be tested? Issues illustrated by self-monitoring, attributional style, and hardiness.", Journal of Personality and Social Psychology, Vol. 56 No. 4, pp. 577–585, doi: 10.1037/0022-3514.56.4.577.

Dhaoui, O., Nikolaou, K., Mattas, K. and Baourakis, G. (2020), "Consumers' attitude towards alternative distribution channels of fresh fruits and vegetables in Crete", British Food Journal, Vol. 122 No. 9, pp. 2823–2840, doi: 10.1108/BFJ-05-2019-0342.

Dono, J., Webb, J. and Richardson, B. (2010), "The relationship between environmental activism, pro-environmental behaviour and social identity", Journal of Environmental Psychology, Vol. 30 No. 2, pp. 178–186, doi: 10.1016/j.jenvp.2009.11.006.

Fernández-Ferrín, P., Calvo-Turrientes, A., Bande, B., Artaraz-Miñón, M. and Galán-Ladero, M.M. (2018), "The valuation and purchase of food products that combine local, regional and traditional features: The influence of consumer ethnocentrism", Food Quality and Preference, Vol. 64 No. February 2017, pp. 138–147, doi: 10.1016/j.foodqual.2017.09.015.

Fishbein, M. and Ajzen, I. (1975), Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research, Addison-Wesley Publishing Company, Reading, MA.

Follows, S.B. and Jobber, D. (2000), "Environmentally responsible purchase behaviour: a test of a consumer model", European Journal of Marketing, Vol. 34 No. 5/6, pp. 723–746, doi: 10.1108/03090560010322009.

Glaros, A., Thomas, D., Nost, E., Nelson, E. and Schumilas, T. (2023), "Digital technologies in local agri-food systems: Opportunities for a more interoperable digital farmgate sector", Frontiers in Sustainability, Vol. 4, pp. 1–14, doi: 10.3389/frsus.2023.1073873.

Kol, O. and Levy, S. (2022), "The Whole Is More than Its Parts: A Multidimensional Construct of Values in Consumer Information Search Behavior on SNS", Journal of Theoretical and Applied Electronic Commerce Research, Vol. 17 No. 4, pp. 1685–1695, doi: 10.3390/jtaer17040085.

Kol, O., Zimand-Sheiner, D. and Levy, S. (2023), "A (Local) Apple a Day: Pandemic-Induced Changes in Local Food Buying, a Generational Cohort Perspective", European J. International Management, Vol. 19.

Kumar, A. and Smith, S. (2018), "Understanding Local Food Consumers: Theory of Planned Behavior and Segmentation Approach", Journal of Food Products Marketing, Vol. 24 No. 2, pp. 196–215, doi: 10.1080/10454446.2017.1266553.

Lange, F. and Dewitte, S. (2019), "Measuring pro-environmental behavior: Review and recommendations", Journal of Environmental Psychology, Academic Press, Vol. 63, pp. 92–100, doi: 10.1016/j.jenvp.2019.04.009.

Lee, J. and Haley, E. (2022), "Green consumer segmentation: consumer motivations for purchasing pro-environmental products", International Journal of Advertising, Vol. 41 No. 8, pp. 1477–1501, doi: 10.1080/02650487.2022.2038431.

Meijers, M.H.C., Noordewier, M.K., Verlegh, P.W.J., Willems, W. and Smit, E.G. (2019), "Paradoxical side effects of green advertising: how purchasing green products may instigate licensing effects for consumers with a weak environmental identity", International Journal of Advertising, Vol. 38 No. 8, pp. 1202–1223, doi: 10.1080/02650487.2019.1607450.

Memery, J., Angell, R., Megicks, P. and Lindgreen, A. (2015), "Unpicking motives to purchase locally-produced food: analysis of direct and moderation effects", European Journal of Marketing, Vol. 49 No. 7/8, pp. 1207–1233, doi: 10.1108/EJM-02-2014-0075.

Nardi, V.A.M., Jardim, W.C., Ladeira, W. and Santini, F. (2019), "Predicting food choice: a meta-analysis based on the theory of planned behavior", British Food Journal, Vol. 121 No. 10, pp. 2250–2264, doi: 10.1108/BFJ-08-2018-0504.

Onyemah, V., Swain, S.D. and Hanna, R. (2010), "A Social Learning Perspective on Sales Technology Usage: Preliminary Evidence from an Emerging Economy", Journal of Personal Selling & Sales Management, Vol. 30 No. 2, pp. 131–142, doi: 10.2753/PSS0885-3134300204.

Pham, T.H., Nguyen, T.N., Phan, T.T.H. and Nguyen, N.T. (2019), "Evaluating the purchase behaviour of organic food by young consumers in an emerging market economy", Journal of Strategic Marketing, Vol. 27 No. 6, pp. 540–556, doi: 10.1080/0965254X.2018.1447984.

Sheth, J.N., Newman, B.I. and Gross, B.L. (1991), "Why we buy what we buy: A theory of consumption values", Journal of Business Research, Vol. 22 No. 2, pp. 159–170, doi: 10.1016/0148-2963(91)90050-8.

Sul, W. and Lee, Y. (2020), "Effects of corporate social responsibility for environmental, social, and governance sectors on firm value: a comparison between consumer and industrial goods companies", European Journal of International Management, Vol. 14 No. 5, pp. 866–890.

Tran, L.T.T. (2021), "Managing the effectiveness of e-commerce platforms in a pandemic", Journal of Retailing and Consumer Services, Vol. 58, p. 102287, doi: 10.1016/j.jretconser.2020.102287.

Trudel, R. (2019), "Sustainable consumer behavior", Consumer Psychology Review, Wiley, pp. 85–96, doi: 10.1002/arcp.1045.

USDA NASS. (2022), Direct Farm Sales of Food - Results from the 2020 Local Food Marketing Practices Survey.

Vieira, L.M., Dutra De Barcellos, M., Hoppe, A. and Bitencourt da Silva, S. (2013), "An analysis of value in an organic food supply chain", British Food Journal, Vol. 115 No. 10, pp. 1454–1472, doi: 10.1108/BFJ-06-2011-0160.

Vij, A. and Walker, J.L. (2016), "How, when and why integrated choice and latent variable models are latently useful", Transportation Research Part B: Methodological, Vol. 90, pp. 192–217, doi: 10.1016/j.trb.2016.04.021.

Zimand-Sheiner, D., Kol, O. and Levy, S. (2022), "Help me if you can: the advantage of farmers' altruistic message appeal in generating engagement with social media posts during COVID-19", Electronic Commerce Research, doi: 10.1007/s10660-022-09637-6.

# SYSTEMATIC LITERATURE REVIEW OF FOREST MAPPING TECHNOLOGIES: TRENDS AND FUTURE DIRECTIONS

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## ABSTRACT

Advancements in forest mapping technologies have been driven by the increasing demand for accurate and up-to-date forest information, as forests are a crucial component of the environment providing essential ecosystem services. Unfortunately, deforestation, forest fires, and unsustainable logging practices put forests at risk. Forest mapping technologies have been developed to monitor and manage forest resources, providing crucial information on forest cover, biodiversity, and health to support decision-making on forest conservation and management efforts. Using these technologies, forest ecosystems can be protected and sustained by identifying areas that need protection, and monitoring changes. This paper presents a four-step systematic literature review of forest mapping technologies to identify trends and future directions by analyzing 25 relevant articles published in the last five years. The findings highlight the diverse applications of forest mapping technologies, extending beyond resource mapping to encompass the monitoring of forest disturbances and their impacts on ecosystem services. Additionally, the paper addresses critical challenges such as the need for standardized protocols and data interoperability. Based on these insights, the authors propose future research directions that underscore the potential synergies between forest mapping and business aspects. This includes the development of accurate forest mapping technologies, as well as the integration of forest mapping data with other sources of environmental data, enabling a comprehensive understanding of forest ecosystems and unlocking valuable insights for sustainable business decision-making. While this paper presents a concise analysis of 10 papers in detail, a more extensive review will be conducted and published in a scholarly journal.

*Keywords: Forest mapping, Systematic literature review, Sustainable management, Forest conservation, Forest map technologies.*

## INTRODUCTION

Forests are a vital component of the environment, providing a range of ecosystem services that include biodiversity conservation, carbon sequestration, and soil and water conservation (Qin et al.,

2023). Despite their importance, forests around the world face numerous threats, including deforestation, forest fires, and unsustainable logging practices (Papadopoulos et al., 2010). The purpose of this study is to investigate the current state of forest mapping technologies and their potential for improving forest conservation and management practices. By conducting a systematic literature review, this research aims to identify key applications, advancements, challenges, and future directions in the field of forest mapping. Ultimately, this study seeks to enhance our understanding of how innovative technologies can contribute to the sustainable stewardship of forest ecosystems.

The connection between environmental issues and sustainability is of paramount importance, particularly when considering the significance of forests as vital ecosystems and their crucial role in maintaining ecological balance and providing essential ecosystem services (Moadab et al., 2023). The loss of forests not only reduces the provision of critical ecosystem services but also has significant implications for global climate change (Peattie et al., 2009). To effectively manage and conserve forests, accurate and up-to-date information on their extent, structure, and condition is essential (Senf et al., 2017). Over the years, technological advancements, including the use of drones, have significantly improved the effectiveness of monitoring and managing forest resources (Moadab et al., 2022). These developments provide essential information on forest cover, biodiversity, and health, enabling informed decision-making in forest management practices. (Zheng et al., 2022).

Forest mapping technologies have been developed to address these challenges and provide crucial information on forest cover, biodiversity, and health for informed decision-making on forest conservation and management efforts (Lechner et al., 2020). Satellite imagery and LiDAR, among other remote sensing technologies, are utilized for forest mapping to identify conservation areas, monitor changes, and inform long-term management decisions for forest health and productivity. (Sofia et al., 2022). However, despite these advancements, there are still, such as the need for standardized protocols and the lack of data interoperability (Shams et al., 2022). In addition, there are issues related to the accessibility and quality of data, as well as the need for more user-friendly and cost-effective technologies (Tiemann and Ring, 2018). These challenges call for continued research and development in forest mapping technologies to improve their accuracy, efficiency, and accessibility for better forest conservation and management.

The systematic literature review aims to address these challenges by examining the current state of forest mapping technologies, identifying trends and gaps in research, and outlining future directions for their development and application in forest conservation and management. The research questions that the paper aims to answer are:

1) What is the current state of forest mapping technologies in terms of their applications and advancements?

2) What are the existing research gaps and future directions for the development and application of forest mapping technologies in forest conservation and management?

## METHODOLOGY

Systematic Literature Review (SLR) is a crucial methodology for conducting comprehensive and unbiased research in various fields (Yaghmaie and Vanhaverbeke, 2020). In the context of forest mapping technologies, SLR is a valuable tool for identifying current trends, gaps, and future directions in research. The four-step SLR proposed by (Mayring, 2003) is a widely accepted protocol-based method that ensures the inclusion of all relevant material and promotes transparency in appropriate reviews. Figure (1) outlined the four distinct steps in detail.



| Step 1: Material collection | Literature review includes collecting, defining, delimiting, and screening relevant materials based on inclusion and exclusion criteria |
| Step 2: Descriptive analysis | Analyzing and evaluating the formal aspects of the material, along with comprehending the underlying theoretical concepts |
| Step 3: Category selection | To identify the current trends, the material is classified into analytical categories |
| Step 4: Material evaluation | Scrutinizing the materials and pinpointing the significant insights |

Step 1: The initial step involves the retrieval of articles from electronic bibliographic databases, namely Scopus and Web of Science, which are widely recognized and commonly used (Afra et al., 2022). Table (1) presents the finalized set of keywords selected based on the pilot search to ensure the most relevant and appropriate terms are used for the literature review.

| General keywords | Research specific keywords | Area | Main keywords |
|---|---|---|---|
| Forest map | Forest Mapping | | Forest Mapping |
| Forest history | Forest management | | Forest management |
| Forest resources | Forest companies | Forest related keywords | |
| Selective cutting | | | |
| Forest companies | | | |
| Artificial intelligence | Airborne laser scanning | Technology related keywords | Forest Technologies |
| Drone images | Remote sensing | | Radar monitoring |
| Satellite images | Radar monitoring | | |
| Smartphones | | | |
| Airborne systems | | | |

Table 1. *Keywords for the pilot search and literature review*

To ensure the literature review is focused on the specific topic of the study, the authors employed a set of final keywords such as "forest mapping," "forest technologies," "forest management," and "radar monitoring" to search for relevant articles in their title, abstract, and keywords. Using Boolean logic with "OR" and "AND" connectors, the final keywords were transformed into search strings, as shown in Table (1). Selected databases were used to search for studies published within the relevant domain between 2015 and 2023. The Scopus database yielded 654 publications, while 487 articles were retrieved through a Web of Science document search. To narrow down the research scope and identify the most relevant articles, inclusion and exclusion criteria were defined, as presented in Table (2).

| Inclusion criteria | Exclusion criteria |
|---|---|
| English articles published until April 2023 | Other languages than English |
| Articles focusing on forest mapping | Studies focus on technical aspects of forest technologies |
| Articles focus on business aspects of forest management | Articles that do not present original research, such as editorials, commentaries, and letters |
| Articles focus on forest technologies | Articles that do not provide sufficient information to evaluate their relevance to the research questions |
| Peer-reviewed journal articles | All types of thesis, conference paper, notes, and book chapters |

Table 2. Including and excluding criteria for literature review selection

After removing duplicate articles across databases, a total of 427 articles were screened based on various inclusion and exclusion criteria, resulting in a dataset of 220 articles. The authors then assessed the titles, abstracts, and keywords of each article to determine their relevance to the study's conceptual boundary. Based on this review, 155 studies were excluded for being discursive with respect to the study's scope.

Next, the authors analyzed the full texts of the remaining 65 articles to verify their admissibility for inclusion in the review. After consensus was reached, 40 articles were removed as they did not relate to the focus of the SLR. Finally, the authors were left with a set of 25 articles that met the inclusion criteria and were included in the review.

Step 2: During step two of the systematic literature review, the collected articles are subjected to a classification process based on several factors. These factors include the geographical area of focus, industry, journals of publication, and year of publication. This classification process provides a comprehensive background that aids in further theoretical analysis of the articles. By organizing the articles based on these factors, the review can identify patterns and trends in the literature, which can provide valuable insights for the research.

Step 3: In the third step of the systematic literature review process, the collected material is analyzed in three distinct categories to define structural dimensions and related analytic categories. These categories typically include the methodological approach, theoretical framework, and thematic content of the studies. The authors carefully examine each article to identify its methodological approaches, such as the use of case studies or quantitative analysis, and its theoretical frameworks, such as a systems approach or a governance perspective. Additionally, the thematic content of each study is analyzed to determine its relevance to the research question and how it contributes to the overall understanding of the topic. This comprehensive analysis of the collected material helps to establish a solid foundation for further theoretical analysis in the fourth step of the systematic literature review process.

Step 4: In the fourth and final step of the systematic literature review, the considered dimensions and related analytic categories are applied to the collected material, and a comprehensive evaluation is carried out. This evaluation enables the identification of trends, patterns, and research gaps in the literature, which are crucial for drawing meaningful conclusions and providing actionable insights. The findings, insights, and implications generated from this evaluation provide valuable guidance for future research directions and practical applications. Additionally, the limitations of the current study are also discussed, along with recommendations for future research in the area. Overall, this step

helps to ensure that the review is not only comprehensive but also relevant and informative, with the potential to advance knowledge and practice in the field.

## DESCRIPTIVE ANALYSIS

This section presents a synthesis analysis of 25 final articles on forest mapping technologies, which were reviewed in four systematic steps to identify trends and future directions in this field. The descriptive analysis is performed based on the publication date, publication journal, subject area, and methodology to comprehend how forest mapping technologies are highlighted as an important concept over time. The findings suggest that forest mapping technologies are being used not only for mapping forest resources but also for monitoring forest disturbances and their impacts on ecosystem services. Additionally, the final structure is analyzed in detail for 10 papers, which provide a comprehensive understanding of the current state of forest mapping technologies. The reviewed literature shows that forest mapping technologies have been developed to monitor and manage forest resources, providing crucial information on forest cover, biodiversity, and health to support decision-making on forest conservation and management efforts. Furthermore, the paper highlights the current challenges in forest mapping, including the need for standardized protocols and the lack of data interoperability. By shedding light on the advancements, trends, and challenges in forest mapping, this paper contributes to a deeper understanding of the field and highlights the potential avenues for future research and development. Addressing the current challenges and advancing standardized protocols can foster greater interoperability, accuracy, and efficiency in forest mapping technologies, ultimately enabling more effective and sustainable forest management practices.

Based on the analysis of the reviewed articles, a trend over time has been identified and is presented in Figure (2), which shows the distribution of the articles by year and provides insight into how research in this field has evolved over time.
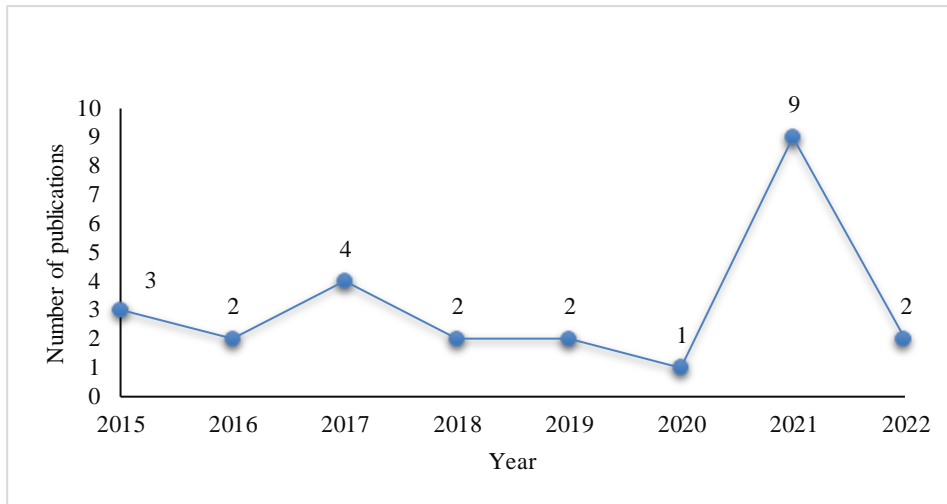
Figure 2. Year-wise trend of the published articles

The figure shows a year-wise trend of published articles related to forest mapping and technologies from 2015 to 2022. The number of publications during the period was relatively stable and not substantial, whereas there was a noticeable increase in 2021. This can be attributed to the growing recognition of the importance of forest mapping and the advancements in relevant technologies. Despite the relatively lower number of publications in 2022, the presence of ongoing research and emerging findings highlights the high potential of this field for future exploration, innovation, and impactful contributions. The trend suggests that forest mapping and related technologies have gained increasing attention in recent years, which underscores the need for continued research and development.
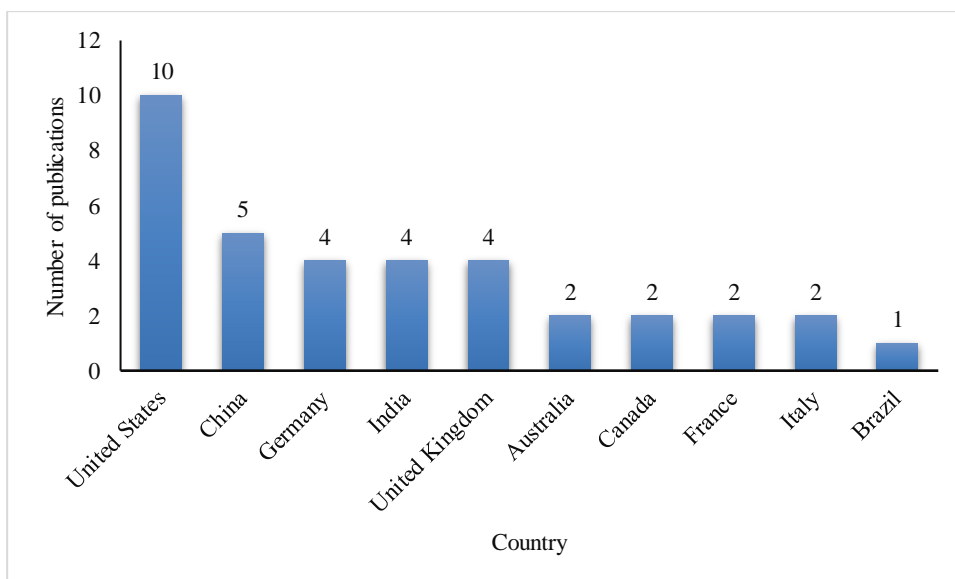


Figure 3. Country wise trend of publications

Figure (3) illustrates the top 10 countries that have published the most articles in the field of forest mapping and technologies. The United States and China have shown to be the leading countries in this field with the highest number of publications. However, other countries such as Canada, Brazil, and Germany have also demonstrated their interest and potential for conducting research in this area. These findings suggest that there is a need for more research and collaboration in the field of forest mapping and technologies, especially in countries with untapped potential. Figure (4) presents the subject area classification of the reviewed documents, represented as a percentage.
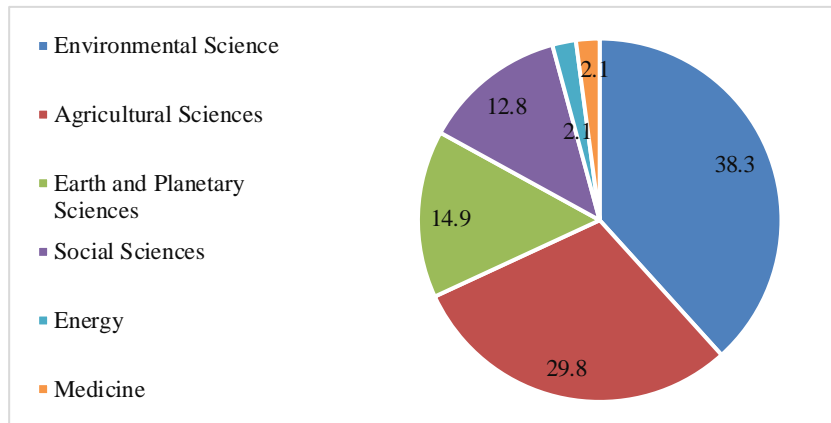


Figure 4. Subject area classification of reviewed documents

The distribution of publications across different subject areas shows that Environmental Science and Agricultural Sciences account for the majority at 38.3% and 29.8%, respectively. The significant presence of publications in these subject areas underscores the importance of collaboration and knowledge exchange between researchers in environmental sciences and agricultural sciences. Such interdisciplinary cooperation holds great potential for advancing forest mapping research and effectively addressing pressing environmental challenges, fostering a comprehensive and holistic approach to sustainable forest management and conservation.

## MATERIAL EVALUATION

The literature review focuses on the topic of forest mapping and technologies from three different perspectives: Remote Sensing and Forest Cover Monitoring, Land Use Allocation and Ecosystem Services, and Participatory Mapping and Forest Conservation. By examining articles in each of these categories, we aimed to cover the broad range of topics related to forest mapping, including the use of advanced technologies, the optimization of land-use allocation, and the conservation of natural forests and their ecosystems. By taking this comprehensive approach, we were able to identify key research

findings and developments in each of these categories, and to analyze their potential implications for the future of forest mapping and the business applications of these technologies

*Remote Sensing and Forest Cover Monitoring*

In the field of Remote Sensing and Forest Cover Monitoring, several studies have recently been conducted to improve the accuracy of forest cover mapping and monitoring. In this literature review, we discuss three such studies that propose novel methods for overcoming the limitations of traditional approaches. Luo et al. (2022) presents a new algorithm based on machine learning technology to improve the accuracy of binary snow cover mapping in forests. The article reviews the limitations of the widely used Normalized Difference Snow Index approach in capturing snow cover in forests due to the obstruction effects of the forest canopy. The article discusses the limitations of using canopy cover threshold values for forest cover monitoring and proposes the use of remotely sensed tree canopy cover datasets to complement categorical forest/non-forest maps. The authors suggest that incorporating TCC-based indicators can improve monitoring of not only deforestation, but also forest degradation and forest cover enhancement, which are important for sustainable development goals. Estoque et al. (2021) highlights the limitations of categorical forest/non-forest maps and proposes using remotely sensed tree canopy cover datasets to complement them for more accurate forest cover monitoring. The authors suggest that TCC-based indicators can help in monitoring deforestation, forest degradation, and forest cover enhancement, which are crucial for global forest cover monitoring initiative. Kamoske et al. (2021) highlights the use of lidar and hyperspectral data to assess the impact of forest structure on spatial patterns of foliar nitrogen concentration and leaf mass per area, which are essential traits for photosynthetic capacity in terrestrial ecosystems. The research shows that the total canopy nitrogen variation is relatively homogeneous across the landscape, whereas leaf functional diversity and canopy structural diversity exhibit distinct dendritic patterns related to the spatial distribution of plant functional types. These studies suggest the potential of incorporating remote sensing technologies and machine learning algorithms to complement traditional forest cover monitoring approaches, highlighting the importance of accurate forest cover monitoring for sustainable development goals.

*Land Use Allocation and Ecosystem Services*

Land use allocation and ecosystem services are crucial factors in sustainable land management. In this literature review, we discuss recent studies that analyze advanced technologies such as Invests, LiDAR, and remote sensing data to optimize land-use allocation, enhance ecosystem services, and improve habitat mapping accuracy for conservation and restoration planning in managed forest landscapes. Jafarzadeh et al. (2021) analyzes the current land-use allocation systems in the Zagros area

of western Iran, using advanced technologies such as InVEST, MPSIAC, and a Land-Use Conflict Identification Strategy model to model water production, carbon budget, and ecosystem services. The results show the potential of these technologies for optimizing land-use allocation to enhance multiple ecosystem services in a sustainable manner. Shanley et al. (2021) presents a study that tests the application of LiDAR technology to build a winter habitat model for Sitka black-tailed deer in the Tongass National Forest. The study shows that LiDAR-based models can greatly enhance the accuracy and resolution of habitat maps used for conservation and restoration planning in large managed forest landscapes. Chen et al. (2017) evaluates the uncertainties of forest carbon estimation in response to the combined impacts of remote sensing data resolution and neighborhood spatial patterns in Charlotte, North Carolina, providing insights into the challenges and opportunities for using high-resolution remote sensing for carbon mapping in urban areas. The findings highlight the importance of considering both data resolution and landscape characteristics in urban forest carbon mapping, which can inform sustainable forest management and urban planning.

*Participatory Mapping and Forest Conservation*

Zafar et al. (2021) demonstrates the use of participatory mapping, GIS, and remote sensing to produce forest cover and land use maps for the Chunati forest cover in Bangladesh, which can aid policy makers in monitoring and implementing land use policy and forest conservation. Vijayan et al. (2021) analyzes natural forest conversions and their impacts on tribal communities in the southern Western Ghats, a globally significant biodiversity hotspot. The findings show that the area of protected forest decreased by 53% from 1978 to 2015, resulting in a decline in the collection of non-timber forest products by the tribal communities and increased dependency on forest plantations labor for their livelihood. This highlights the crucial need for preserving natural forests not only for biodiversity conservation but also to protect the socio-economic and cultural traits of indigenous populations. Arasumani et al. (2021) article describes the use of satellite images to identify suitable areas for grassland restoration and conservation in the Western Ghats, India, which is a technique used in remote sensing and forest cover monitoring. Haidir et al. (2021) aimed to map core habitat patches and dispersal corridors for three threatened species in a tropical rainforest landscape in Sumatra, and to model future forest loss and fragmentation. The authors used camera trap data and occupancy modelling to develop habitat use maps and predict deforestation risk and found moderate overlap between core areas and corridors across the three species. The study provides important guidance for identifying priority areas in need of protection and incorporating wildlife conservation goals in infrastructure development planning.

## CONCLUSION AND FUTURE DIRECTION

Remote sensing and advanced technologies play a crucial role in forest cover monitoring, land use allocation, and ecosystem services analysis. The studies discussed in this literature review demonstrate the potential of remote sensing technologies and machine learning algorithms to complement traditional forest cover monitoring approaches. The use of LiDAR technology can greatly enhance the accuracy and resolution of habitat maps used for conservation and restoration planning in large managed forest landscapes. Participatory mapping and GIS can aid policymakers in monitoring and implementing land use policy and forest conservation. It is evident that accurate forest cover monitoring and sustainable land management are crucial for achieving sustainable development goals. However, there is still a need for further research in this area to fully realize the potential of remote sensing technologies in business applications. For instance, accurate and up-to-date forest maps can play a crucial role in enabling sustainable forest management practices, such as selective logging and responsible sourcing of forest products. Moreover, forest mapping can also aid in identifying potential areas for afforestation and reforestation, which can help companies meet their carbon reduction targets and enhance their sustainability credentials.

Moving forward, future research endeavors should prioritize the development of more efficient and cost-effective remote sensing technologies for forest mapping and monitoring. Additionally, forest maps will be more accurate and reliable if they are integrated with other data sources, such as ground-based surveys and citizen science initiatives. These advancements will empower businesses to make informed decisions and align their practices with sustainability goals while contributing to the global efforts of achieving the United Nations' Sustainable Development Goals.

In terms of implications, the findings of this study highlight the potential for businesses to leverage forest mapping technologies to improve their environmental sustainability performance. It is possible to keep track of forest activities, ensure responsible sourcing, and contribute to broader conservation and sustainability objectives by utilizing accurate and up-to-date forest maps. Furthermore, the integration of remote sensing technologies with business processes can enhance the efficiency of operations, support informed decision-making, and foster a more sustainable approach to resource management. These implications underscore the need for businesses to embrace and invest in the application of forest mapping technologies for both environmental stewardship and economic viability.

## REFERENCES

AFRA, A. P., KHEIRKHAH, A. & AHADI, H. 2022. Systematic literature review of integrated project scheduling and material ordering problem: Formulations and solution methods. Computers & Industrial Engineering, 108711.

ARASUMANI, M., BUNYAN, M. & ROBIN, V. 2021. Opportunities and challenges in using remote sensing for invasive tree species management, and in the identification of restoration sites in tropical montane grasslands. Journal of Environmental Management, 280, 111759.

CHEN, G., OZELKAN, E., SINGH, K. K., ZHOU, J., BROWN, M. R. & MEENTEMEYER, R. K. 2017. Uncertainties in mapping forest carbon in urban ecosystems. Journal of Environmental Management, 187, 229-238.

ESTOQUE, R. C., JOHNSON, B. A., GAO, Y., DASGUPTA, R., OOBA, M., TOGAWA, T., HIJIOKA, Y., MURAYAMA, Y., GAVINA, L. D. & LASCO, R. D. 2021. Remotely sensed tree canopy cover-based indicators for monitoring global sustainability and environmental initiatives. Environmental Research Letters, 16, 044047.

HAIDIR, I. A., KASZTA, Ż., SOUSA, L. L., LUBIS, M. I., MACDONALD, D. W. & LINKIE, M. 2021. Felids, forest and farmland: identifying high priority conservation areas in Sumatra. Landscape Ecology, 36, 475-495.

JAFARZADEH, A. A., MAHDAVI, A., SHAMSI, S. R. F. & YOUSEFPOUR, R. 2021. Assessing synergies and trade-offs between ecosystem services in forest landscape management. Land Use Policy, 111, 105741.

KAMOSKE, A. G., DAHLIN, K. M., SERBIN, S. P. & STARK, S. C. 2021. Leaf traits and canopy structure together explain canopy functional diversity: an airborne remote sensing approach. Ecological Applications, 31, e02230.

LECHNER, A. M., FOODY, G. M. & BOYD, D. S. 2020. Applications in remote sensing to forest ecology and management. One Earth, 2, 405-412.

LUO, J., DONG, C., LIN, K., CHEN, X., ZHAO, L. & MENZEL, L. 2022. Mapping snow cover in forests using optical remote sensing, machine learning and time-lapse photography. Remote Sensing of Environment, 275, 113017.

MAYRING, P. 2003. Qualitative Inhaltanalyse Grundlagenund Techniken (Qualitative Content Analysis), Beltz. Weinheim.

MOADAB, A., FARAJZADEH, F. & FATAHI VALILAI, O. 2022. Drone routing problem model for last-mile delivery using the public transportation capacity as moving charging stations. Scientific Reports, 12, 1-16.

MOADAB, A., KORDI, G., PAYDAR, M. M., DIVSALAR, A. & HAJIAGHAEI-KESHTELI, M. 2023. Designing a sustainable-resilient-responsive supply chain network considering uncertainty in the COVID-19 era. Expert Systems with Applications, 227, 120334.

PAPADOPOULOS, I., KARAGOUNI, G., TRIGKAS, M. & PLATOGIANNI, E. 2010. Green marketing: The case of Greece in certified and sustainably managed timber products. EuroMed Journal of Business.

PEATTIE, K., PEATTIE, S. & PONTING, C. 2009. Climate change: a social and commercial marketing communications challenge. EuroMed Journal of Business.

QIN, Y., XIAO, X., LIU, F., DE SA E SILVA, F., SHIMABUKURO, Y., ARAI, E. & FEARNSIDE, P. M. 2023. Forest conservation in Indigenous territories and protected areas in the Brazilian Amazon. Nature Sustainability, 1-11.

SENF, C., SEIDL, R. & HOSTERT, P. 2017. Remote sensing of forest insect disturbances: Current state and future directions. International journal of applied earth observation and geoinformation, 60, 49-60.

SHAMS, R., GALATI, A., VUKOVIC, D. & FESTA, G. 2022. Stakeholder causal scope analysis for strategic management of big data: implications for the European-Mediterranean region. EuroMed Journal of Business, 17, 289-294.

SHANLEY, C. S., EACKER, D. R., REYNOLDS, C. P., BENNETSEN, B. M. & GILBERT, S. L. 2021. Using LiDAR and Random Forest to improve deer habitat models in a managed forest landscape. Forest Ecology and Management, 499, 119580.

SOFIA, S., MAETZKE, F. G., CRESCIMANNO, M., COTICCHIO, A., LA MELA VECA, D. S. & GALATI, A. 2022. The efficiency of LiDAR HMLS scanning in monitoring forest structure parameters: implications for sustainable forest management. EuroMed Journal of Business, 17, 350-373.

TIEMANN, A. & RING, I. 2018. Challenges and opportunities of aligning forest function mapping and the ecosystem service concept in Germany. Forests, 9, 691.

VIJAYAN, D., KAECHELE, H., GIRINDRAN, R., CHATTOPADHYAY, S., LUKAS, M. C. & ARSHAD, M. 2021. Tropical forest conversion and its impact on indigenous communities Mapping forest loss and shrinking gathering grounds in the Western Ghats, India. Land Use Policy, 102, 105133.

YAGHMAIE, P. & VANHAVERBEKE, W. 2020. Identifying and describing constituents of innovation ecosystems: A systematic review of the literature. EuroMed Journal of Business, 15, 283-314.

ZAFAR, T. B., DING, W., DIN, S. U., KHAN, G. M., HAO, C. & HE, L. 2021. Forest cover and land use map of the Chunati Wildlife Sanctuary based on participatory mapping and satellite images: Insight into Chunati beat. Land Use Policy, 103, 105193.

ZHENG, Z., ZENG, Y., SCHUMAN, M. C., JIANG, H., SCHMID, B., SCHAEPMAN, M. E. & MORSDORF, F. 2022. Individual tree-based vs pixel-based approaches to mapping forest functional traits and diversity by remote sensing. International Journal of Applied Earth Observation and Geoinformation, 114, 103074.

# THE CURRENT STATE OF CENTRAL BANK DIGITAL CURRENCIES: A BIBLIOMETRIC ANALYSIS

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## ABSTRACT

We have conducted a systematic literature review using bibliometric technic to evaluate the current streams and the future research topics of the central bank digital currencies. Since the introduction of Bitcoin by Nakamoto (2008) the blockchain technologies challenge the financial system that we have today and tend to recreate payment system or even cash as we use today. In this paper we investigate the evolution of scientific thought and different directions of the discourse of central bank digital currencies. We have conducted a descriptive or performance analysis and an evaluating bibliometric review for timeline from 2018 up to today. We use data from Scopus and Web of Science databases and the VOSviewer software. We have investigated 467 articles in economics and have identified main research streams so far. We have found that research curiosity lies in the topics of financial policy and stability, privacy, banking, financial literacy, liquidity, cash and digital economy. Scholars have approached the research curiosity from five main directions that are monetary policy, investments possibilities in financial market, market opportunities based on data, design of central bank digital currencies and cryptocurrency research. Our bibliometric analysis is not limited to research topics but also includes analysis of overall scientific discussion in text of the articles. Our findings highlight new wider range of research streams in the topic of central bank digital currencies that scholars and practitioners could further use shaping the discourse.

*Keywords: blockchain, fintech, cryptocurrency, central bank digital currency, cash, financial stability, monetary policy, investments, financial literacy.*

## INTRODUCTION

The purpose of our research is to define the main streams of the discourse of research on central bank digital currencies (CBDC) and present different angles that scholars use to approach the spread of scientific thought in the field. We have reviewed the main themes related to CBDC and investigated the main findings in economics Our analysis will help scholars, practitioners and institutions to choose different approaches in CBDC research field or in possible CBDC implementation and adoption around

the world. Since 2018 the topic of CBDC has caught the attention of governments, scholars and central banks trying to benefit the society.

The discussion on CBDC started with Masciandaro (2018), who introduced a possible new payment system on blockchain with the old traditional features of cash and deposits as usual medium of exchange and store of value, accompanied with the new features of CBDC as the possibility to store information, that was called privacy cost. Since when, central banks and governments around the world have been investigating possible ways to adapt blockchain technology and create new digital moneys or CBDC systems that include cash, wholesale and retail payments.

Most recently, on the 28 of June, the European commission (2023) put forward a proposal to set out a framework for a possible new digital form of the euro that the European Central Bank (ECB) may issue in the future, as a complement to cash. The implications of this paper will help to continue the discussion on the CBDC design and features in the future. According to Mikhalev et al. (2021), as of the 18th of April 2023, there were 137 different CBDC projects started in 97 different regions or countries, including the Digital Euro project in the Euro area, which should conclude in October 2023 according to ECB (2021). This paper will highlight the main findings of economist on the CBDC topic that will help to proceed the discussion of feasibility of CBDCs and their potential impact on the financial system.

We will examine the state of CBDC research, its main directions and implications for the economy today and in the future. We believe that is timely topic today- right before the possible implementations of CBDCs. We will use data from two main data bases Scopus and Web of Science (WoS). We will revise the recent literature, as well as perform a descriptive and an evaluating bibliometric review using the VOSviewer.

The rest of the paper is structured as follows. In the second section, we discuss the theoretical background in more details. The methodology is stated in the third section. We will present the results in the fourth section and implications in the fifth section.

## THEORETICAL BACKGROUND

Nakamoto (2008) introduced Bitcoin and blockchain technology as a representation of the peer-to-peer payment system, which uses unique technology to settle any transactions without a third party and that quickly gained attention in computer science and many other research fields, including medicine, internet of things (IoT), artificial intelligence (AI) or virtual reality. Introduced as the payment system, it has also reached the debate in the finance field, where the main topic of blockchain adoption is related to cryptocurrencies.

The first bibliometric review in the topic of cryptocurrencies was Ramona *et al.* (2019), that was conducted for research about Bitcoin. Cryptocurrencies and CBDC today are synonyms with financial

technologies (Fintech) development, but the use of innovation in the global financial system goes back long before cryptocurrencies. The introduction of the telegraph in 1838 provided the fundamental infrastructure for the first major period of Fintech and globalization in the late 19th century. The last phase of Fintech development or, the Fintech 4, includes but is not limited to cryptocurrencies. It also focuses on big technological companies (Bigtech) entering the financial market. Scholars distinguished four main eras of Fintech evolution that are presented in Table 1 (Arner *et al.*, 2015; Allen *et al.*, 2022).

| Dates | Fintech phases | Events |
|---|---|---|
| 1866-1967 | Fintech 1 | The period when the telegraph for transatlantic communication was used to the first automatic teller machine (ATM) |
| 1967-2008 | Fintech 2 | Globalized and digitalized financial services produced by traditional banks until 2008 |
| 2008- 2019 | Fintech 3 | Financial start-ups entering financial market after the after the Global Financial Crisis (GFC) |
| 2019-now | Fintech 4 | Bigtechs entering the market and the rise of cryptocurrencies |

Table 1. The phases of Fintech developemt (Source: Arner et al., 2015; Allen et. al.,2022)

The crypto market has been relatively small and has not posed a threat to financial stability yet. According to Coingeko (2023), as of the 4th of June 2023, there were 9,871 cryptocurrencies that had a market cap of 1.25 trillion US dollars in the market. Bitcoin dominated and amounted 47.9 % of the market with the market cap of 596 milliard US dollars and Ethereum (another blockchain-based protocol) with a market cap of 232 milliard US dollars was second and amounted 18.7% of the cryptocurrency market. The turning point of the discourse was the announcement of Libra (later called Diem) in 2019 by Meta (former Facebook). This event also marked the start of Fintech 4 and changed the regulatory approach towards cryptocurrencies from "too-small-to-care" to even **"too-big-to-regulate"** (Arner *et al.*, 2022).

Ante (2020) mapped academic discourse of cryptocurrencies in business and economics using social network analysis and found five main research subfields: 1) market efficiency and economics, 2) asset pricing and valuation, 3) principles and applications of blockchain technology, 4) transactions and anonymity and 5) monetary theory and policy. Sausa *et al.* (2022) explored linking cryptocurrencies and trust theories in a consumer context using literature review. Jiang *et al.* (2021) explored the evolution trends of cryptocurrency-related papers. Jalal *et al.* (2021) used bibliometric analysis to explore cryptocurrency literature in the areas of business and management. One of the most recent literature analysis of cryptocurrencies is Pattnaik *et al.* (2023). The broader review of CBDC literature would help to continue the discussion of feasibility of CBDCs. In addition, it would help governments that consider their roles on how they can join technological and finance firms in seeking to leverage the benefits of digital finance platforms (Arner et al., 2022).

Our primary review of CBDC research in economics, econometrics, and finance field has showed that the topic has gained momentum during 2022 with 130 articles in Scopus and 29 articles in WoS. Citations also have reached the peak in 2022 with 893 citations in Scopus and 269 in WoS, confirming that our systematic literature review is timely. See more in Figure 1.
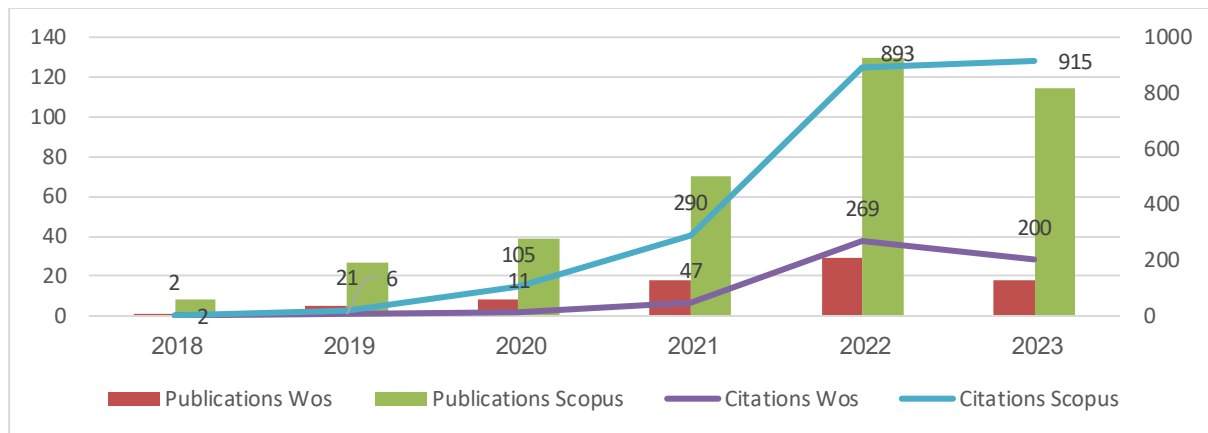


Figure 1. Citation and Articles on CBDC over time. (Sources: Scopus and WoS, on the 4th of Julyl, 2023)

Bhaskar et al. (2022) used bibliometric and content analysis to present the publication trends in CBDC and highlighted that research curiosity lay in the systematical framework, significance, and structural implication of CBDC. Our research will bring attention to wider range of topics beyond payments, including such topics as investments, financial literacy or market opportunities for data-based business.

## METHODOLOGY

We will use term central bank digital currency and its variation and will set the time period from 2018 to present, because, as Bhaskar et al. (2022) has stated, the literature on CBDCs began in 2018, indicating that CBDCs have recently attracted the researchers' interest. The term "CBDC" or "Central Banking Digital Currency" are most frequently used in literature. We will use the main principles of Stevens (1953) and Potter (1988) and will conduct two parts of bibliometric analyses that are a descriptive analysis and an evaluative analysis.

 The bibliometric analysis is a quantitative tool for exploring, measuring, mapping, and analyzing large volumes of existing research in a scientific field. It is a study aimed at clarifying the underlying research structure of a field. It analyses research trends in-depth and evaluates science as a productive knowledge system with credibility and objectivity. It allows us to uncover the nuances of a particular field's evolution while shedding light on the emerging areas in that field (Aziminezhad and Taherkhani, 2023).

We will improve the research assumptions of Bhaskar et al. (2022) by expanding data with the data from WoS and we will not limit our search to abstract, title, and author keywords. We will include all fields in the search, but we will focus our search on articles in economics. The final set of keywords and features we used is stated in Table 2.

| Field | Kyewords | Type | Publication date |
|---|---|---|---|
| All fields | "Central bank digital currencies" or "central bank digital currency" or "CBDC". | Articles | 2018.01.01.-2023.07.04. |

Table 2. Keywords and measures used in the searches

This general set of keywords used in the searches that included all fields will let us to provide an updated state of the economic literature and identify main topics, discussions, countries, journals, key authors and most valuable articles in this emerging field. Our final sample includes 79 articles in subject area economics, econometrics and finance from WoS and 388 articles from subject area economics in Scopus.

## RESULTS

*Descriptive analysis*

The first part of the study will be a productivity-related or descriptive analysis and present the results. During this stage, we will identify the most active journals, countries and authors in the field, started with the journals. According to our analysis the most active journals in Scopus are *Research in International Business and Finance* with 27 articles, *Cato Journal* with 16 articles and *Finance Research Letters* with 14 articles that mentions topic of CBDC in different forms. Most active journals in WoS are *China Economic Journal* with 6 articles in WoS and 9 in Scopus, *Journal of Economic Dynamics and Control* with 5 articles in Wos and 7 in Scopus, and *Journal of Monetary Economics* with 4 articles in WoS and 7 articles in Scopus. In addition, the most cited article, Thakor (2020), is published in *Journal of Financial Intermediation*, the second most cited article, Gronwald (2019), is published in *Journal of International Money and Finance*. The overview of most active journals is stated in Table 3.

| The most active Journals in Scopus | Articles |
|---|---|
| Research in International Business and Finance | 27 |
| Cato Journal | 16 |
| Finance Research Letters | 14 |
| China Economic Journal | 9 (6 in WoS search) |
| Finance Theory and Practice | 9 |
| Public Finance Quarterly | 9 |
| Journal of Central Banking Theory and Practice | 8 |

| | |
|---|---|
| Applied Economics | 7 |
| Journal of Economic Dynamics and Control | 7 (5 in WoS search) |
| Journal of Monetary Economics | 7 (4 in WoS Search) |

Table 3. The most active journals in Scopus and WoS

During the analysis of the most productive countries in Scopus and WoS, we have found that the most active country is the United States with overall 86 documents or 69 articles in Scopus and 17 articles in WoS. The second most active country, with overall 57 articles or 46 articles in Scopus and 11 in WoS, is China. The third most productive country is the United Kingdom with overall 56 articles or 44 articles in Scopus and 12 articles in WoS. Other most productive countries are Russia, Germany, Canada, Switzerland, Italy, France and India. More on the most productive countries in Table 4.

| Countries | WoS | Scopus | Sum |
|---|---|---|---|
| United States | 17 | 69 | 86 |
| China | 11 | 46 | 57 |
| United Kingdom | 12 | 44 | 56 |
| Russia | 5 | 33 | 38 |
| Germany | 6 | 24 | 30 |
| Canada | 7 | 15 | 22 |
| Switzerland | 5 | 14 | 19 |
| Italy | 4 | 15 | 19 |
| France | 2 | 16 | 18 |
| India | 1 | 13 | 14 |

Table 4. The most productive countries

The most productive authors in Scopus and WoS were Beretta, E. and Fujiki, H. with overall 7 publications or 5 articles in Scopus and 2 articles each in WoS. Kochergin, D.A., Lee, C.C., Hausken, K., Wang, G. had 6 articles each. Hausken, K., Wang, G. are also most active in WoS with 3 article each in WoS. Belke, A. has 5 articles, 3 articles in Scopus and 2 in WoS. Other most productive authors are Pandey, D.K., Shy, O., Eichengreen, B., Andolfatto, D., Davoodalhosseini, S.M. and Kwon, O. with overall 4 articles in Scopus and WoS each. The analysis of most active authors has concluded the descriptive part of our study and we will continue with the evaluation part of our analysis.

*Evaluative analysis*

In the evaluative part of our analysis, we will investigate different networks and value of bibliometric data. We have conducted three layers of evaluative analysis. In the first layer, we identify the most cited articles of the sample in Scopus and the WoS. In the second layer, we will perform keywords and text analysis using Vosviewer and in the last part we will conduct references analysis using Vosviewer. Among the most cited article in Scopus and WoS is Thakor (2020) with overall 427 citations in the second place is Gronwald (2019) with overall 120 citations, if we sum citations in Scopus and WoS core database. These two most cited articles discuss CBDC as one on the topic in cryptocurrencies. Thakor (2020) overviews the literature on Fintech and its interaction with banking, investigating CBDC in the

context of cryptocurrencies and payments. The prediction of the paper is, that in payment systems, clearing and settlement, cryptocurrencies will grow in popularity but are unlikely to replace fiat currency. It is likely that central bank digital currencies – which are centralized rather than being decentralized like Bitcoin – will emerge in the future to replace cash. Gronwald (2019) introduces CBDC from the cryptocurrencies point of view, saying that without the emergence of Bitcoin and other cryptocurrencies, a discussion about CBDC would not exist.

The more focused discussion on the CBDC is stated in Brunnermeier and Niepelt (2019), who show, that the swap between private and public money or CBDC coupled with central bank pass-through funding need not imply a credit crunch nor undermine financial stability. Andolfatto (2021) claims, that the introduction of CBDC has no detrimental effect on bank lending activity and may, in some circumstances, even serve to promote it and it is not likely to threaten financial stability.

Boot *et al.* (2021) studies the effects of technological change on financial intermediation, distinguishing between innovations in information (data collection and processing) and communication (relationships and distribution). They believe that the changes in the structure of the financial industry induced by technology as CBDC will affect monetary policy transmission and implementation and add that a better pass-through might be welcome, as a more cyclical and hard information-based financial system may require more countercyclical monetary policy. Other most cited articles are Mikhaylov (2021), Fernández-Villaverde *et. al* (2021), Bariviera *et. al* (2021), Agarwal and Chua (2020), Agur *et al.* (2022). The most cited articles of our searches in the Scope and WoS are stated in Table 5.

| The most cited articles | Cited (Scopus) | Cited (Wos) | Sum | Source title |
|---|---|---|---|---|
| Thakor (2020) | 243 | 184 | 427 | Journal of Financial Intermediation |
| Gronwald (2019) | 63 | 57 | 120 | Journal of International Money and Finance |
| Brunnermeier and Niepelt (2019) | 61 | 45 | 106 | Journal of Monetary Economics |
| Andolfatto (2021) | 47 | 44 | 91 | Economic Journal |
| Boot et. al (2021) | 50 | 37 | 87 | Journal of Financial Stability |
| Mikhaylov (2021) | 61 | 25 | 86 | Terra Economicus |
| Fernández-Villaverde et. al (2021) | 43 | 35 | 78 | Review of Economic Dynamics |
| Bariviera et. al (2021) | 40 | 37 | 77 | Journal of Economic Surveys |
| Agarwal and Chua (2020) | 40 | 32 | 72 | China Finance Review International |
| Agur et al. (2022) | 29 | 39 | 68 | Journal of Monetary Economics |

*Table 5.* The most cited articles in Scopus and WoS

In the second layer of the analysis, we analyze the occurrence of authors keywords and keywords in text of abstracts using VOSviewer. We use data from WoS and Scopus databases. The minimum occurrence of a keyword 5 times and full counting have resulted in 42 keywords that met the requirements and formed 7 clusters. The first cluster includes keywords such as payment, CBDC,

monetary policy and financial stability. The second cluster includes privacy, stablecoins and China. The third includes banks, financial intermediation and fintech. The fourth is about financial inclusion, financial literacy, regulation and payment methods. The fifth is dedicated more to money, payments and liquidity. The sixth includes monetary system and cash. The last cluster includes bitcoin, digital economy and covid-19. The clusters and relationships are shown in Figure 2.
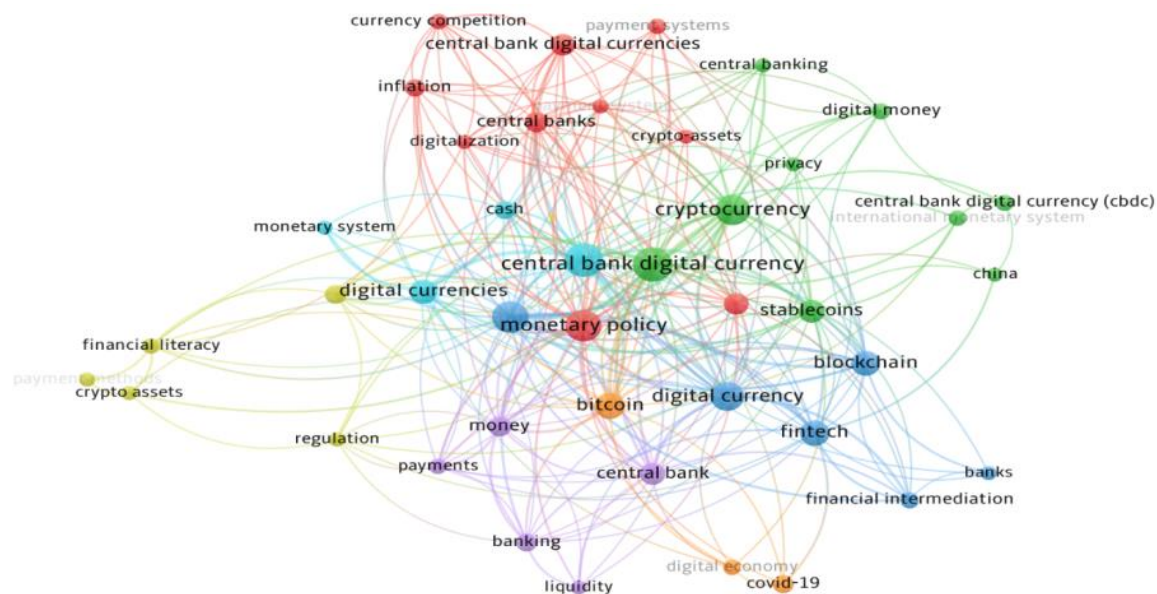


Figure 2. The results of authors keywords analysis

To sum up the first results of the evaluative analysis, the author keywords analysis has resulted in 7 different streams of authors curiosity in CBDC research, that we would like to name as follows:*1) financial policy and stability, 2) privacy, 3) banking, 4) financial inclusion and literacy, 5) payments and liquidity, 6) cash and 7) digital economy.* We will continue with the map-based text analysis.

The text analysis of the abstracts and titles, with binary counting and a minimum of 10 times occurrence, has resulted in 169 items. We have chosen 101 terms for visual analysis. We identified 5 main clusters. The first cluster is about monetary policy, banks, deposits, financial stability, liquidity, cash, concept, consequences, effectiveness, consumer, benefit, welfare, cost, proposal. The second cluster includes keywords investors, information, relationships, practice, concern, policymaker, security, evolution, emergence, financial sector. The third cluster includes market, data, policy, evidence, pandemic, short term, response, interest rate, covid, business. The fourth cluster includes literature, design methodology approach, originality value, banking, finance, author. The fifth cluster is dedicated to cryptocurrencies, stablecoin, bitcoin, volatility, means, medium, value, exchange. More details and the relationships between the clusters in Figure 3.
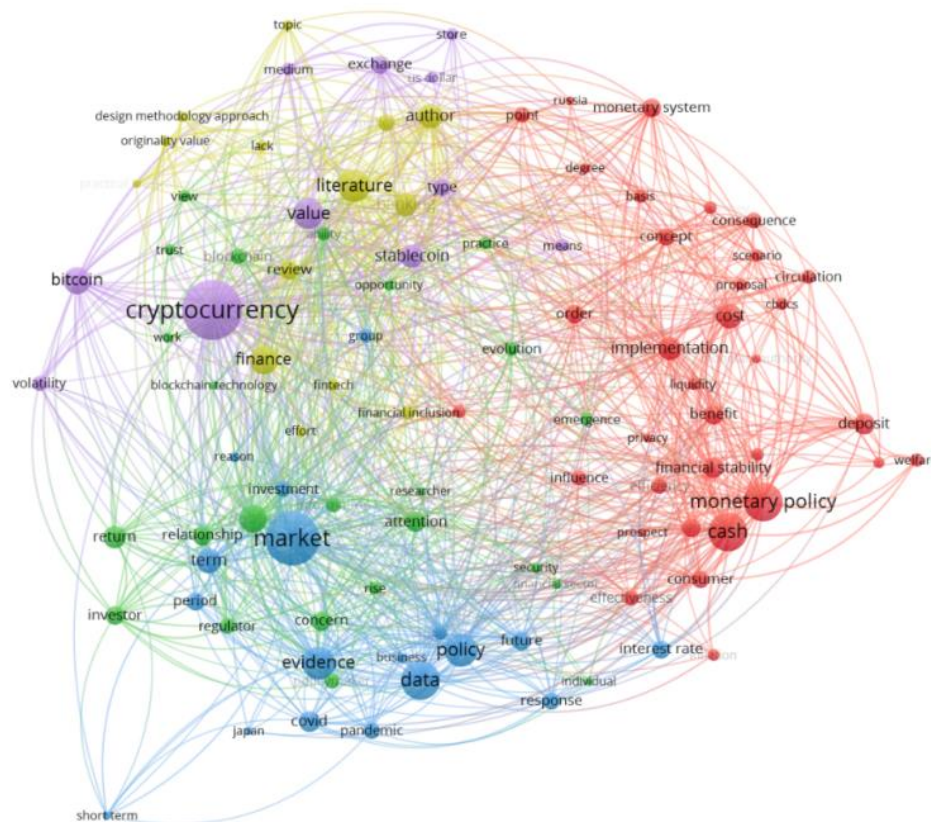
Figure 3. The results of the map-based text analysis

The map-based text analysis let us to conclude with the 5 main research approaches scholars use exploring CBDC that are 1) *monetary policy, 2) investments evolution in financial market, 3) market opportunities based on data, 4) design of CBDC and 5) cryptocurrency research.*

The last layer of our study will be a reference analysis. We have identified 20 most cited authors in references that takes minimum 66 times citation in references each. The most cited authors form 3 clusters. The first cluster includes central banks, the Bank of International Settlement (BIS) and other policy experts such as Wright, R., Sanches, D., Kumhof, M., Bordo, M.D., Eichengreen, B., Auer, R., Frost, J. The second cluster consists of Lee, C., Lucey, B.M., Wang, Y. The last cluster includes Yarovaya, I., Corbet, S., Bouri, E., Roubaud, D. Both the second and the third clusters discusse the CBDC and cryptocurrencies effect on financial market. The authors and relationships are stated in Figure 4.
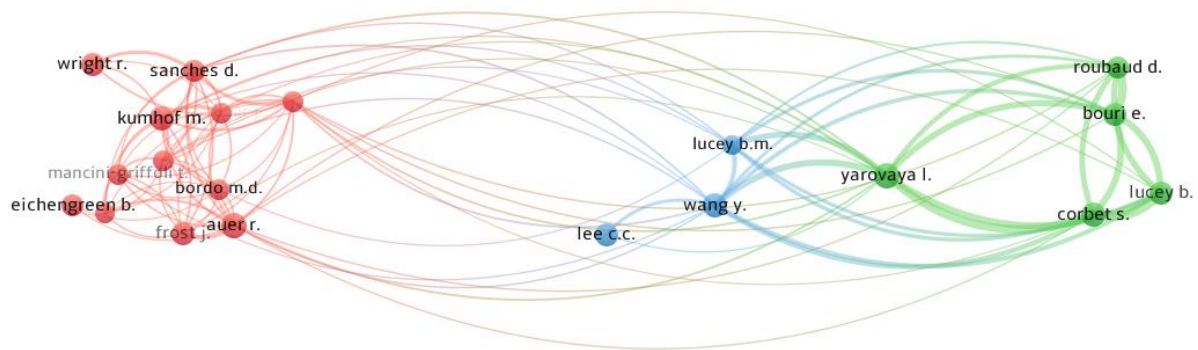
Figure 4. The most cited authors in references

Lastly, we have identified 10 most cited pieces in references, with a minimum of 11 times cited and found 3 clusters. The first cluster includes BIS (2020), Corbet et al. (2018), Nakamoto (2008), ECB (2020), the second - Bindseil et al. (2020), Bordo and Levin (2017), BIS (2018), the third - Elsayed *et al.* (2022), Fernandez-villaverde *et al.* (2021), Wang *et al.* (2022).

## IMPLICATIONS

We have conducted a comprehensive review of literature using bibliometric analysis that highlights the roots and current streams of CBDC research. Bhaskar et al. (2021) stated that CBDC have far-reaching implications for monetary system and their development could pave the way for a global common currency. We have showed that the roots of CBDC research lie in the response of cryptocurrencies, but the current streams explore a wide range themes as financial inclusion and literacy, investments, data and market opportunities. We have identified the main approaches and authors beyond the previous implications in the field and our results could help scholars to reshape the discourse in many different perspectives beyond payments.

## CONCLUSIONS

We have investigated one of the fastest growing topics in Fintech research - CBDC. We have done the descriptive analysis and investigated most productive authors, countries and sources, that mentions CBDCs in their discussions. According to our descriptive analysis the most active journals are *Research in International Business and Finance*, *Cato Journal* and *Finance Research Letters*. The most active countries are the United States, China and the United Kingdom. The most productive authors are Beretta, E. and Fujiki, H. with overall 7 publications each and Kochergin, D.A., Lee, C.C., Hausken, K., Wang, G. with 6 articles each.

We have conducted the evaluation part of the analysis and found that the most cited article is Thakor (2020), the second is Gronwald (2019) and the third is Brunnermeier and Niepelt (2019). We have also

found that the research curiosity of the authors in the field lies in 7 main topics: *1) financial policy and stability, 2) privacy, 3) banking, 4) financial inclusion and literacy, 5) payments and liquidity, 6) cash and 7) digital economy, included Bitcoin*. Scholars have approached the research curiosity from 5 main directions *:1) monetary policy, 2) investments evolution in financial market, 3) market opportunities based on data, 4) design of CBDC and 5) cryptocurrency research.*

Our insights will draw attention to wider range of research streams of CBDC, other than payments and a possible global currency. We have highlighted the main roots in economics and recent themes of the discourse. We believe that our findings can help scholars and practitioners to navigate between different approaches of CBDC research and even will help to discuss the feasibility of CBDs.

## REFERENCES

Agarwal, S. and Chua, Y. H. (2020), "FinTech and household finance: a review of the empirical literature", China Finance Review International, Vol. 10 No. 4, pp. 361-376. https://doi.org/10.1108/CFRI-03-2020-0024

Agur, I., Ari, A. and Dell'Ariccia, G. (2022), "Designing central bank digital currencies", Journal of Monetary Economics, Vol. 125, pp. 62-79. https://doi.org/10.1016/j.jmoneco.2021.05.002

Allen, F., Gu, X. and Jagtiani, J. (2022), "Fintech, cryptocurrencies, and CBDC: Financial structural transformation in China", Journal of International Money and Finance, Vol. 124 No. 102625. https://doi.org/10.1016/j.jimonfin.2022.102625

Andolfatto, D. (2021), "Assessing the impact of central bank digital currency on private banks", The Economic Journal, Vol. 131 No. 634, pp. 525-540. https://doi.org/10.1093/ej/ueaa073

Ante, L. (2020), "A place next to Satoshi: foundations of blockchain and cryptocurrency research in business and economics", Scientometrics, Vol. 124 No. 2, pp. 1305-1333. https://doi.org/10.1007/s11192-020-03492-8

Arner, D. W., Barberis, J. N. and Buckley, R. P. (2015), "The evolution of Fintech: A new post crisis paradigm?", Faculty of Law Research Paper No. 2015/047, University of Hong Kong, Hong Kong, China. http://dx.doi.org/10.2139/ssrn.2676553

Arner, D. W., Buckley, R., Charamba, K., Sergeev, A. and Zetzsche, D. (2022), "Governing FinTech 4.0: BigTech, Platform Finance, and Sustainable Development", Fordham Journal of Corporate and Financial Law, Vol. 27. http://dx.doi.org/10.2139/ssrn.3915275

Auer, R., Frost, J., Gambacorta, L., Monnet, C., Rice, T. and Shin, H. S. (2022), "Central bank digital currencies: motives, economic implications, and the research frontier", Annual review of economics, Vol. 14, pp. 697-721. http://dx.doi.org/10.2139/ssrn.3922836

Aziminezhad, M. and Taherkhani, R. (2023), "BIM for deconstruction: A review and bibliometric analysis", Journal of Building Engineering, Vol. 73 No. 106683. https://doi.org/10.1016/j.jobe.2023.106683

Bariviera, A. F. and Merediz-Solà, I. (2021), "Where do we stand in cryptocurrencies economic research? A survey based on hybrid analysis", Journal of Economic Surveys, Vol. 35 No. 2, pp. 377-407. https://doi.org/10.1111/joes.12412

Barrdear, J. and Kumhof, M. (2022), "The macroeconomics of central bank digital currencies", Journal of Economic Dynamics and Control, Vol. 142 No. 104148. https://doi.org/10.1016/j.jedc.2021.104148

Bhaskar, R., Hunjra, A. I., Bansal, S. and Pandey, D. K. (2022), "Central bank digital currencies: Agendas for future research", Research in International Business and Finance, Vol. 62 No. 101737. https://doi.org/10.1016/j.ribaf.2022.101737

Bindseil, U. (2019), "Central bank digital currency: Financial system implications and control", International Journal of Political Economy, Vol. 48 No. 4, pp. 303-335. http://dx.doi.org/10.2139/ssrn.3385283

BIS (2018), "Central bank digital currencies", available at: https://www.bis.org/cpmi/publ/d174.htm (accessed 4 July 2023)

BIS (2020), "Central bank digital currencies: foundational principles and core features", available at: https://www.bis.org/publ/othp33.pdf (accessed 4 July 2023)

Boot, A., Hoffmann, P., Laeven, L. and Ratnovski, L. (2021), "Fintech: what's old, what's new?", Journal of financial stability, Vol. 53 No. 100836. https://doi.org/10.1016/j.jfs.2020.100836

Bordo, M.D. and Levin, A. (2017), "Central Bank digital currency and the future of monetary policy", NBER Working Paper No. 23711, National Bureau of Economic Research. https://doi.org/10.3386/w23711

Brunnermeier, M. K. and Niepelt, D. (2019), "On the equivalence of private and public money", Journal of Monetary Economics, Vol. 106, pp. 27-41. https://doi.org/10.1016/j.jmoneco.2019.07.004

Coingecko (2023), available at:https://www.coingecko.com/ (accessed July 4, 2023).

Corbet, S., Meegan, A., Larkin, C., Lucey, B. and Yarovaya, L. (2018), "Exploring the dynamic relationships between cryptocurrencies and other financial assets", Economics Letters, Vol. 165, pp. 28-34. https://doi.org/10.1016/j.econlet.2018.01.004

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. and Lim, W. M. (2021), "How to conduct a bibliometric analysis: An overview and guidelines", Journal of business research, Vol. 133, pp. 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

ECB (2020), "Report on a digital euro", available at: https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf (accessed 4 July 2023)

ECB (2021), "Digital Euro", available at: https://www.ecb.europa.eu/paym/digital_euro/html/index.en.html (accessed 18 April 2023).

Elsayed, A. H. and Nasir, M. A. (2022), "Central bank digital currencies: An agenda for future research", Research in International Business and Finance, Vol. 62 No. 101736. https://doi.org/10.1016/j.ribaf.2022.101736

European Commission (2023), "Single Currency Package: new proposals to support the use of cash and to propose a framework for a digital euro", available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3501 (accessed 4 July 2023)

Fernández-Villaverde, J., Sanches, D., Schilling, L. and Uhlig, H. (2021), "Central bank digital currency: Central banking for all?", Review of Economic Dynamics, Vol. 41, pp. 225-242. https://doi.org/10.1016/j.red.2020.12.004

Gronwald, M. (2019), "Is Bitcoin a Commodity? On price jumps, demand shocks, and certainty of supply", Journal of International Money and Finance, Vol. 97, pp. 86-92. https://doi.org/10.1016/j.jimonfin.2019.06.006

Jalal, R. N. U. D., Alon, I. and Paltrinieri, A. (2021), "A bibliometric review of cryptocurrencies as a financial asset", Technology Analysis and Strategic Management, pp. 1-16. https://doi.org/10.1080/09537325.2021.1939001

Jiang, S., Li, X. and Wang, S. (2021), "Exploring evolution trends in cryptocurrency study: From underlying technology to economic applications", Finance Research Letters, Vol. 38 No. 101532. https://doi.org/10.1016/j.frl.2020.101532

Masciandaro, D. (2018), "Central Bank digital cash and cryptocurrencies: insights from a new Baumol–Friedman demand for money", Australian Economic Review, Vol. 51 No. 4, pp. 540-550. https://doi.org/10.1111/1467-8462.12304

Mikhalev, I., Burchardi, K., Struchkov, I., Song, B. and Gross, J. (2021), available at: https://cbdctracker.org/ (accessed 18 April 2023)

Mikhaylov, A. (2021), "Development of Friedrich von Hayek's theory of private money and economic implications for digital currencies", Terra Economicus, Vol. 19 No. 1, pp. 53-62. https://doi.org/10.18522/2073-6606-2021-19-1-53-62

Nakamoto, S. (2008), "Bitcoin whitepaper", available at: https://bitcoin.org/bitcoin.pdf (accessed 18 April 2023).

Pattnaik, D., Hassan, M. K., Dsouza, A., Tiwari, A. and Devji, S. (2023), "Ex-post facto analysis of cryptocurrency literature over a decade using bibliometric technique", Technological Forecasting and Social Change, Vol. 189 No. 122339. https://doi.org/10.1016/j.techfore.2023.122339

Potter, W. G. (1988), "Of Making Many Books There Is No End: Bibliometrics and Libraries", Journal of Academic Librarianship, Vol. 14 No. 4.

Ramona, O., Cristina, M. S., and Raluca, S. (2019), "Bitcoin in the scientific literature–a bibliometric study", Studies in Business and Economics, Vol. 14 No. 3, pp. 160-174. https://doi.org/10.2478/sbe-2019-0051

Sousa, A., Calçada, E., Rodrigues, P. and Pinto Borges, A. (2022), "Cryptocurrency adoption: a systematic literature review and bibliometric analysis", EuroMed Journal of Business, Vol. 17 No. 3, pp. 374-390. https://doi.org/10.1108/EMJB-01-2022-0003

Stevens, R. E. (1953), "The Use of Library Materials in Doctoral Research a Study of the Effect of Differences in Research Method", The Library Quarterly, Vol. 23 No. 1, pp. 33-41. https://doi.org/10.1086/617937

Thakor, A.V. (2020), "Fintech and banking: What do we know?", Journal of Financial Intermediation, Vol. 41. https://doi.org/10.1016/j.jfi.2019.100833

Van Eck, N.J., Waltman, L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", Scientometrics, Vol. 84, pp. 523–538. https://doi.org/10.1007/s11192-009-0146-3

Wang, Y., Lucey, B. M., Vigne, S. A. and Yarovaya, L. (2022), "The effects of central bank digital currencies news on financial markets", Technological Forecasting and Social Change, Vol. 180 No. 121715. https://doi.org/10.1016/j.techfore.2022.121715

# FEMALE ENTREPRENEURSHIP - AFTER CORONA: NEW CONCEPTS TO SUPPORT WOMEN IN THEIR START UP CAREERS

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## ABSTRACT

German startups and company foundations are of great importance for the German economy. To support startup activities, the number of funding programs in Germany has risen to an enormous level in recent years. However, the almost unmanageable number of support options and disbursements of subsidies also implies an increased risk of intransparency and "blind actionism" in start-up support.

In an international comparison of startup-related conditions, Germany ranks only in the middle of the range, despite a wide range of efforts in the entrepreneurship sector. A closer look at the sociographic cross-section of the start-up structure in Germany reveals a high propensity to start-ups from the university environment which highlights the relevance of start-up support institutions at universities in supporting start-ups. At the same time, there is a comparatively low proportion of women in the start-up scene. The early-stage entrepreneurial activity rate (TEA) of women is statistically significantly lower than that of men. In an international comparison, the ratio between male and female founders in Germany is thus significantly below the average value. Since the corona pandemic, the situation has potentially further increased.

To support start-ups from the academic environment and especially to support women in start-ups, there are already many universities in Germany that are particularly committed to promoting students, university staff and graduates who are interested in starting up a business. The research paper presents new findings on start-up support for women at universities and the resulting implications/recommendations for action for more effective support of female founders in the future.

*Keywords: Entrepreneurship, Female Entrepreneurship, Start-up Support, Universities, Gender Gap, Gender Equality, Gender & Diversity, Innovations, Corona*

## INTRODUCTION

The macroeconomic relevance of startups and start-up companies for Germany is undisputed, so that a large number of support options and funding programs are provided at federal and state level to support startups. Due to the high proportion of academic founders (cf. Kollmann et al. 2022), universities and university startup support centers play a prominent role in supporting startup projects.

Despite numerous support activities in entrepreneurship, the number of registrations of commercial start-ups in Germany has tended to decline over the last 10 years (cf. IfM Bonn, 2023) and the proportion of female founders in start-ups is comparatively low (Sternberg et al. 2022). The situation in startups has worsened even further since the Corona pandemic (cf. Herold et al., 2022; cf. KfW (1), 2022). Implications on the gender gap in start-up activity as well as the analysis of concepts to close the gap form central contents of this research paper.

This research paper draws in part on findings from a qualitative study conducted at the Technical University of Applied Sciences Lübeck. The research results provide new insights into the support landscape for women at the best start-up-supporting universities (according to module 4 "Start-up support" of the Stifterverband's Gründungsradar 2020) in Germany. The analysis of the status quo of support services for women in start-ups in this research paper is followed by a research paper with further findings on support services for women at universities.

## BACKGROUND, PROBLEM & OBJECTIVE OF THE PAPER

A look at the sociographic cross-section of the start-up structure in Germany reveals a low proportion of start-ups by women in the start-up scene. Currently, the early-stage entrepreneurial activity rate (TEA = Total early-stage Entrepreneurial Activity describes the percentage of prospective entrepreneurs or entrepreneurs active for up to 3.5 years among 18-64 year-olds) of women at 5.3% is statistically significantly below the rate of men (8.4%) and thus in the lower mid-range compared with other countries with a high income (Sternberg et al. 2022). If we now take a closer look at the founders of young companies with a scalable business model and a high degree of innovation, the gender gap is also reflected here in the low proportion of female entrepreneurs of around 20.3% (Kollman et al., 2022). In an international comparison, the proportion of female entrepreneurs in Germany is thus significantly below the average value (cf. Sternberg et al., 2022).

Almost 90% of women who start a business in Germany have an academic background (cf. Metzger, 2022), which gives universities and their startup-supporting institutions an exposed role in terms of supporting startups by women. At the same time, the gender gap is also significant in higher education.

At 29.7%, women represent less than one-third of the start-up personalities at universities (cf. Frittsche et al., 2023).

The high propensity to found companies from the academic sector coupled with the low proportion of women in the start-up scene provided the impulse for a dedicated examination of support for women in start-up processes at universities in Germany. The aim of this research paper is to contribute to reducing the gender gap in entrepreneurship by identifying options for supporting women in start-up processes at universities in order to further tap the potential for start-ups by women. To this end, the status quo of start-up support programs for women at universities will first be presented.

## STATUS QUO ON WOMEN IN START-UP PROCESSES IN GERMANY

There are now a large number of scientific contributions on the category of "gender" in start-up support (cf. Schell, 2009). Studies already provide approaches for optimizing start-up support for female entrepreneurs by identifying gender-specific challenges in the start-up sector (cf. Hirschfeld et al., 2020). Furthermore, associations already exist and are active in the field of female entrepreneurship, exemplified by the Association of German Women Entrepreneurs and the WEgate initiative (wegate.eu, 2023).

Despite topic-related scientific contributions, supporting programs and legal regulations on gender equality, discrepancies still exist between men and women in the start-up scene. Research contributions have already stated that women have a lower level of digitalization than men (cf. Initiative D21 e.V. and Kompetenzzentrum Technik-Diversity-Chancengleichheit, 2020) and structural disadvantages with regard to network design. For example, women have less powerful and effective networks compared to men (cf. Greguletz et al., 2018). Women's higher risk aversion provides another rationale for the gender gap in entrepreneurial activity in Germany (cf. Kremel, Yazdanfar, 2015, among others). Compared to men, women also receive lower financial resources for the realization of business start-ups and bear higher risks in self-employment when starting a family (Herold et al., 2022).

Further factors for the low proportion of women in the start-up scene can be derived from an examination of the gender distribution at universities in Germany. Although the overall share of women among students in all fields of study in Germany is 52.4% (Destatis, 2023 (2)), there is a high variance in the gender distribution between majors and courses of study. It is evident that there is a lower proportion of female students in degree programs with a high propensity to start a business. For example, the share of women in MINT (german acronym for mathematics, computer science, natural science and technology) fields of study, from which the majority of all start-ups originate (cf. Metzger, 2022; cf. Frittsche et al., 2023), is comparatively low at 34.5% (cf. Destatis, 2023 (1)). The proportion of female students is even lower in courses of study in information and communication technologies,

where the proportion of female students is only 21.8% (cf. Destatis, 2023 (1)). The available articles thus already reveal a large number of factors that are linked to the low proportion of women in start-up projects.

Furthermore, implications of the Covid-19 pandemic affect startup activity in Germany. Irrespective of gender, the number of start-ups in Germany reached a millennium low during the Corona Pandemic in 2020 (cf. KfW (1), 2022). According to the KfW Gründungsmonitor, the share of start-ups by women increased in the period of the Corona pandemic 2019 - 2021 (cf. KfW (1), 2022). In contrast, Herold et al. (2022) note that the gender gap has widened since the beginning of the Covid 19 pandemic to the disadvantage of women since 2019 (cf. Herold et al., 2022).
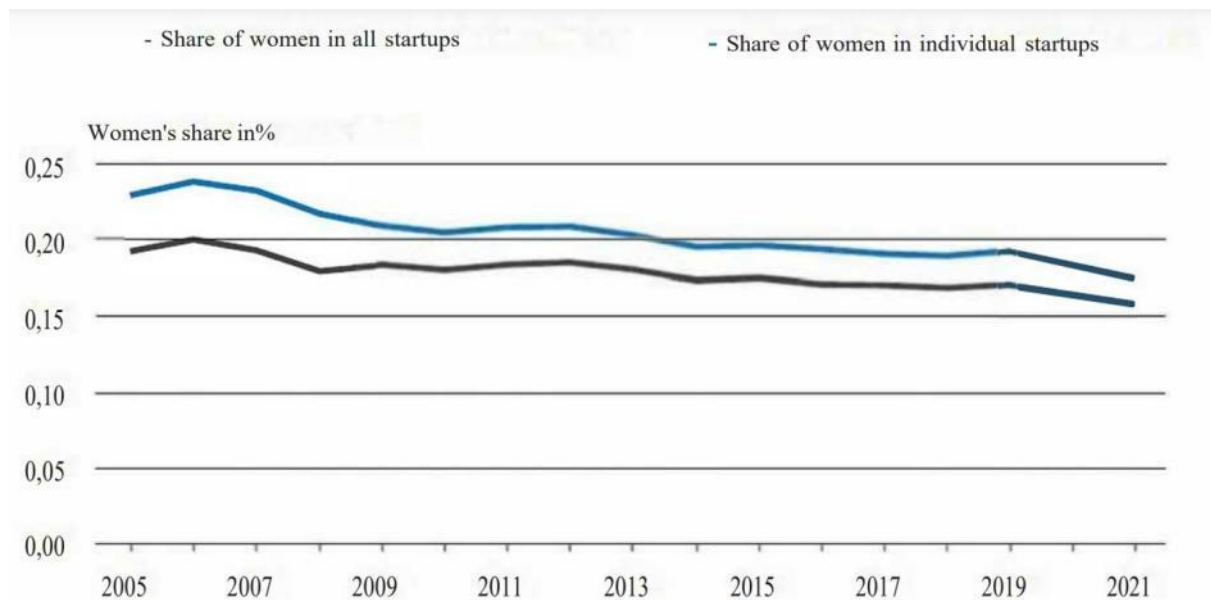


Figure 1. Share of women in start-ups and single start-ups 2005 - 2021, adjusted presentation based on data from infas360, authors' calculations Herold E. et al, Figure, p. 37, 2022.

According to this, the share of women in all startups, but also in particular the share of women in individual startups, decreased again during the pandemic (see Figure 1), which directs the focus of the analysis to the effects of the Corona pandemic on startup projects by women.

It was found that Corona-induced changes in the general conditions, such as the childcare situation, also influence the number of start-ups by women (cf. Herold et al., 2022). In total, only 39% of the universities stated that Corona had led to a higher relevance of innovations and start-ups (cf. Frittsche et al, 2023). The increased support for women in entrepreneurship now seems all the more important after the pandemic, which is the reason for the interest in looking at programs to support female entrepreneurs at German universities.

## EMPIRICAL FINDINGS ON START-UP SUPPORT ACTIVITIES FOR WOMEN AT GERMAN UNIVERSITIES

In order to be able to generate further insights into start-up support for women at universities in Germany, two central research questions were posed:

1. are there currently explicit programs specifically for women in start-up support at the best German universities?

2. what support programs are offered for women in start-ups at the best German universities?

In order to answer the research questions, new findings were generated within the framework of an explorative study. For this purpose, representatives of start-up support centers at the ten best start-up support universities (small, medium, large) in Germany according to Gründungsradar 2020 were interviewed in qualitative interviews. This is also the reason for the use of the term "best startup-supporting universities" in the further course of this research paper.

Module 4 "Start-up support" of the Gründungsradar is composed of the following indicators:

"- Diversity of support services outside of consulting.

- Existence of mentoring programs

- Number of start-up projects per 10,000 students

- Variety of consulting services provided by university and/or network partners

- Number of full-time equivalent start-up support staff per 10,000 students"

(see module ranking 4 "Start-up support", Frank et al., 2021)

The empirical study was conducted in 2021 and thus falls within the Covid 19 pandemic period. Due to duplicate placements in the Gründungsradar survey, the population was 31 start-up support centers with a sample of 25. The selected universities were contacted via email and interviewed using a semi-structured interview guide for a total of 23 questions. To generate findings on support formats for women in the context of start-up support at the best German universities, the representatives of the universities were asked about support offerings for different gender identities (m/f/d) in the context of start-up support.

The interviews were conducted in a media-mediated manner using a web conferencing system and, after consenting to the use of the data, were recorded. Following the analysis, the interviews were transcribed and the responses were categorized and evaluated using MAXQDA software.

## RESULTS OF THE EMPIRICAL ANALYSIS

The analysis of the data provided insights into the frequency of start-up support services at the best start-up support universities as well as into the current start-up support services for women.

Consequently, a differentiation was made between current start-up support services for women at the time of the survey and services offered in the past.
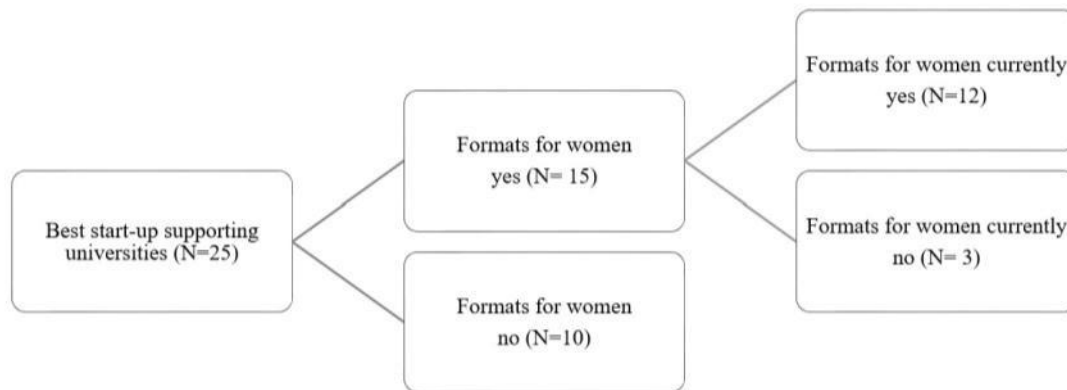


Figure 2. Programs for women in start-up support, visualization of data from empirical analysis, Ladwig D.H., Wohlert M.J., 2022, own illustration.

The evaluation of the analysis shows that a total of 12 of the 25 universities surveyed currently offer formats to support women in entrepreneurship. Furthermore, three universities stated that they had offered start-up support programs specifically for women in the past, but that these are currently no longer being offered.

Another 13 of the universities surveyed did not have any offerings explicitly for women during the survey period. Where reasons were given for the lack of offerings, they varied among the universities, with the number of students being cited as the reason for this. It was also stated that a gender-specific offering would conflict with the university's equality policy and that offerings specifically for women would lead to a disadvantage for male students (Ladwig, Wohlert, 2022).

Although less than 50% of the best startup-supporting universities had offerings for women in startup support at the time of the survey, universities across the board are aware of the issue of women in startups (Cf. Ladwig, Wohlert, 2022).

In addition to analyzing the quantity of start-up support activities for women, findings were generated on the characteristics and content of start-up support at the best German universities (although start-up support services for different gender identities were surveyed during the interviews, almost exclusively services for women were considered).

The formats currently offered for women mostly offer workshops, qualification and sensitization events (N=5), furthermore Female Talks with women as "Role Models" (N=4) are offered. Support programs for women also include networking events (N=3), comprehensive support programs for women (N=3) (here, support programs outside of the start-up support centers related to start-up support were also taken into account; a comprehensive support program for women in entrepreneurship is the "Female Entrepreneurship" project at the Technical University of Applied

Sciences in Lübeck) or events and formats on gender equality issues (N=2). Furthermore, consulting coaching and mentoring programs by women for women (N=2) are also used (multiple answers possible).

In addition to offers within the context of start-up support at universities, offers outside of start-up support at universities for women are also being applied. For example, the relevance of increasing the basic proportion of female students in foundation-oriented courses of study to increase the number of female start-up projects has been taken up by some universities and corresponding programs have been introduced. These include programs to promote women in MINT fields (N=2). The formats offer the possibility of increasing the basic proportion of female students in MINT fields and thus, as a knock-on effect, of potentially being able to further exploit previously unused start-up potential. In addition, formats explicitly for women are also offered in the context of teaching (N=1).

An exemplary comprehensive program that was initiated specifically to support women in start-up processes is the project "Female Entrepreneurship" at the Technical University of Applied Sciences in Lübeck, which is briefly presented below.

## THE "FEMALE ENTREPRENEURSHIP" PROJECT AT THE TECHNICAL UNIVERSITY OF APPLIED SCIENCES LÜBECK - A "GOOD PRACTICE" FROM THE FIELD

Since 2019, the project "Female Entrepreneurship" at the Lübeck University of Applied Sciences has been focusing on the "gender gap" in entrepreneurship. The relatively low proportion of women founding companies at the university gave rise to the project's goal of further exploiting the potential for start-ups by women and, with the help of a demand-oriented offer, sensitizing women to start-ups and providing them with the best possible support in the start-up process.

The project, financed by the Department of Mechanical Engineering & Economics, is a special focus of the Institute for Entrepreneurship & Business Development at the Technical University of Applied Sciences Lübeck. Through the transfer of current findings from entrepreneurship research into teaching and start-up consulting as well as the feedback from these areas into research, a research-based and practice-oriented offer for the special promotion of women in start-up processes could be created. The awareness-raising and qualification formats within the framework of the project are geared to the special needs of women, such as the promotion of digitalization and networking skills. All contents of the project are equally accessible to students of all genders. Furthermore, the project implies event formats for early sensitization of students for the entrepreneurship topic.

## SOLUTION APPROACHES & RECOMMENDATIONS FOR ACTION

The special needs of women in the start-up process result in the necessity of designing appropriate content in the support and funding programs at the universities. The use of experiences and findings on existing formats at the best startup-supporting universities provides approaches and linkage possibilities for the conception of corresponding formats. In order to be able to further adapt the offer of start-up support to the special needs of women, it is consequently recommended to evaluate the effectiveness of existing programs for the support of women in start-up processes.

In addition to the orientation of support activities, it is also necessary to create suitable framework conditions for women's start-up projects. This implies not only suitable childcare but also access to the necessary capital. In order to increase the share of women in start-ups, it is also advisable to raise the awareness of schoolgirls at an early stage for disciplines with a high propensity to start-ups.

## CONCLUSION & LIMITATIONS

As a limitation of the research contribution, it should be pointed out that the selected sample of the best start-up-supporting universities according to the Gründungsradar 2020 in the module "Start-up support" does not necessarily imply that the best universities according to the ranking of the Gründungsradar also represent the best universities in the start-up support services for women. Nevertheless, the applied quantitative indicators of the Gründungsradar in the "start-up support" module provide evidence that the best universities according to the module show a particular activity in start-up support. The sample thus creates target-oriented findings for the research topic of this paper. Furthermore, the influence of already discussed methodological limitations in the survey of the Gründungsradar of the Stifterverband has to be taken into account (cf. Frank, Schröder, 2021).

The selected sample of the best startup-supporting universities with the implicit experiences enables a comprehensive and practice-oriented insight into startup support at universities. The results of the analysis further show that university-specific factors, such as the focus of the universities' studies, also have an influence on the basic proportion of female students and thus also on the proportion of female entrepreneurs from the university. Although only a few universities have special offers to support women in the start-up process, it is positive to note that universities in Germany are sensitized to women's start-ups and their support across the board.

The gender gap in entrepreneurship continues to exist and was potentially widened by the pandemic. The worsening of the situation of women in start-ups during the Corona pandemic provides the necessary impulse for reflecting on the support of women in start-ups as well as the possibility of deriving appropriate options for action from this. By examining the universities that support start-ups,

this research paper makes a contribution to a highly relevant influencing factor on women in start-up processes in Germany.

# REFERENCES

Destatis, (2023) (1) Frauenanteil unter Studienanfängern im MINT-Bereich mit 34,5 % auf Höchststand: https://www.destatis.de/DE/Presse/Pressemitteilungen/2023/01/PD23_N004_213.html, abgerufen am 17.04.2023

Destatis, (2023) (2) Frauenanteil an Studienbeginnenden 2021. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Tabellen/frauenanteile-akademischelaufbahn.html, abgerufen am 17.04.2023.

Frank, A., Schröder, E. (2021): Gründungsradar 2020 - Wie Hochschulen Unternehmungsgründungen fördern, Edition Stifterverband

Frittsche, K., Kessler, M., Schröder, E. (2023): Gründungsradar 2022 - Wie Hochschulen Unternehmungsgründungen fördern, Edition Stifterverband

Gather, C. und I. Biermann (2021): Unternehmen: Warum gründen Frauen seltener?«, Wirtschaftsdienst 101(11), 838.

Global Entrepreneurship Monitor: Definitions: https://www.gemconsortium.org/wiki/1154, abgerufen am 18.04.2023.

Gottschalk, S. und M. Niefert (2011): Gender Differences in Business Success, ZEW Discussion Paper No. 11-019.

Greguletz, E. & Diehl, M. & Kreutzer, K. (2018). Why women build less effective networks than men: The role of structural exclusion and personal hesitation. Human Relations. 72. 001872671880430. 10.1177/0018726718804303.

Herold E., Krolage, C., Menkhoff, M., Oberhuber, A., Schüle, P. (2022): Frauen als Gründerinnen: Die Covid-Pandemie vergrößert den bestehenden Gender Gap, ifo Institut, München, 2022, ifo Schnelldienst, 2022, 75, Nr. 10, 36-40.

IfM Bonn. (25. März, 2023). Anzahl der gewerblichen Existenzgründungen in Deutschland von 2012 bis 2022 [Graph]. In Statista. Zugriff am 18. April 2023, von https://ssl.th-luebeck.de:11001/statistik/daten/studie/882829/umfrage/gewerbliche-existenzgruendungen-in-deutschland/

KfW (1) Kreditanstalt für Wiederaufbau (30. Juni, 2022). Anzahl der Gründer in Deutschland im Zeitraum von 2000 bis 2021 [Graph]. In Statista. von https://ssl.th-luebeck.de:11001/statistik/daten/studie/183869/umfrage/entwicklung-der-absoluten-gruenderzahlen-in-deutschland/ Zugriff am 22. April 2023.

KfW (2) Kreditanstalt für Wiederaufbau (30. Juni, 2022). Frauenanteil an allen Gründerpersonen in Deutschland von 2004 bis 2021 [Graph]. In Statista von https://ssl.th-luebeck.de:11001/statistik/daten/studie/197114/umfrage/anteil-der-gruenderinnen-an-allen-gruenderpersonen/ , Zugriff am 22. April 2023,

Kollmann, T, Strauß, C. Pröpper,A., Faasen, C., (2022): Deutscher Startup Monitor (DSM) 2022.

Kremel, A. und Yazdanfar D. (2015), »Business Advisory Services and Risk Among Start-ups and Young Companies: A Gender Perspective«, International Journal of Gender and Entrepreneurship 7(2), 168–190

Ladwig, D.H., Wohlert, M.J. (2022): Interne Quelle des IEBD der Technischen Hochschule Lübeck, Lübeck.

Metzger, G: KfW Research (2022): KfW-Gründungsmonitor 2022 Gründungstätigkeit 2021 zurück auf Vorkrisenniveau: mehr Chancengründungen, mehr Jüngere, mehr Gründerinnen

Schell C. (2009): Gendersensible Gründungsberatung – Gründe, Reichweite, Grenzen, in Anderseck, K.; Peters, S. A. (Hrsg.): Gründungsberatung Beiträge aus Forschung und Praxis, Stuttgart.

Sternberg, R., Gorynia-Pfeffer, N., Stolz, L., Schauer, J., Baharian, A., Wallisch, M. (2022): Global Entrepreneurship Monitor Unternehmensgründungen im weltweiten Vergleich, Länderbericht Deutschland 2021/22

# COMPARATIVE ANALYSIS OF THE  INDICATORS OF THE SUSTAINABLE DEVELOPMENT GOAL 9 FOR GEORGIA, ESTONIA AND SLOVENIA

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## ABSTRACT

The paper provides an analysis of statistical indicators to discuss the progress and development of Georgia compared to Estonia and Slovenia under Sustainable Development Goal 9 - "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation". The benchmarking method is used in the research, for which Estonia and Slovenia were selected as former Soviet countries. As a result of systemic transformation, they were able to achieve economic development and EU membership in a short period. The main goal of the paper is to find differences in the structure of Georgia's economy compare to Estonia's and Slovenia's economies in the context of European industrial policy achieving the SDGs.

A comparative analysis was carried out to determine the Sustainable Development Goal (SDG) 9 of the mentioned countries, its objectives and the achievements in specific indicators, the dynamics and the differences between the countries.

The study determined that Georgia is significantly behind Estonia and Slovenia in terms of all the defined indicators in the achievement of SDG 9. Estonia leads in terms of carbon dioxide emissions and production of medium and high-tech manufacturing products, and Slovenia - in terms of Manufacturing Value Added (MVA)  per capita and availability of credit resources for small and medium enterprises. Based on the above, Georgia, in the process of developing its industrial policy, can take into account the experience of both Estonia and Slovenia in the part of the specific policy carried out to achieve high indicators and adapt it to the Georgian reality. The study is clearly focused on the study of specific countries in relation to the achievement of the SDG 9, which helps to determine the diagnosis of the industrial policy of Georgia.

*Keywords: Sustainable Development Goals, Georgia, Slovenia, Estonia, Industry*

## INTRODUCTION

To ensure Georgia's goal of joining the European Union, it is important to continuously evaluate the current situation, project the goal and determine the appropriate instruments to achieve it. This also applies to economic policy, because the European Union is primarily economic integration, which implies the framework conditions of a single economic policy in different directions. A comparative analysis of Georgia's economy with EU countries clearly shows the difference that the country must overcome in order to achieve its strategic goal. The relevance of the issue is due to the assessment of the achievement of Sustainable Development Goals.

The aim of the paper is to answer on research question - how similar is the structure of Georgia's economy to Estonia's and Slovenia's economies, in the context of European industrial policy achieving the SDGs?

The manufacturing industry exhibited a recovery from the pandemic in 2021, although the rebound has been uneven across countries, with stagnations in the least developed countries. Almost one in three jobs in the manufacturing industry was negatively impacted during the pandemic. Higher-technology industries had better performance and recovered faster, providing a strong example of how important technological innovation is for achieving Sustainable Development Goal 9 (SDG Report, 2022).

The paper provides an analysis of statistical indicators to discuss the progress and development of Georgia compared to Estonia and Slovenia under SDG 9. The theoretical background of the presented study analysed up-to-date scientific papers (Cewillini and Cinacchi 2022), and suggested research outcomes about theoretical and methodological views on SDGs - calculating and interconnections between them. In particular: Halkos, G., Moll de Alba, J. and Todorov, V. (2021) developed and introduced a new evidence-based tool for systematization measurement and benchmarking the industrial performance of economies with emphasis on their inclusive and green dimensions. The paper opens up new avenues for future research supporting new approaches for the structural transformation of economies in the context of the international 2030 agenda for SDGs.

Mantlana, KB and Maoela, MA. (2020) presented a review of relevant reports as well as scientific publications to assess the interlinkages between SDG 9 dealing with industrial innovation and infrastructure and SDGs relating to other SDG Goals.

Singh, S. and Ru, J. (2023) suggested recommendations for policymakers, researchers, and administrators to focus on promising themes such as tackling the digital divide, clean fuel and technology adoption, enhancing internet and mobile, logistic sector reforms, industrial policy reforms and technology integration – in a frame of GDS 9.

Gogu et al. (2021) suggested a study, that aims to examine the relationship between sustainable growth and some SDGs. Results showed a significant influence of the selected variables on sustainable growth in the EU.

Sebestova, J.and Skora, W. (2020) compared the Czech and Polish approaches to the circular economy employing quantitative evaluation based on primary research. The research has confirmed that there are differences between both countries concerning sustainable development goals.

In Georgia, there is a lack of scientific research particularly linked to SDG 9, but scientists study the issues of industrialization policy, research and development and entrepreneurial university issues in Georgia (Gagnidze, 2018; Seturidze and Tofuria, 2021; Lekashvili, 2019; Papachashvili et al., 2021) and Ukraine (Soboleva & Harashchenko, 2020), in whose works the role of universities in the development process of the country and a frame of Industry 4.0 and 5.0.

Based on the literature analyses, it can be concluded, that there is a lack of scientific study about achieving Sustainable Development Goal 9 for Georgia, Estonia and Slovenia. The research is clearly focused on the study of these specific countries in relation to the achievement of the SDG 9, which helps in determining the diagnose of the industrial policy of Georgia.


## METHODS AND DATA

The research goal of the study is a theoretical and statistical analysis of UNIDO data on sustainable development Goal 9 - "Industry, Innovation and Infrastructure", its progress and development for Georgia, Estonia, and Slovenia from the beginning of the XXI century till today.

Selected countries are similar to each other in terms of territory size and a small amount of population, although they also have a common historical past, which means being part of the Soviet System. So, these countries are comparable.

Also, currently, Georgia is oriented on associate membership of the European Union, while Estonia and Slovenia have been full members of the European Union since 2004. The empirical study will be based on the GAP analysis method, which will show the differences in the economic development of Georgia and the EU member states. The figures clearly show the differences in positive and normative positions of Georgia's Economy. The research outcome will play an important role in the diagnostic of the industrial policy of Georgia. The deduction method is used in the research.

The SDG 9 includes eight indicators,  of which the analysis of the relevant statistical material has a special place in the paper. A dynamic analysis of the existing indicators has been performed regarding the analyzed countries and they are determined on Global and National levels. The research is based on, United Nations, World Bank Group, UNIDO (UN Industrial Organization) and Georgian Statistical Office Data.

## COMPARATIVE ANALYSIS OF THE SDG 9 IDICATORS FOR SELECTED COUNTRIES

This part includes the comparative analysis of the indicators, that are emphasized in Georgia.

1. **Promote inclusive and sustainable industrialization and, by 2030, significantly raise the industry's share of employment and gross domestic product, in line with national circumstances, and double its share in the least developed countries** (SDG gov.ge) **-** the most important determinants are MVA per capita and MVA (Diagram 1) as a proportion of GDP (%) (Diagram 2). The target indicator for Georgia in 2020 y. was 17%; for 2030 y. - 22%; MVA per capita (constant 2015 United States dollars) : in 2020 y - 1500 GEL ($688), for 2030 y. - 2500 GEL ($1146).

Diagram 1 shows, that Slovenia's indicator is the highest and is characterized by a growing trend. In the last 21 years, the highest rate was recorded in Slovenia - 22.6%. There is the same trend for Estonia. The lowest rate for Georgia was recorded in 2000 (8%). In the conditions of such dynamics, it was not possible to reach the target indicator in 2020 (17%) due to the influence of the Covid-pandemic factor, although ensuring 22% by 2030 in the conditions of a slow growth rate is not foreseeable.
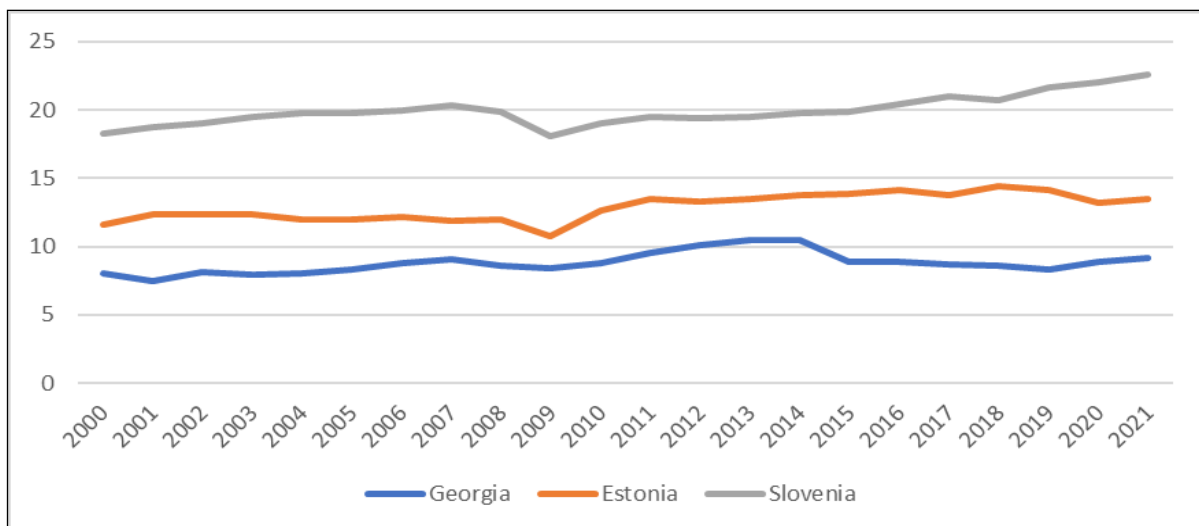


Figure 1. Share of MVA in GDP, % (2000-2021)

The MVA per capita for Slovenia has been steadily increasing since 2000, for Estonia it appears zigzag shape to some extent, although the general trend is still increasing. For Georgia, it is characterized by an insignificant increase. This statement may be caused by the deindustrialization of the Georgian economy (Lekashvili, 2022).
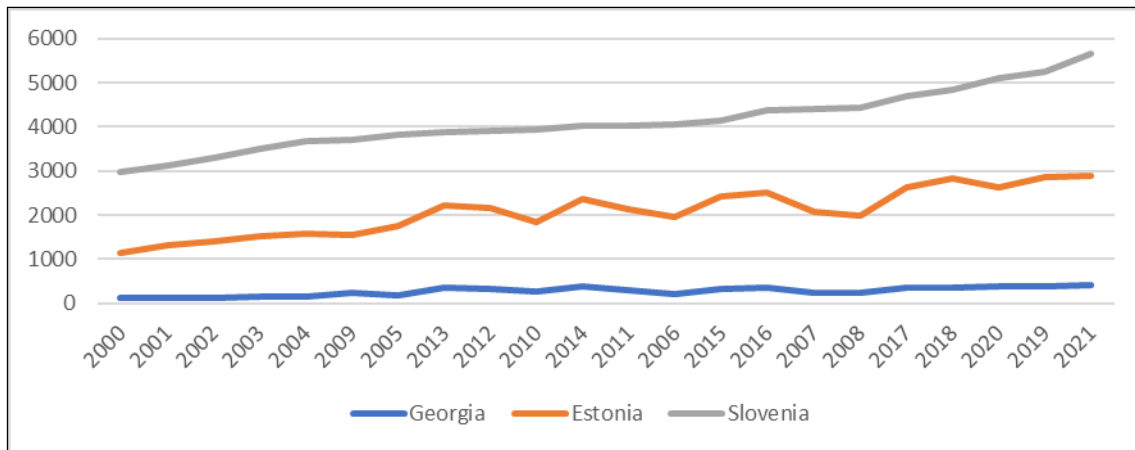
Figure 2. MVA per capita, $(2000-2021)

**2. Manufacturing employment as a proportion of total employment (%)**

The share of employees in the manufacturing industry in total employment (%) evaluates the potential of the industrial sector in the direction of utilization of labor resources from agriculture and other traditional industries. (UNSTAT) (See figure 3). Slovenia showed the highest indicator in 2000. However, since then, the data has been gradually decreasing and in 2021 it was 24.9%. The state of Estonia is the same. Georgia has seen the opposite trend: it is increasing slightly. This requires additional research based on the place of the industrial sector in the structure of the national economy and the purpose of the industrial policy for a specific country. The comparison shows that industrial policy in the EU and in Georgia have different goals due to employment.
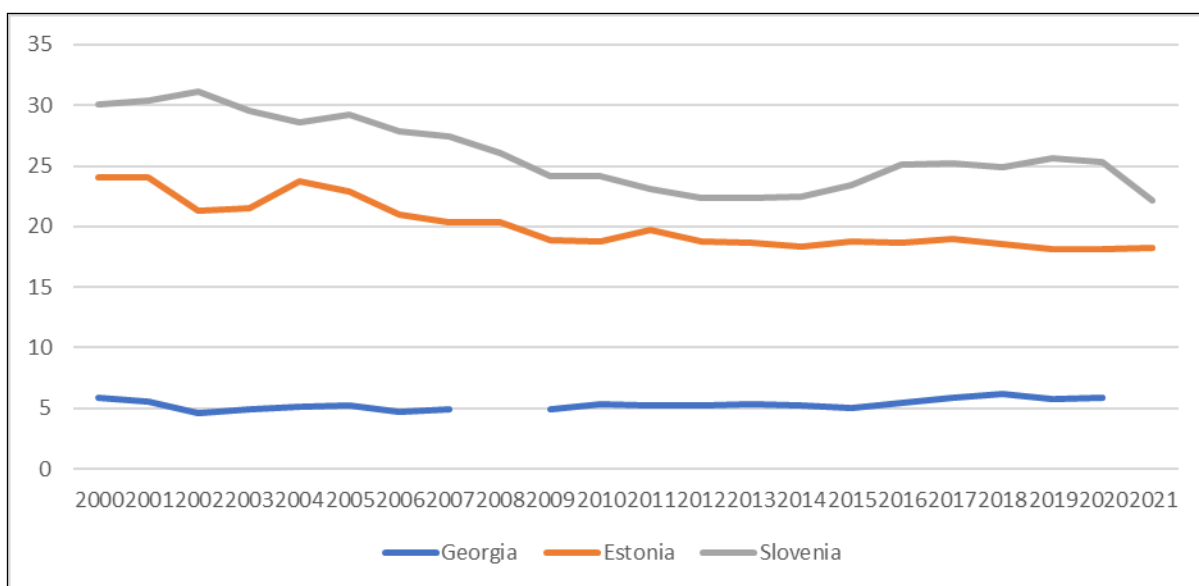


Figure 3. Share of employees in industry among total employees

**3. Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains**

**and markets** – the most important determinants are the proportion of small-scale industries in total industry value added (%) (Figure 4.) and share of small industries with loan or credit line (%) (Figure 5.). Small industrial firms are distinguished from large and medium-sized industrial firms by their types of economic organization, production capacity, size of investments and other economic characteristics. The latest UN statistics on this indicator are available for 2019 and show the highest rate of 15.4% in favor of Estonia and Slovenia. Georgia does not lag behind these countries according to this indicator (14%), but it is important to study SE considering their profile, lifespan, limitation and other factors for them.
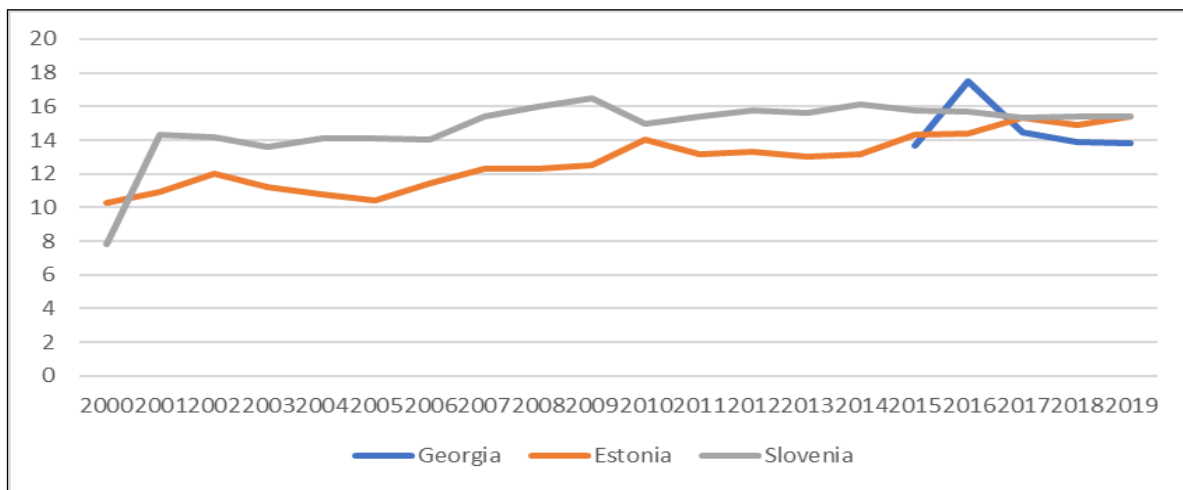


Figure 4. Share of SMEs in MVA
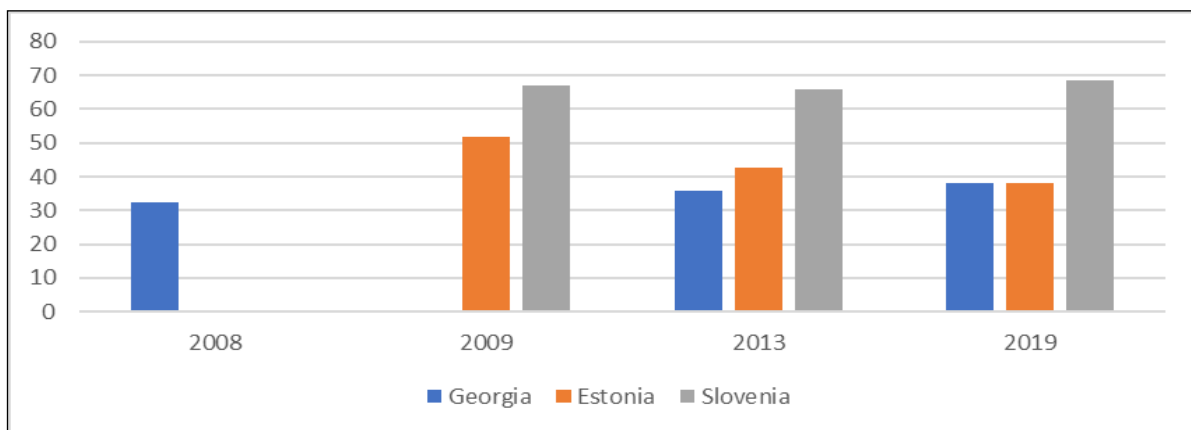


Figure 5. Share of Small Enterprises in Credit opportunities

According to the given statistics, Slovenia has the largest share (68.7%) of small enterprises with a loan or line of credit in 2021. This indicator has been increasing since 2009 (24.4% share). In Georgia, this indicator is increasing, but Estonia shows decreasing trends.

**4. By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and**

**industrial processes, with all countries taking action in accordance with their respective capabilities –** the main indicators are Carbon dioxide emissions from fuel combustion (million tons) (Figure 6.) and Carbon dioxide emissions per unit of manufacturing added value (kg CO2, 2015 constant USD) (Figure 7.)
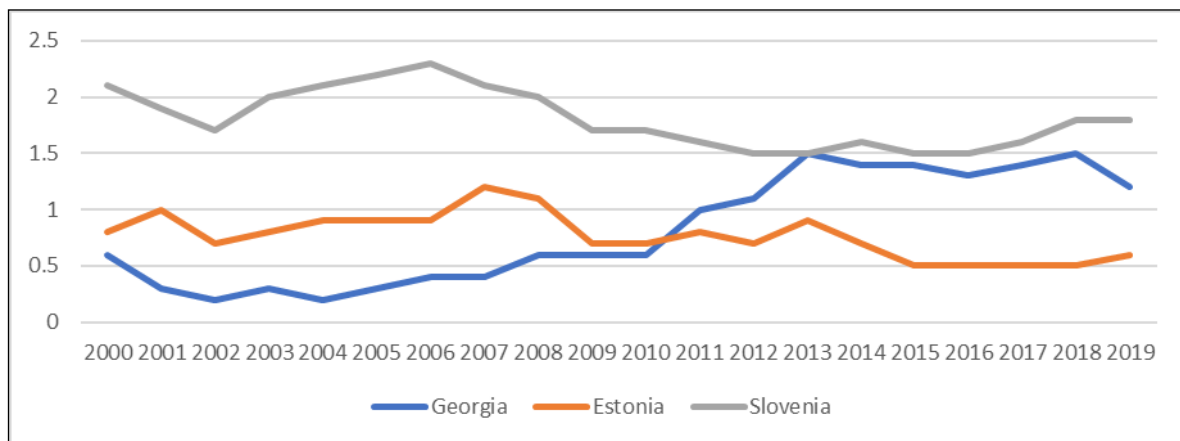


Figure 6. CO2 Emission in Using I mil. t. Fuel

As nations tend to move to higher degrees of industrialization, the manufacturing sector improves its emission intensity. However, it should be noted that structural changes and diversification of products in manufacturing can also reduce emission intensity. CO2 accounts for approximately 80% of the total greenhouse gas emissions from manufacturing operations. (UN International Recommendations on Energy Statistics).

Almost every year, Estonia shows the lowest emission level. Specifically, in 2015-2018, the lowest level of emissions took place in Estonia (0.5). Slovenia is in second place in the list of small scattering.
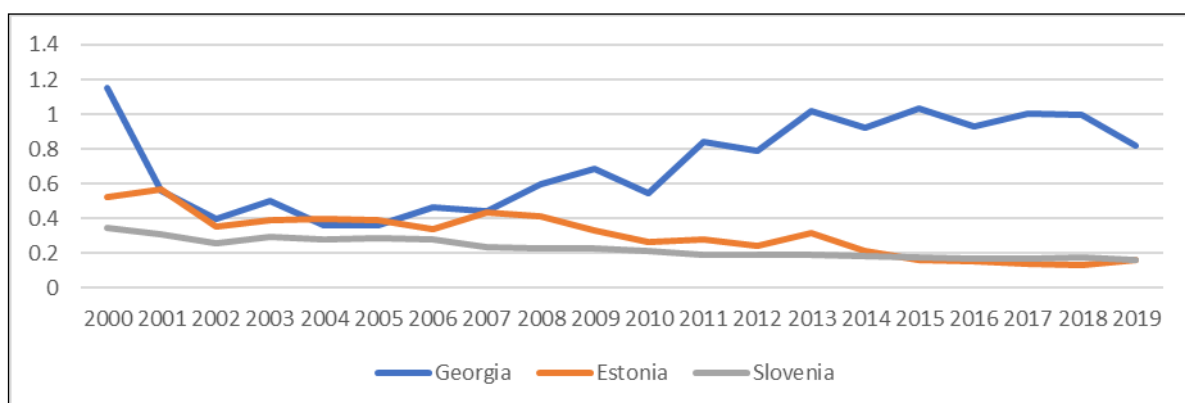


Figure 7. CO2 Emission in 1-unit MVA (2000-2019)

The level of the mentioned indicator is the highest in Georgia according to the 2019 data (0.819). In the same year, the lowest rate was presented in Estonia (0.159).

**9.5. Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending –** the main indicators are: Research and development expenditure as a proportion of GDP; Researchers (in full-time equivalent) per million inhabitants [16] and the proportion of medium and high-tech industry value added in total value added (Figure 8.).

Spending on research and development is 0.3% of the GDP in Georgia. It is noted that the 1996 data exceeds the 2020 data. Between 2003 and 2011, the mentioned data is not recorded on the data portal of the World Bank. However, the lowest rate was recorded in 2012 - 0.08%. This indicates that during this period, science almost reached the brink of destruction. [16]. For Estonia, the mentioned indicator for 2020 is 1.79%, although it is less than in 2011, which was the highest in the analyzed period (2.31%) and is under review [17]. As for Slovenia, its data in 2020 improved by 0.1% compared to the previous year and reached 2.15%. In 1996, the rate was 1.26%. It reached its maximum level in 2011 (2.56%)[18].

As for researchers (in full-time equivalent) per million inhabitants (unece.org. SDG ), for Georgia, this indicator is 3 times less than in Slovenia and is 1712 people, in Slovenia 4932, 3 people, and in Estonia - 3846 people by 2020. In this direction, against the background of the "brains" flowing out of our country under the conditions of independent Georgia, it is most important for the state to develop and implement a policy of raising the prestige and stimulation of research activities.

Often a component of industrial growth is a structural transition, which involves a shift from resource-based and low-technology to MHT activities. Modern, highly complex industrial structures provide improved prospects for the advancement of technical innovation.
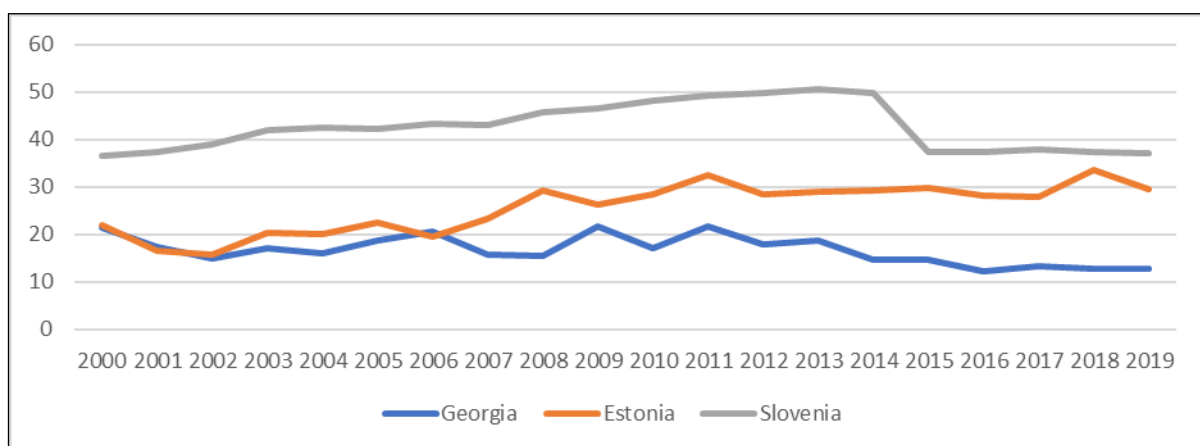


Figure 8. *MHA MVA in Total MVA (2000 – 2019) [20]*

Statistics on the proportion of HTM MVA in total MVA (%) show that Slovenia is in the leading position (50.7%), in Estonia - 29.6%. Georgia had the lowest percentage in the MHT industry (12.8%) in 2019.

## CONCLUSION AND DISCUSSION

Thus, to summarize the outcomes, the comparative analysis of the SDG 9 of Georgia, Estonia and Slovenia, shows that they have different tasks and indicators, achievements, dynamics and trends. It means that the Georgian economic structure is not similar to the benchmarking countries, and the discussion about the implementation of a common economic/industrial policy to achieve the SDG 9 is irreal.

As a result of the research, it was determined that Georgia is significantly behind Estonia and Slovenia in terms of all the defined indicators of the achievement of the SDG 9. On the other hand, Estonia leads in terms of carbon dioxide emissions and production of medium and high-tech industrial products, and Slovenia - in terms of industrial added value per capita and availability of credit resources for small and medium production. Based on the above, Georgia, in process of developing its industrial policy, can take into account the experience of both Estonia and Slovenia and create specific policies carried out to achieve high indicators as exist in EU countries and adapt them to the Georgian reality. Georgia has to implement adequate economic policy to accelerate sustainable development. Therefore, the scientifical work as a basis of recommendations for to rational and effective political-economic decisions have to be continued.

## REFERENCES

1. Lekashvili, E. (2022), "The Challenges of Georgia's Economic Policy in Achieving Sustainable Development Goal 9 in the COVID-19 Pandemic Period", 6th FEB International Scientific Conference: Challenges in Economics and Business in the Post-COVID Times, Nedelko, Z. (Ed.), University of Maribor, Faculty of Economics and Business, pp. 21-33, https://doi.org/10.18690/um.epf.5.2022.3ISBN 978-961-286-600-6 ;
2. Gagnidze, I. (2018), "The Role of International Educational and Science Programs for Sustainable Development (Systemic Approach)", Kybernetes, Vol. 47 No. 2, pp. 409-424, https://doi.org/10.1108/K-03-2017-0114;
3. General Principles of EU Industrial Policy. Article 173 of the Treaty on the Functioning of the European Union. Fact Sheets in the European Union – 2021. www.europarl.europa.eu/factsheets/en ;
4. Gogu, E; Radu, C; Deaconu, A; Frasineanu, C; Triculescu, M; Misu, S; Toma, S. (2021), "ASSESSING THE IMPACT OF CLEAN ENERGY ON SUSTAINABLE ECONOMIC GROWTH IN EUROPEAN UNION MEMBER STATES". Volume 55. Issue 4, pp. 183-197. DOI: 10.24818/18423264/55.4.21.12;
5. Halkos, G., Moll de Alba, J. and Todorov, V. (2021), "Economies' inclusive and green industrial performance: An evidence based proposed index", Journal of Cleaner Production, 279 (10 January 2021), https://authors.elsevier.com/c/1be2U3QCo9Yle1;
6. Lekashvili, E. (2019), "Management of innovations in Georgian Higher Educational Institutions: key problems with teaching economic science", Marketing and Management of Innovations, 1, pp. 281-293. https://doi.org/10.21272/mmi.2019.1-23;

7. Mantlana, KB., & Maoela, MA. (2020), "Mapping the interlinkages between sustainable development goal 9 and other sustainable development goals: A preliminary exploration". BUSINESS STRATEGY AND DEVELOPMENT. Volume 3, Issue 3, pp. 344-355. DOI: 10.1002/bsd2.100;

8. Papachashvili, N., Mikaberidze, T., Tavartkiladze M. and Roblek, V. (2021), "Industry 4.0 and the Challenges of Higher Education Programs in the Field of Business Administration", Nata, RV (Ed.), Progress in Education, Vol. 68 Chapter 7, Nova Science Publishers, Inc., New York, NY, pp. 171-202, DOI: https://doi.org/10.52305/WPPN2619;

9. Ram, R. (2022), "Prospects for attaining the multidimensional poverty target of SDG 1.2: evidence from the most recent multiyear harmonized data for 75 developing countries", Applied Economics, DOI: 10.1080/00036846.2022.2103504;

10. Cewillini, I. and Cinacchi J. (2022), "Sustainability and circular economy. A literature Review", 15th Annual Conference of the EuroMed Academy of Business. Sustanble Business Concept and Practices, EusoMed Press, pp. 170-184, https://emrbi.org/wp-content/uploads/2022/10/euromed2022-book-of-proceedings-2022-10-02-FINAL.pdf;

11. Seturidze, R. and Topuria, N. ( 2021), "A way of developing collaboration between universities and businesses in a time of COVID-19", Kybernetes , Vol. 50 no. 5, pp. 1661-1678, https://doi.org/10.1108/K-08-2020-0518;

12. Singh, S., & Ru, J. (2023), "Goals of sustainable infrastructure, industry, and innovation: a review and future agenda for research", Environ Sci Pollut Res, https://doi.org/10.1007/s11356-023-25281-5;

13. Sobolieva, T. and Harashchenko, N. (2020), "Intellectual property indicators and renewable energy trends", Polityka Energetyczna – Energy Policy Journal, Vol. 23 No. 4, pp. 17-32, https://doi.org/10.33223/epj/127911;

14. Progress Towards Sustainable Development Goals- Report of the Secretary-General (last acceded - 05.08.2022);

15. https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf (last acceded - 05.01.2023);

16. https://w3.unece.org/SDG/en/Indicator?id=124 (last acceded - 05.01.2023);

17. https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=GE (last acceded - 12.10.2022);

18. https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS (last acceded - 05.01.2023);

19. https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS (last acceded - 05.01.2023);

20. https://w3.unece.org/SDG/en/Indicator?id=124 (last acceded - 05.01.2023).

# GREEN ENVIRONMENTAL POLICY TRANSITION FOR GREEN DEVELOPMENT IN GREECE. UNDERSTANDING CITIZENS PERCEPTIONS

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## ABSTRACT

The purpose of this research is to investigate the Greek citizens' perception of Green Development, but also its correlation with the Green Deal strategy. The survey was based on an exploratory survey of 378 citizens from various regions of Greece and was conducted in 2021. We conclude that Greek citizens, when they read/hear the idea of "green development", spontaneously associate it, in order of importance, with: a) environmental protection, b) energy saving actions, c) health and quality of life and d) the sustainable use of natural resources. On the other hand, the participants do not view green growth with skepticism as they did not deal it as an inapplicable strategy and just as profit opportunity by large multinational industries and banks. Also, green development with the environment is statistically related to the age of citizens. At the same time, it is statistically significantly related to entrepreneurship and investments. Our research contributes to the national and international debate on the green and just transition of European economies based on citizens' needs and challenges emerging at national level.

*Keywords: Green Deal, Green Policy, Green Development, Just Transition, Greek citizen perceptions*

## INTRODUCTION

Nowadays, the topic of "Green Development" has emerged, as an alternative to deal with major environmental challenges, while at the same time several strategies, policies and funding opportunities support this shift to existing production and economic models (Adams, 2008; Feng et al 2017; Zhang et al 2021; Jaiwant, 2021). Climate change, the destruction of forests, and the ecosystem in general require a more responsible approach, not only from governments but also from citizens.

According to the Global Green Growth Institute, green development is "*an approach that seeks to deliver an environmentally, economically, and inclusive society. Thus, it seeks opportunities for economic growth with low carbon emissions and low climate impact, prevents or remediates pollution, keeps ecosystems healthy and*

*productive, and leads to the creation of green jobs as well as poverty reduction and enhanced social inclusio*n"
(GGGI, 2018).

In the context of the Green Growth Index (Olesen et al., 2002), which the Global Green Growth
Institute (Green Growth Index, 2019) published for the first time in 2019, the protection of natural
capital is one of the four important dimensions of green development (Acosta et al., 2020). It has
closely related links with the efficient and sustainable use of resources, green economic opportunities,
and social inclusion (Long et al., 2021). Efficient and sustainable use of resources involves using natural
capital (Fairbrass, 2020) and producing more economic value with fewer resources without
compromising the future well-being of people. Thus, it directly contributes to the protection of natural
capital, such as water, energy, land, and materials, as well as ecosystem services (Flachenecker and
Rentschler, 2018). Without the protection of natural capital, the provision and regulation of cultural
and supporting ecosystem services are at risk.

In addition, natural capital (Stebbings et al., 2021) is the core of green development due to its role in
creating new sources of growth and expanding economic opportunities in the form of green
investment and jobs, among other opportunities (Dell' Anna, 2021). Green development also
emphasizes the role of people, where social inclusion becomes a key mechanism for people not only to
contribute, maintain, and distribute economic benefits but also to protect the sources of that growth,
i.e., natural capital.

The indicators used by the Global Green Growth Institute (GGGI, 2019) for efficient and sustainable
use of resources include the use of key natural resources such as water, land, and materials (Merino et
al., 2018). Indicators for green economic opportunities include employment, innovation, investment
and trade (Bartolacci et al., 2019). These indicators are important for a low-carbon economy (Mohsin et
al., 2019; Maiorova and Belik, 2016).

The indicators for natural capital protection consist of biodiversity and ecosystem protection,
environmental quality, greenhouse gas emissions reduction, and cultural and social value (Acosta et
al., 2020; Fairbrass et al., 2020). The indicators for social inclusion consist of social equity, social
protection, gender balance and access to basic services and resources. These two dimensions and their
indicators are important for the concept of a resilient society (Atkinson et al., 2004).

The above-mentioned indicators were used to explore the interconnection of Greek citizens' views on
green growth and the way they perceive it as a concept. Job losses (Mazzucato, 2020) must be a
planning priority so that, through the creation of green employment opportunities, they bring
vulnerable social groups to the fore for a just transition from previous economic models to that of a
bioeconomy. This includes enabling decarbonization, green innovation, and all-party approaches as
part of government aid packages currently being drawn up around the world.

The main purpose of this research is to investigate the perceptions of Greek citizens regarding Green Development, as it appears in European development strategies for the years to come, under the context of a just transition, and how this transition is incorporated to particular Greek environmental policies. We argue, that our research contributes to better understanding of citizens needs that could be addressed by proposed policies, while it raises awareness in specific issues regarding green and just development in the Greek social and economic context.

## LITERATURE REVIEW

The goal of the European Green Deal (E.C., 2019) is to make Europe the world's first climate-neutral continent by 2050 (E.C., 2019). It has targets that span many different sectors, including construction, biodiversity, energy, transport, and food (E.C., 2020). The strategy includes: a) possible carbon tariffs (EC, 2019) for countries that do not reduce greenhouse gas pollution at the same rate, b) circular economy action plan (EC, 2020), c) review and possible revision of all of relevant climate-related policy instruments, d) a Farm to Fork strategy (EC, 2020; Gierling and Blanke, 2021) together with a shift in focus from compliance to performance, which will reward farmers for management and storage carbon in the soil, improved nutrient management, reduced emissions (E.C. 2019), e) the revision of the Energy Taxation Directive which looks closely at fossil fuel subsidies and tax exemptions (aviation, shipping), f) a sustainable and smart mobility strategy and g) a forest strategy (EC, 2021), which will set as key objectives the effective reforestation and the conservation and restoration of forests in Europe.

On the other hand, the concept of "just transition", which also is a core element in the Green Deal strategy, was used for the first time in the early 1990s in North America to indicate the request to prepare employee support plans affected by the implementation of environmental protection policies (Heffron and McCauley, 2022; Wang and Lo 2021; Newell and Mulvaney 2013).

The idea of funding lost jobs had been formulated quite early in the American trade union movement, and the catch-all term "just transition" provided the ideal communication cover. Since then, the meaning of just transition has broadened to include sustainable development and, in recent years, has been particularly linked to action to address climate change. All international and European texts (Stevis and Felli 2014; Rosemberg 2010) that directly or indirectly relate to climate change and measures to manage the problem mention the just transition as a requirement that should be taken into account during the planning and implementation of support policies for citizens, businesses, and areas affected by climate change measures. For example, the Paris Agreement on Climate Change (Bodansky 2016; Scott et al. 2016) strongly emphasizes in its preamble the need to take into account the "*the imperatives of a fair transition of the workforce to the new state of affairs and the creation of dignified and high-quality jobs in*

*line with nationally defined development priorities*". Similarly, in the announcement on the European Green Deal, having identified the objective of the Agreement, which is the transformation of the European Union (EU) into a fair and prosperous society with a modern, competitive, and resource-efficient economy and with zero greenhouse gas emissions by 2050, the European Commission points out that this transition must be fair, i.e., "*putting people first and taking care of the regions, sectors, and employees who will face the greatest challenges*" (Heyen et al., 2020).

Common to all these development approaches is the importance of public responsibility and the role of the state in facilitating and supporting the transition to a climate-neutral economy in the common interest.

Furthermore, Green growth is a core element in the Green Deal strategy as well leading to sustainability. Regarding green development, in Greece during the economic crisis, it was shown that the debt crisis was the result of structural weaknesses and required the reorientation of the country's policy, so it was carried out through an online public debate on the topic: "Transition to a green Greece (2010-2020)" (Hellenic Foundation for European & Foreign Policy et al., 2014). This public dialogue took place in the context of three equally important axes: economic, social, and environmental, which must be treated equally. A key tool for achieving this parity is green tax reform, which shifts the tax burden from labor to green taxes and capital. Proposals were expressed for the following areas: a) Energy, b) Agriculture - Fishing - Mining, c) Entrepreneurship, d) Housing Policy, e) Transport Policy and f) Forestry Policy - Water and Coastal Areas. Also, a report on the conclusions of the dialogue was published from Hellenic Foundation for European & Foreign Policy, detailing the proposals for the above areas with many details and multiple perspectives.

## THE RESEARCH OBJECTIVE

The main purpose of this research is to investigate the perceptions of citizens regarding Green Development in the sense mentioned and discussed in detail in the literature review section (GGGI, 2018).

Further particular aims of the research are to investigate: a) awareness about the European Green Deal; b) the citizens' opinion on the relationship between entrepreneurship and green development; c) the factors that, in the citizens' opinion, can act as inhibitors for development; and d) the will or personal planning of actions to enlist in the direction of environmental protection.

Based on the literature review, the proposals of the national and European consultations, subsidies and other financial, entrepreneurial and skills development support to businesses and households, adjusted to the demographic characteristics of Greek citizens, the following assumptions were made:

The <u>main hypothesis</u> of the survey is that citizens of all ages are aware of green development, but the majority of them do not associate it with the Green Deal.

Other hypotheses:

<u>Research Hypothesis 1:</u> $H_0$: The lower educational level of citizens increases their skepticism regarding Green Development, $H_1$: The lower educational level of citizens does not increase their skepticism regarding Green Development.

<u>Research Hypothesis 2:</u> $H_0$: Younger citizens are less likely to take part in environmental actions, $H_1$: Younger citizens are more positive in taking part in environmental actions.

## METHODOLOGY

*Sample - Survey population - Means of data collection*

Taking the objectives into account, the questionnaire was chosen as an appropriate methodological tool, which is mainly used in "domain surveys or review research", which includes the present research.

According to the principles of random stratified sampling, 12 of the 52 prefectures of the country were selected. The research sample consisted of 378 citizens throughout the Greek territory. The respondents come from different regions of Greece (urban, semi-urban, etc.), and their profile varies in terms of demographic and psychographic characteristics.

The questionnaires were distributed online, given the conditions of protection against COVID-19. The questions were formulated through the Google Form template and sent either via email or via social media (Facebook, Messenger, Viber).

The questionnaire includes sixteen (16) questions. Five (5) of them refer to citizens' profile questions and are contained in the second part. All questions are closed-ended. The closed-ended questions that participants were asked to answer were hierarchy, dichotomy, Likert scale, single correct answer, multiple choice and Thurstone scale questions.

The questions on the factors of Green Growth as perceived by citizens are in line with the objectives of the Green Deal and the Green Growth Indicators (Green Growth Index, 2018, 2019). The connection between citizens' perception and their activism in terms of the choice of themes and questions is based on the preceding literature and especially based on the public debate that preceded this research "Transition to a Green Greece (2010-2020)" (Hellenic Foundation for European & Foreign Policy et al., 2014). Finally, the reliability analysis of the items determining the factors describing green growth for citizens, was tested using the cronbach a criterion for their internal consistency, since it's value was near or over 0.7 (Siomkos and Vasilikopoulou, 2005).

*The data collection process*

Regarding the approach to the participants, the basic principles of ethics, anonymity, and voluntary participation were fully respected (Cohen et al., 2017). In many cases, it was necessary to repeat the mailing of the questionnaire or to use multiple channels for the distribution of the questionnaire. The collection of the survey data took place in November 2021. A pilot survey phase was implemented with 7-8 responses, thanks to which some ambiguities were corrected.

The questionnaire responses were automatically collected via a Google form and then downloaded in CSV format. This was followed by statistical analysis, for which the SPSS statistical software platform version 26 was used. In order to test our hypothesis, the relevant statistic analysis of descriptives, frequencies and correlations were made.

*Statistical Data Analysis*

The main statistical analyses performed to calculate the results using SPSS version 26 were the calculation of means and frequencies of the demographics, and the non-parametric Kruskal-Wallis tests. In order to answer all three (3) research hypotheses, the data were analyzed using the non-parametric Kruskal-Wallis statistical test for independent samples, because the sample did not follow a normal distribution after applying the Kolmogorov-Smirnov test ($p < .05$).

*The profile of the research participants*

In this section, the demographic characteristics of the participants are analyzed, namely gender, age, educational level, professional status, and place of residence (Table 2).

|  | Total |  |  | Total |  |
|---|---|---|---|---|---|
| Sex | N | % | Age | N | % |
| Men | 143 | 37,8 | 18-25 years old | 164 | 43,4 |
| Women | 235 | 62,2 | 26-35 years old | 37 | 9,8 |
|  |  |  | 36-45 years old | 48 | 12,7 |
|  |  |  | 46-60 years old | 116 | 30,7 |
|  |  |  | >60 years old | 13 | 3,4 |
| Place of Residence | N | % | Professional status | N | % |
| Island | 21 | 5,6 | Unemployed | 10 | 2,6 |
| Village | 33 | 8,7 | College student | 168 | 44,4 |
| Town | 25 | 6,6 | State employee | 143 | 37,8 |
| City of 50.000 inhabitants | 228 | 60,3 | Private employee | 27 | 7,1 |
| City > 50.000 inhabitants | 71 | 18,8 | Freelancer | 23 | 6,1 |
| Educational level | N | % | Retired | 7 | 1,9 |

| | | | | | |
|---|---|---|---|---|---|
| Primary school | 1 | 0,3 | | | |
| Middle school - High school | 66 | 17,5 | | | |
| VTI - PES | 9 | 2,4 | | | |
| University graduates | 161 | 42,6 | | | |
| Postgraduates | 106 | 28,0 | | | |
| Ph.D | 35 | 9,3 | | | |

Table 2. The frequency distribution of socio-demographic characteristics of the sample (N=378)

## RESULTS

The purpose of this research was to investigate the way in which citizens perceive Green Development, thus attempting to analyze: a) the awareness of citizens regarding the Green Deal; b) the factors that, in the opinion of citizens, can be obstacles to development; c) the factors that, in the opinion of citizens, may be important as policies for Green Development; and d) the desire of citizens to participate in environmental protection actions. In addition, the hypotheses that will be answered in this section concern the relationship between demographic data and citizens' awareness about Green Development.

*Citizens' awareness of the Green Deal*

The results of the survey showed that the awareness about the green deal is M=2.2, T.A.=1.248 on a 5-point Likert scale, with 2 representing "poor". Specifically, after a statistical frequency analysis, it appeared that the majority of citizens (39.9%) did not know the concept of the European Green Deal at all, while only 5.8% knew very well what the European Green Deal is (Table 3). 21.4% of participants reported having some awareness of the concept, while 21.2% reported having moderate awareness of the Green Deal.

| Awareness about the European Green Deal | N | % |
|---|---|---|
| Not at all | 151 | 39,9 |
| Poor | 81 | 21,4 |
| Average | 80 | 21,2 |
| Good | 44 | 11,6 |
| Very good | 22 | 5,8 |
| Total | 378 | 100 |

Table 3. Frequency Distribution of Citizens' Awareness of the European Green Deal

*Citizens' view of the characteristics of Green Development*

Regarding the thematic section on how citizens perceive Green Development, it appears that they associate it with many different elements beyond entrepreneurship. The statistical analysis (Table 4) showed that 57.1% of the participants perceive green development as minimizing (min=1, max=5) the use of minerals from the environment (M = 4.4, T.A. = 0.863). In addition, there was great agreement among the participants regarding their perception of green development as a factor in reducing the consumption of fossil fuels: oil, natural gas, and coal (M = 4.14, T.A.= 1.019), as a factor in increasing biodiversity (M = 4.35, T.A.= 0.956), as a factor in reducing extreme meteorological, climatic, and hydrological phenomena (M = 4.12, T.A. = 1.097), and as a factor in reducing the carbon concentration in the atmosphere (M = 4 .31, T.A. = 0.031).

| Factors | N | Mean | Std. Deviation |
|---|---|---|---|
| Minimizing the use of materials that pollute the environment | 377 | 4,40 | 0,863 |
| Mainstreaming the protection of life on Earth (biodiversity) | 377 | 4,35 | 0,957 |
| Reducing the concentration of carbon in the atmosphere | 377 | 4,31 | 1,032 |
| Reducing the consumption of fossil fuels: oil, natural gas, and coal | 377 | 4,14 | 1,020 |
| Reduction of extreme meteorological, climatic, and hydrological phenomena | 377 | 4,12 | 1,097 |
| Increasing employment in environmentally friendly sectors of the economy | 377 | 4,10 | 0,971 |
| Tackling malnutrition and hunger | 377 | 3,87 | 1,324 |
| Dealing with social, political, and economic problems on a global level | 377 | 3,76 | 1,284 |
| Global financing of $150-440 billion per year for 10 years | 377 | 3,66 | 1,131 |
| Reducing the consumption of beef and animal feed | 377 | 2,99 | 1,166 |
| Reduction in food production and water supply | 377 | 2,68 | 1,248 |

Table 4. Degree of Greek citizens' perception of the concept of Green Development (scale 1-5, where 1=Not at all and 5=Very good)

The frequency analysis shows that when Greek citizens see, read, or hear the concept of "green development," they spontaneously associate it, in order of importance (min=1, max=5) (Table 5), with: a) Environmental Protection (4.44), b) Energy saving actions (4.39), c) Health and quality of life (4.29), and d) Sustainable use of natural resources (4.24), with a grade of "Good" to "Very Good" (4-5, respectively). On the other hand, participants were not suspicious of green development, as they did not see it as a scam of large multinational industries (M = 2.05, TA = 1.22) and profits of banks (M = 2.33, TA = 1.27) or a game of multinational corporations (M = 2.17, TA = 1.315).

| Concepts/Actions | N | Mean | Std. Deviation |
|---|---|---|---|
| Environmental Protection | 377 | 4,44 | 0,909 |
| Energy saving actions | 377 | 4,39 | 0,887 |
| Health and quality of life | 377 | 4,29 | 0,984 |
| Sustainable use of natural resources | 377 | 4,24 | 1,035 |
| Creation of green investment packages | 377 | 3,83 | 1,094 |
| Taxation of polluting business activities | 377 | 3,54 | 1,265 |
| Circular economy | 377 | 3,32 | 1,314 |
| New job positions | 377 | 3,15 | 1,302 |
| Social justice | 377 | 2,90 | 1,372 |
| Investments of billions and huge profits of the Banks | 377 | 2,32 | 1,272 |
| Another speculative game of multinational corporations and the global financial elite | 377 | 2,17 | 1,278 |
| It is a fraud of the big multinational industries | 377 | 2,05 | 1,224 |

Table 5. Connection of the concept of Green Development with other concepts and actions in the minds of Greek citizens (scale 1-5, where 1=Not at all and 5=Very good)

*Correlation of citizens' skepticism about Green Development with their educational level*

After statistical analysis, it was found that there was no statistically significant difference in the averages of the suspicious attitude of citizens regarding the educational level, H(4) = 6.491, p = 0.165>0.05 (Table 6). More specifically, Postgraduates scored an average grade of M=201.50, PhD holders scored M=169.00, and university graduates scored an average grade of M=192.00.

Based on the above, the null hypothesis H0 is rejected in **Research Hypothesis 1** and the alternative hypothesis H$_1$ is verified, i.e., there is no statistically significant difference in the skepticism of citizens regarding green development depending on their educational level, and therefore the lowest educational level of citizens does not increase their skepticism regarding Green Development.

| | N | Mean Rank | sd | x2 | p |
|---|---|---|---|---|---|
| Middle School - High School | 66 | 167,2 | 4 | 6,491 | 0,165* |
| VTI - PES | 10 | 225,2 | | | |
| HEI-TEI | 161 | 192 | | | |
| Postgraduate | 106 | 201 | | | |
| Ph.D | 35 | 169 | | | |

Note. *p>0,05

Table 6. A Comparison of Mean Ranks of Perceptions of Green Development as Fraud in Terms of Educational Level

*Factors that inhibit Green Development*

The research participants considered factors related to the country's politics and the organization of the Public Administration as key obstacles to Green Development. More specifically, they largely agreed that the obstacles to green development are mainly (min=1, max=5) (Table 7): the intertwining of economic interests (M = 4.25, T.A. = 0.954), the embrace of the political and economic elite (M = 4.16, T.A. = 0.980), the corruption of the public administration (M = 4.06, T.A. = 1.039), and the poor organization and planning of investments (M = 4.11, T.A. = 0.967).

| Factors | N | Mean | Std. Deviation |
|---|---|---|---|
| The entanglement of major financial interests | 378 | 4,25 | 0,954 |
| The embrace of politics by the financial elite | 377 | 4,16 | 0,981 |
| The poor organization and planning of the required investments | 377 | 4,11 | 0,967 |
| The corruption of the Public Administration | 377 | 4,06 | 1,039 |
| The micropolitics of governments to satisfy unproductive economic units | 377 | 4,01 | 1,044 |
| The unequal distribution of EU financial resources in favor of the economic elite | 377 | 3,92 | 1,044 |
| The absence of real and timely control by the European and National Control Institutions | 377 | 3,91 | 1,049 |
| The country's fiscal deficit (public expenditure greater than public revenue due to tax evasion) | 377 | 3,85 | 1,069 |
| The country's negative trade balance (imports are greater than exports) | 377 | 3,63 | 1,075 |
| The imports of a very large part of the capital (mainly mechanical equipment) | 377 | 3,53 | 1,039 |
| Fiscal policy that integrates the value of biodiversity through ecosystem services | 377 | 3,27 | 1,200 |

Table 7. Mean Values of Factors considered as Barriers to Green Development (scale 1-5, where 1=Not at all and 5=Very much)

*Participation of citizens, in terms of age, in actions for the protection of the environment*

After a descriptive statistical analysis, it appeared that the citizens showed a moderate degree in the planning of participation in actions for the protection of the environment, as they scored an average M=3.02 (T.A.= 1.287), and in the scale of the questionnaire, 3 was equivalent to "Average". Data were analyzed using the non-parametric Kruskal-Wallis statistical test for more than two independent samples, because the sample did not follow a normal distribution after applying the Kolmogorov-Smirnov test ($p<0.05$). Table 8 presents the results of the comparisons of the average classes of planning participation in actions for the protection of the environment in terms of age. After statistical analysis, it was found that there was no statistically significant difference in means of planning citizen participation in environmental protection actions between ages, $H(4)=5.291$, $p= 0.259>0.05$.

Based on the above, the null hypothesis $H_0$ is verified in **Research Hypothesis 2,** i.e., there is no statistically significant difference in the participation of citizens in actions for the environment in

relation to their age. Thus, **younger citizens do not plan more than older ones to take part in actions for the environment.**

| | N | Mean Rank | sd | x2 | p |
|---|---|---|---|---|---|
| 18-25 | 164 | 193,3 | | | |
| 26-35 | 37 | 186,5 | | | |
| 36-45 | 48 | 193,3 | 4 | 5,291 | 0,259 |
| 45-60 | 116 | 177,2 | | | |
| >60 | 13 | 244,5 | | | |

Table 8. Comparison of Mean Ranks of Planning for Participation in Environmental Protection Actions by Age

## DISCUSSION - CONCLUSION

In this work, it appears from the results of our research that the main hypothesis is partially confirmed, since citizens of all ages who are aware of green development are at a rate of 39%, and the majority of them do not associate it with the Green Deal, but they have a positive attitude towards it. This highlights the importance of further strengthening the visibility of green growth and its separation from the Green Deal, following the initial dialogue on the issue: "Transition to a Green Greece (2010-2020)" (Hellenic Foundation for European & Foreign Policy et al, 2014).

This research also, has highlighted, the concept of Green Growth seems yet to be a fuzzy meaning on a board scale, according Adams, (2008); Feng et al (2017); Zhang et al (2021) and Jaiwant (2021).

The majority of Greek citizens perceive green development mainly as minimizing the use of minerals from the environment, as an important factor in biodiversity, but also as a factor in reducing the concentration of carbon in the atmosphere and reducing the consumption of fossil fuels such as oil, natural gas, and coal, as well as the reduction of extreme weather, climate, and hydrological phenomena. Similar conclusions were reached by Long et al. (2021). This finding is to some extent in line with the objective of the European Green Deal (E.C., 2020), which spans in many different sectors, including construction, biodiversity, energy, transport and food.

Regarding our other hypotheses we argue that there is no statistically significant difference in the suspicious attitude of citizens regarding green development according to their educational level, and therefore the lower educational level of citizens does not increase criticality and their suspicion

regarding Green Development (Research Hypothesis 1), since it follows the indicators preceded and analysed in the literature review (Green Growth Index, 2018, 2019).

There is no statistically significant difference in the participation of citizens in environmental actions in relation to their age. Thus, younger citizens do not plan more than older ones to take part in actions for the environment (Research Hypothesis 2).

Finally, the most important factors that act as policies and are related to Green Development are energy saving actions, taxing polluting business activities, and creating new green jobs and training.

Transitional programs should accommodate the spatial effects of the reorganization of economic activity to prevent drastic upheaval in local communities. Trade unions should support the role of governments in thinking ahead on ways to ensure that green renewal is co-created and co-shaped, rather than imposed without buy-in or ignored altogether. The rights of employees in the fossil fuel-based economy and the broader human right for everyone to have access to clean air, water, and natural resources are the core concepts of the Green New Deals being developed around the world. New jobs in the green sector could support a rapid recovery of these jobs. Data from the International Labor Organization shows that the transition to green production and the use of renewable energy sources could lead to an additional 24 million jobs by 2030. The "right to work, to free choice of employment, to fair and favorable conditions of work, and protection against unemployment" are enshrined in article 23.1 of the United Nations Declaration of Human Rights (United Nations 1948, UNISEF). It has since been championed by the US civil rights movement and, more recently, as part of plans for a Green New Deal program (Mazzucato and McPherson, 2018). A job guarantee program will ensure that all unemployed people have the opportunity to contribute their work to solving social challenges while the economy recovers (Tcherneva, 2018).

In particular, the role of governments is crucial at all stages of the process and at the same time multidimensional, as they can activate social dialogue with local communities, regulate industrial, climate, energy and labour policy rules, invest in infrastructure and social welfare, education, research and technology. Their mission is to reconcile the launch of appropriate measures to tackle climate change while ensuring a fair outcome for those most affected, notably workers who will lose their jobs and local communities that have been locked into harmful economic activities and must now turn to sustainable alternatives. What is unclear in all these theoretical approaches, however, is whether the fair outcome can be achieved within the existing model of economic development or whether it requires substantial changes to the rules of the game, up to and including the reorganisation of the economy.

Limitations of the research could be mentioned in terms of the conceptual content of the research, since the concepts themselves were partly unknown in their scope and the social and economic

dimension was not clear. While the concept Green Development is well known, most citizens gave it a vague and utopian content. Besides, until now there have been no clear support programs and financial instruments for both businesses and citizens. Therefore, any answers were given according to the ideology and general attitude of the respondents.

Future work could involve the investigation of entrepreneurship and green professions as they relate to citizens' awareness and their connection to green development across all three key pillars. Furthermore, the policies promoting Green Development and the opinions of citizens could be explored. Furthermore, surveys could follow for the opinion of the citizens on the proposals submitted for the way of implementing part of them and the possible modification or revision of the proposals after the progress of technology and the existence of the appropriate tools for the implementation of new politicians. However, this gap is partly covered by the present research.

# REFERENCES

Acosta, L.A., Maharjan, H., Peyriere, M. & Mamiit, R. (2020), "Natural capital protection indicators: Measuring performance in achieving the Sustainable Development Goals for green growth transition", Environmental and Sustainability Indicators, Vol.8, December, 100069, https://doi.org/10.1016/j.indic.2020.100069

Adams, B., (2008), Green Development. Environment and Sustainability in a Developing World. Imprint Routledge, 3rd Edition, London, p. 480, ISBN9780203929711.

Atkinson, A., Marlier, E. and Nolan, B. (2004). Indicators and Targets for Social Inclusion in the European Union. Journal of Common Market Studies, Vol. 42, Issue 1, pp. 1-228.

Bartolacci, F., Cerqueti, R., Paolini, A. and Soverchia, M., (2019). An economic efficiency indicator for assessing income opportunities in sustainable waste management. Environmental Impact Assessment Review. Vol.78, 106279, https://doi.org/10.1016/j.eiar.2019.05.001 (accessed 8 June 2023).

Bodansky, D., (2016). The Paris Climate Change Agreement: A New Hope? American Journal of International Law. Vol. 110 Issue 2, pp. 288- 319.

Cohen, L., Manion, L. and Morrison, K. (2017), Research Methods in Education. London: Routledge.

Dell 'Anna, F. (2021), "Green jobs and energy efficiency as strategies for economic growth and the reduction of environmental impacts", Energy Policy, Vol.149. https://doi.org/10.1016/j.enpol.2020.112031

European Commission (2019), "Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism" https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17

European Commission (2019), "The European Green Deal", Brussels, 11.12.2019 COM(2019) 640 final. https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf (accessed 17 November 2021).

European Commission (2019).The European Green Deal .COM(2019) 640 final. european-green-deal-communication_en.pdf (europa.eu) (accessed 17 November 2021).

European Commission (2020), "Launching the Just Transition Mechanism - for a green transition based on solidarity and fairness". Retrieved from https://ec.europa.eu/info/news/launching-just-transition-mechanism-green-transition-based-solidarity-and-fairness-2020-jan-15_en (accessed 9 November 2020).

European Commission (2021), "Delivering the European Green Deal" Delivering the European Green Deal | European Commission (europa.eu). (accessed 17 November 2021).

Fairbrass, A., Mace, G., Ekins,P., & Milligan, B. (2020), "The natural capital indicator framework (NCIF) for improved national natural capital reporting", Ecosystem Services, Vol. 46, https://doi.org/10.1016/j.ecoser.2020.101198

Feng, C., Wang, M. Liu, G-C., Jian-Bai Huang, J-B (2017), "Green development performance and its influencing factors: A global perspective", Journal of Cleaner Production Vol. 144, p.p. 323-333.

Flachenecker, F.,  Rentschler, J. (2018). "Investing in Resource Eciency Florian Flachenecker Jun Rentschler Editors", The Economics and Politics of Financing the Resource Transition.ed.: Springer https://doi.org/10.1007/978-3-319-78867-8

Gierling, F., Blanke, M. (2021), "Carbon reduction strategies for regionally produced and consumed wine: From farm to fork", Journal of Environmental Management, Vol. 278, Part 1. https://doi.org/10.1016/j.jenvman.2020.111453

Global Green Growth Institute (GGGI), (2018), "Annual Report 2017". https://gggi.org/site/assets/uploads/2018/05/GGGI-2017-Annual-Report_WEB.pdf (accessed 17 November 2021).

Green Growth Index (GGGI), (2019), "Technical Report No. 5 GREEN GROWTH INDEX Concept, Methods and Applications" Green-Growth-Index-Technical-Report_20191213.pdf (gggi.org)

Greenpeace, (2020), "The Fair Green Transition to the next day", https://www.greenpeace.org/static/planet4-greece-stateless/2020/11/47ffee87-20201111_greenpeace-proposals_green_and_just_recovery.docx.pdf (accessed 17 November 2021).

Heffron, R.J. and McCauley, D. (2022). The 'just transition' threat to our Energy and Climate 2030 targets. Energy Policy. Vol. 165, https://www.sciencedirect.com/science/article/abs/pii/S0301421522001744 (accessed 8 June 2023).

Hellenic Foundation for European & Foreign Policy-ELIAMEP, HELLENIC SOCIETY for Environment and Culture-ELLET and European Center for Environmental Research and Training-EKEPEK of Panteion University (2014). "Public Dialogue Transition to a Green Greece (2010-2020)". Results report. https://www.eliamep.gr/wp-content/uploads/2014/12/ekthesi.pdf

Heyen, D.A., Menzemer, L., Wolff, F., Beznea, A. & Williams, R. (2020), "Just transition in the context of EU environmental policy and the European Green Deal Issue Paper under Task 3 of the 'Service contract on future EU environment policy' March" .https://ec.europa.eu/environment/enveco/growth_jobs_social/pdf/studies/just_transition_issue_paper_final_clean.pdf

Hulin, C., Netemeyer, R., & Cudeck, R. (2001), "Can a Reliability Coefficient Be Too High?" Journal of Consumer Psychology, 10 (1/2), 55–58. http://www.jstor.org/stable/1480474

Jaiwant, S. V. (2021), "Green Environmental Policy: A Step towards Sustainability: A Step towards Sustainability". SPAST Abstracts, 1(01). Retrieved from https://spast.org/techrep/article/view/837

Long, R., Li, H., Wu, M., Li, W. (2021), "Dynamic evaluation of the green development level of China's coal-resource-based cities using the TOPSIS method", Resources Policy, Vol. 74. https://doi.org/10.1016/j.resourpol.2021.102415

Maiorova, T. and Belik, I., (2016). Indicators of Environmental Performance and Energy Efficiency of Businesses under the Low-Carbon Economy Development. Proceedings of the 2016 Conference on Information Technologies in Science, Management, Social Sphere and Medicine. Available Online May 2016. https://www.atlantis-press.com/proceedings/itsmssm-16/25856086 (accessed 8 June 2023).

Mazzucato, M. and McPherson, M. (2018), "The Green New Deal: A bold, mission-oriented approach", UCL Institute for Innovation and Public Purpose Policy Brief Series (IIPP PB 04). https://www.ucl.ac.uk/bartlett/public-purpose/publications/2018/dec/green-new-deal-bold-mission-oriented-approach. (accessed 22 November 2021).

Mazzucato, M. (2020), "Avoiding a Climate Lockdown. This article was originally published by Project Syndicate and reposted by World Business Council for Sustainable Development (WBCSD)" https://www.project-syndicate.org/commentary/radical-green-overhaul-to-avoid-climate-lockdown-by-mariana-mazzucato-2020-09 (accessed 20 November 2020).

Merino, A. S, Baldi, M.G, Gunderson, I., Oberle, B., (2018). Articulating natural resources and sustainable development goals through green economy indicators: A systematic analysis. Recourses Conservation and Recycling. Vol. 139, p.p. 90-103. https://doi.org/10.1016/j.resconrec.2018.07.007. (accessed 8 June 2023).

Mohsin, M., Rasheed, A., Sun, H., Zhang, J., Iram, R., Iqbal, N. and Abbas, Q., (2019). Developing low carbon economies: An aggregated composite index based on carbon emissions. Sustainable Energy Technologies and Assessments. Vol. 35, p.p. 365-374.

Newell, P. and Mulvaney, D., (2013). The political economy of the 'just transition'. The Geographical Journal. Vol. 179, Issue 2, p.p. 132-140.

Olesen, J.E.,Petersen, B.M., Berntsen, J., Hansen, S., Jamieson, P.D., Thomsen, A.G. (2002), "Comparison of methods for simulating effects of nitrogen on green area index and dry matter growth in winter wheat". Field Crops Research. Vol. 74, Issues 2–3, 15 March 2002, Pages 131-149. https://doi.org/10.1016/S0378-4290(01)00204-0

Rosemberg, A., (2010). Building a Just Transition: The linkages between climate change and employment. International Journal of Labour Research; Vol. 2, Issue 2, 125-161.

Scott, D., Hall, M.C., and Gössling, S., (2016). A report on the Paris Climate Change Agreement and its implications for tourism: why we will always have Paris. Journal of Sustainable Tourism. Vol. 24, Issue 7, p.p. 933-948.

Siomkos, G. and Vasilikopoulou, A., (2005). Implementation of Analysis Methods in Market Research. Stamoulis, Athens.

Stebbings, E., Hooper, T.,  Austen, C.M, Papathanasopoulou, E. & Yan,X, (2021), "Accounting for benefits from natural capital: Applying a novel composite indicator framework to the marine environment", Ecosystem Services,Vol.50. https://doi.org/10.1016/j.ecoser.2021.101308

Stevis, D., and Felli, R., (2014). Global labour unions and just transition to a green economy. International Environmental Agreements: Politics, Law and Economics. Vol. 15, p.p. 29–43.

Tcherneva, P. R. (2018), "The job guarantee: Design, jobs and implementation. Levy Economics Institute" Working Papers Series (No. 902). http://www.levyinstitute.org/publications/the-job-guarantee-design-jobs-and-implementation. (accessed 12 November 2020).

United Nations (1948), "Universal Declaration of Human Rights", https://www.un.org/en/about-us/universal-declaration-of-human-rights (accessed 20 November 2020).

Wang, X., Lo, K., (2021). Just transition: A conceptual review. Energy Research & Social Science. Vol. 82, https://www.sciencedirect.com/science/article/abs/pii/S2214629621003832 (accessed 8 June 2023).

WWF Solutions for climate change. Sustainability Vision for Greece 2050, (2008), "WWF Greece Policy Brief, Athens October" https://contentarchive.wwf.gr/images/pdfs/2050-WWF-low-carbon-vision-for-Greece-PolitikiSynopsi.pdf (accessed 17 November 2021).

Zhang, S., Zihao Wu, Z., Wang, Y., Hao, Y. (2021), "Fostering green development with green finance: An empirical study on the environmental effect of green credit policy in China". Journal of Environmental Management, Vol. 296, 113159.

# MISSION AND VISION IN UNIVERSITY STRATEGIES: SMALL EUROPEAN COUNTRIES

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## ABSTRACT

The aim of this paper is to clarify based on the literature the meanings and use of the main strategic statements conceptually and to study their use in practice. The focus in this paper is on mission and vision statements of universities in small European countries. The Europe means here widened Europe and contains Georgia, Armenia, Azerbaijan and Israel. The small country is defined as having population below 12 million persons.

The initial sample of strategies and statements resulted from the search of 240 universities. Content analysis was used. The categories for coding, 9 for missions and 10 for visions, were based on the literature overview.

The general content of two main strategic statements was described, both the frequency of use the categories over the set of universities and the distribution of statements by the number of categories. The last gives possibility to compare how detailed the statements are.

The results clarify the use of strategic statements in the practice of strategic management of universities, help the practitioners to focus on the relevant questions of strategy development, and pose the future research questions.

*Keywords: strategy, statements, mission, vision, university, small European countries*

## INTRODUCTION

The presence of mission and vision or their equivalents is almost unavoidable in any organization's strategic management (Khalifa, 2011). The statements can be claimed to be pervasive in any strategy-building similarly to the competition that influences businesses, non-for-profit organizations, government agencies (Porter, 2008) and higher education institutions (HEI).

However, the meanings of the concepts and their use in practice are remarkably diverse (Alegre et al, 2018 and George et al, 2023), may depend on the type of organization and on the context. The aim of this paper is to clarify based on the literature the meanings and use of the terms conceptually and to study their use in practice. The focus in this paper is on mission and vision statements of universities in small European countries.

We will see that an organization (university) may have strategic statements at least seemingly independent of each other, they may be formulated so that their sequence is meaningful and one of three is dominant determining the content of others following, or they may be united under one heading that may be any of three: purpose, mission or vision. In some cases, organizational values are also part of some of statements above but in most cases they are formulated separately. They remain out of the scope of this study.

The issue studied in the paper is topical for several reasons. First, strategy's fundamental role when explaining and enhancing the probability that a particular organization has sustainable competitive advantage. Strategic statements are the most important instruments of strategic management (Alegre et al, 2018).  Second, universities are the most important sources of competitiveness of countries and their effectivity is at least partly determined by their strategy and its implementation. Third, small countries are small only when considered separately. The group's summary population is almost 190 million persons, more than twice of that in Germany. Fourth, the structure of the economies (exports and imports versus GDP) of small countries makes their environment and their stakeholders' requirements relatively much more international compared to big countries. That may be reflected in the contents of strategic statements. Fifth, the smallness of countries' markets may influence the optimal structure of the programs. Deep specializations that are characteristic in big countries at least on the masters' level may be suboptimal in small countries. Again, the markets' specific features may be reflected in the contents of strategic statements. Sixth, practical experience of strategy development has shown that the diversity of opinions about the "correct" use of strategic statements may become an obstacle in strategy process of an organization. The clarity with statements' structure and their place in strategy would help to plan and manage the strategy process more effectively.

The paper begins with short literature overview and description of the data set used. The results of the study are presented in the parts titled main strategic statements, mission, and vision. The paper ends with summary and discussion.

## LITERATURE OVERVIEW

Purpose, mission, vision, strategic intent, narrative and sometimes some paragraphs with no name are integral parts of strategy in literature and in practice where the organizations' main features and future are envisioned. However, their use depends considerably on the personal views of the users, the concepts are fuzzy and frequently overlapping. In this short literature overview the focus is on the higher education sector.

*Mission and vision in general strategy literature*

The important questions are what the mission and vision (and purpose) are, including their content, why they exist, how they are related to each other and to their substitutes and complements, which component they have, and how should they be presented. They may be formulated as three independent statements as Fitzsimmons et al (2022) describe for Southwest Airlines; They may be included under the heading of mission, as in Alegre et al (2018) or of purpose as attempted by George et al (2023). In practice, all three may be united also under the title of vision, as it has been done in the case of Zagreb University or Reichman University. Wide diversity can be observed in the formulation of strategic statements. This applies also to the sequence of statements in their strategic papers where any of three may be the "first".

Strategic statements serve for guiding the strategic and stakeholder management (Alegre et al, 2018), they are instrumental in strategy process and in strategic communication (Fitzsimmons et al, 2022). The basic question connected to the strategies, and therefore to strategic statements, is to explain and enhance organization's sustainable superior performance (Barney et al, 2021, p. 1937). For further research one must keep in mind that "performance" is an ambiguous term (Peteraf, Barney, 2003) and the topic is not in focus here. Earlier studies on the topic are Bart and Baetz, (1998), Robert (1998), and Bartkus et al (2006).

Mission and vision are frequently connected or sometimes even substituted for and by purpose that becomes then a key term when describing the concepts. As George et al (2023, p. 1842) describe, the purpose may have two considerably different meanings. The first is the umbrella term uniting mission, vision and in some cases also strategic values. In this case it is neutral. The second is value-based (duty-based in their terminology) purpose connected to the seemingly contradicting views on share- and stakeholder roles and considering the greater aims of organizations (profit versus beyond the profit). In this case the purpose determines to the great extent the contents of strategic statements. In both cases the purpose may be stated separately or embedded into the strategic statements.

Alegre et al (2018) distinguish four major thematic areas in mission statement (used as umbrella term for all statements in the paper) research: statements development, statements' components, impact on employees (most probably other stakeholders should be added here), and statements' impact on performance. Frequently cited sources on development of statements are Campbell and Yeung (1991) and Hitt (1992). More dynamic and engaging wider range of stakeholders' views is presented by Koch et al (2015). The development of the vision statements is main topic in Collins and Porras (1996), Davidson (2002) and Kim and Mauborgne (2002). Very interesting but somewhat separate view is given in Hamel and Prahalad (1989).

A founding standard for the research on the content of (mission) statements was set by Pearce and David (1987). They proposed eight components: customers and markets; products and services; geographic zone; core technologies; survival, growth and profitability; company philosophy; self-concept; public image. David (1989) added concern for the employees and Bart (1997) widened and restructured the menu and suggested even 25 possible components.

Impact on employees and other stakeholders together with the strategic statements impact on the performance of organizations (see a recent paper by Contreras-Pacheco et al, 2022) remain outside of the scope of present paper.

*Mission and vision in textbooks*

The practice of strategic management is most probably heavily influenced by the views presented in the strategy textbooks. The diversity is represented also in 13 textbooks that were studied in this respect (Table 1).

Ten of these textbooks start the topic area with discussion of mission, in three of these the missions' content also covers vision, values, or stakeholder view. Three textbooks start the topic area with vision, in two cases the vision also contains elements that are frequently considered to belong into mission. In one of cases the vision is clearly dominating, and the mission is prescribed for the use of corporate structural units only. The result reflects the variety of views and diversity of practices but also the dependence of the choices made by the structure of organization.

*Mission and vision in university strategy literature*

The literature on strategic statements of universities is not very developed being mostly devoted to the specific groups of universities. The search with keywords "strategic statements of universities" over all fields gives 218 results from Web of Science (WoS) core collection (13.06.2022), 167 of these have at least one citation. In the categories Educational Research, Management, Business, Economics, Business Finance and Public Administration WoS has 114 articles, 79 having at least one citation.

|  | Purpose | Mission | Vision |
|---|---|---|---|
| Harrison, John (1994) | General term or profit vs purpose | 1. Overall purpose | 2. May be part of mission |
| Pearce, Robinson (2003) | NA | 1. Includes expectations of stakeholders | 2. May be part of mission, short if separate |
| de Wit, Meyer (2005) | Reason for existence or profit vs purpose | 1. Business principles, bases for strategic choices | 2. Outlines the desired future, provides the aim |
| Johnson, Whittington, Scholes (2011) | Umbrella, presented in vision, mission, values | 1. Clarifies the purpose | 2. Desired future state |

| Grant and Jordan (2012) | General term or profit vs purpose | 1. Organisational purpose | 2. Projection of future |
|---|---|---|---|
| Pitt, Koufopoulos (2012) | NA | 1. Purpose is called mission | 2. Intended future |
| Coulter (2013) | NA | 2. Organizational units have | 1. Leader centric, future and mission |
| Carpenter, Sanders (2014) | Umbrella | 2. Stakeholder view, include values and purpose | 1. Long-term future |
| Grant (2016) | General term or profit vs purpose | 1. = purpose | 3. Projection of future |
| Thompson, Peteraf, Gamble, Strickland (2016) | < mission | 2. Scope and purpose | 1. Aspiration and direction |
| Barney and Hesterly (2019) | Long-term purpose = mission | 1. Umbrella, mission, values, vision | ? |
| Lynch (2021) | Umbrella | 1. Mission and direction | 2. Picture of future |
| Rothaermel (2021) | General term | 2. Range of activities | 1. Aspiration and greater sense of purpose |

Table 1. Main notions of strategic statements in textbooks.

Source: textbooks above, author's interpretation.

One strand of literature is market specific. For example, Palmer and Short (2008) study mission statements in US Colleges of Business, Fiset and Haji (2022) study non-US International Business Schools, Seeber et al (2019) considered mission statements of universities in UK, Arias-Coello et al (2020) the missions of Spanish universities, Giusepponi and Tavoletti (2018) mission statements of Italian universities. Mostly, some form of content analysis is used to answer the research questions.

The second strand is focused on the "top" universities and their strategic statements. Breznik and Law (2019) and Bayrak (2020) discuss top-ranked universities missions globally, Olusola et al (2022) in Africa,

Third, most interesting but diverse strand of literature studies the relationship of strategic statements with different characteristics (for example type of performance). Morphew and Hartley 82006) find evidence of the dependence on the institutional type, Stensaker (2015) connects them with understanding of university dynamics, Fumasoli et al (2020) with wider topic of positioning, Hall and Lulich (2021) study the relationship of strategic statements with innovation. The topics in this strand may belong to any area of strategic thinking but the papers taken together do not form a coherent body of literature except that they tend to follow ideas put forward earlier in corporate strategy literature.

In all three groups of literature (general, textbooks and HEI specific) the concepts are mainly treated as if it were possible to give unique recipe for the use of the concepts (statements) in the context of strategy. However, Nouri and Soltani (2017) have found that differences exist at least between industries. In addition, the differences may arise from the stage of strategy process, the level of strategy (corporate, business, functional) and the structure of an organization, the stage of organization's or market's and industry's life cycle and the interplay between organization and its surroundings both in the sense of strategic fit and communication.

## MAIN STRATEGIC STATEMENTS

The sample contains universities located in small European countries. The Europe means here widened Europe and contains Georgia, Armenia, Azerbaijan, and Israel. The small country is defined as having population below 12 million persons.

Altogether, 40 countries are included into the set. Overall population in these countries is approximately 190 million persons, and the number of HEIs over 1400, approximately one per 133 thousand persons (for comparison, Germany has one HEI per approximately 200 thousand persons). The number of HEI-s is largest in Portugal (100) and the smallest in Vatican and San Marino (1).

From all HEIs of small European countries were taken into sample those that are included into at least one of three major ranking by QS, THE, or ARWU (213 HEIs) or have accredited unit in business by EFMD, AACSB, or AMBA (90 HEIs). In total, 240 HEIs were included in initial sample.

All webpages of these HEIs were carefully searched through and the texts of mission/vision statements and strategies were copied if available. If it was impossible to find statements in the webpage, the strategies were double checked – it was also the case when it was impossible to understand exactly what the university keeps in mind with the statement. In these cases, the texts are taken from the strategy papers. The resulting dataset was 126 strategies, 134 mission statements, 6 purpose statements, 15 mixed mission/vision statements, 126 vision statements, 24 vision/mission statements and 4 statements under some other title. In the case of 102 HEIs clearly stated pair of mission and vision statements was available.

## MISSIONS

The mission statements vary in their length and coverage of topics. For example, in Jyväskylä University the statement is "We are a university with societal impact". In the case of Jyväskylä University of Applied Sciences it is even shorter: "Creating competence". At another end of the mission-strategy continuum is Uppsala University where the whole strategy document is titled

"Uppsala University: Mission, goals and Strategies". The 15 pages document does not have mission statement separated from the remainder of the text.

Coding categories in this preliminary content analysis was based almost directly on nine components Pearce and David (1987) and David (1989). Only small modifications were used: survival, growth and profitability were united into the component "continuity" and other stakeholders were added to employees under the heading "stakeholders". The components used were customers/markets, products/services, geographic zone, technology, continuity, philosophy, self-concept, public image, stakeholders/employees.

Table 2. No of occurrences of

the categories in missions

| Category | No of missions |
|---|---|
| Customer/Market | 8 |
| Products/Services | 108 |
| Geography | 53 |
| Technology | 8 |
| Continuity | 8 |
| Philosophy | 70 |
| Self-Concept | 59 |
| Public image | 0 |
| Stakeholders | 70 |

Table 3. The distribution of

missions by the number of categories

| No categories | No missions |
|---|---|
| 0 | 0 |
| 1 | 6 |
| 2 | 22 |
| 3 | 50 |
| 4 | 30 |
| 5 | 9 |
| 6 | 3 |
| 7 | 0 |
| 8 | 0 |

Source: author's coding and calculation based on the sample of missions of universities.

In some cases, it is complicated to decide during the coding process to which category a particular component of the mission may belong. Particularly problematic has been to distinguish the philosophy and self-image – in some cases it is very clear but frequently the used wording leaves the options open.

Two descriptive statistics are used for the overview (Table 2 and Table 3) of the sample missions: the number of occurrences of the components in 134 mission statements and the distribution of the number of components in mission statements.

Very few mission statements specified the customers and markets for the university. Based on the wording, the students for example are more frequently seen as stakeholders. For example, Casselt University (Belgium) states that "Our students, staff, researchers and alumni are both *able* and *willing* to make our society smarter, more agile and better." At the end of the sentence one can also find an element of the purpose in this statement. Market means mostly the level of higher education programs. In some cases, it is not clear where is the border of product and market.

The highest number of missions contained a component describing their products/services. However, in most cases the role of these parts of the statement is to make belonging to higher education explicit. Only few universities added something to the education and research. Frequently it is so called "third mission" as in the case of BI Norwegian Business School with the corresponding parts of mission "We fulfill our mission … through internationally acclaimed research, high quality education and close interaction with business and society". In most cases this component does not differentiate the universities.

The geography of activities is described in some form in 53 missions. However, universities are not very precise in this respect and do not refer to the types of activities. Frequently the mission jumps from the local surroundings to the "international", in some cases even to "global".

Technology, continuity, and public image are the components most rare in mission statements. Most diverse components are philosophy and self-concept. The problem with these components is that frequently it is not very clear where the border between the two goes. Also, the wordings are too diversified to make conclusions here. The concepts must be redefined for the further research.

## VISIONS

The number of visions available for analysis was 126. The variety of the length of the text is approximately of the same range as in the case of missions. An example of the short vision is that of the Technological University of Dublin – "Create a Better World Together". In most cases the vision is at least one full (and frequently long) sentence. However, the universities act differently compared to textbook suggestions. It turns out that when we compare visions and missions of the same universities then in 47 cases the vision's text is longer and in 60 cases it is shorter than corresponding mission. In 19 cases two statements had approximately same size.

Same categories for coding were used in the case of visions to have better comparability. The only added category is "aspiration". The overview of occurrences and the distribution of visions by the categories included is given in Table 4 and Table 5.

The lowest frequency of use had again technology (if we consider the use of it in universities). In average (influence of longer visions), the use of categories in visions is more evenly distributed than in the missions. In some cases, the universities seem to have better picture about the future (vision) compared to the present (mission). As in the case of missions, the number of visions with clear view on customers/markets was low. Another less-used category is continuity. However, in visions it is much more frequent than in missions. The future view on the public image of the university is

mentioned in 28 visions, up from 0 in the case of missions. Five categories are mentioned at least in 35 visions making the distribution more even than in the case of missions.

Table 4, No of occurrences of

the categories in missions

Table 5. The distribution of visions by the

the number of categories

| Category | No of missions |
|---|---|
| Customer/Market | 15 |
| Products/Services | 58 |
| Geography | 52 |
| Technology | 2 |
| Continuity | 15 |
| Philosophy | 31 |
| Self-Concept | 45 |
| Public image | 28 |
| Stakeholders | 35 |
| Aspiration | 69 |

| No of categories | No missions |
|---|---|
| 0 | 0 |
| 1 | 15 |
| 2 | 21 |
| 3 | 35 |
| 4 | 31 |
| 5 | 5 |
| 6 | 4 |
| 7 | 2 |
| 8 | 0 |
| 9 | 0 |

Source: author's coding and calculation based on the sample of missions of universities

## SUMMARY AND DISCUSSION

The missions and visions of a sample of universities domiciled in small European countries were studied in this paper. Small European country is defined here as having population below 12 million persons. Israel, Georgia, Armenia and Azerbaijan are included. The university is defined as a higher education institution that is included into one of three major rankings (QS, THE, ARWU).

Only 56% of universities had their missions (easily) available either on the webpage or in their strategy. The visions were available in the case of 52,5% universities. For the further study, the universities must be connected directly to increase the number of statements available.

The distribution of missions and visions of the use of categories in the statements was approximately similar. Technology was the most unfrequently used category in statements. In the case of missions, the most frequently used categories were products/services, philosophy, and stakeholders. In the case of visions, most frequently used categories were aspiration, product/services, and geography. The vision about public image and continuity was much more frequent than the use of categories in missions.

For the further research philosophy and self-image must be redefined, as it is complicated to distinguish between them, category products/services needs more detailed approach, and the

customer/market must be reinterpreted, for example BA, Master, Executive Education, reference to geography, and distinguishing reference and impact zones and market.

Further research will include in addition to universities the level of schools, to the ranked universities non-ranked ones will be added, the relationship of the statements and the profile of universities should be studied, connection with (research) productivity, and performance. For that the meaning of "performance" must be made clearer.

## REFERENCES

Alegre, I., Berbegal-Mirabent, J., Guerrero, A., and Mas-Machucha, M. (2018). The real mission of the mission statement: A systematic review of the literature. Journal of Management and Organization, Vol. 24, No. 4, pp. 456-473.

Arias-Coello, A., Simon-Martin, J. and Sanches-Molero, JLG. (2020), Mission statements in Spanish univerisities. Studies in Higher Education, Vol.45, No. 2, pp. 299-311.

Barney, J. B. and Hesterly, W. S. (2019), Strategic Management and Competitive Advantage, 6th ed., Pearson, London.

Barney, J. B., Ketchen, D. J., and Wright, M. (2021), Resource-based theory and value creation framework. Journal of Management, Vol 47, No 7, pp. 1936-1955.

Bart, C. K. and Baetz, M- C. (1998), The relationship between mission statements and firm performance: an exploratory study. Journal of Management Studies, Vol. 35, No. 6, pp. 823-853.

Bartkus, B., Glassman, M., and McAfee, B. (2006), Mission statements quality and financial performance. European Management Journal, Vol. 24, No. 1, pp. 86-94.

Bayrak, T. (2020), A content analysis of top-ranked universities' mission statements from five global regions. International Journal of Educational Development, Vol 72, article 102310, 10.1016/j.ijedudev.2019.102130.

Breznik, K. and Law K. M. Y. (2019), What do mission statements reveal about the values of top universities in the world?, International Journal of Organizational Analysis, Vol. 27, No. 5, pp. 1362-1375.

Campbell, A. and Yeung, S. (1991), Creating a sense of mission, Long Range Planning, Vol. 24, No. 4, pp. 10-20.

Carpenter, M. and Sanders, G. (2014), Strategic Management: Concepts and Cases, Pearson Education, Harlow, UK.

Collins, J. and Porras, J. (1996), Building your company's vision, Harvard Business Review, September-October, pp. 65-77.

Contreras-Pacheco, O. E., Pirazán Parra, A. and Villareal Pinzón, M. (2022), Mission, vision, and value appropriation: A correlation análisis, Cuadernos de Administración, Vol. 38, No. 74, https://doi.org/10.25100/cdea.v38i74.11955.

Coulter, M. (2013), Strategic Management in Action International Edition, 6th ed, Pearson, Boston, MA.

David, F. R. (1989), How companies define their mission, Long Range Planning, Vol. 22, No. 1, pp. 90-97.

Davidson, H. (2002), The Commited Enterprise: How to Make Vision and Values Work, Butterworth Heinemann, Oxford, UK.

Fiset, J. and Al Haji, R. (2022), Mission statement content and the signalling of institutional performance: an examination of non-U.S. international business schools, Academy of Management Learning ja Education, vol. 21, No. 2, pp. 188-208.

Fitzsimmons, A. B., Qin, Y. S., and Heffrom, E. R., (2022), Purpose vs mission vs vision: persuasive appeals and components in corporate statements. Journal of Communication Management, Vol. 26, No. 2, pp. 207-219.

Fumasoli, T., Barbato, G. and Turri, M. (2020), The determinants of university strategic positioning: a reappraisal of the organization, Higher Education, Vol. 80, No. 2, pp. 305-334.

Grant, R. M. (2016), Contemporary Strategy Analysis, 9th ed, Wiley, Chichester, UK.

Grant, R. M. and Jordan, J. (2012), Foundations of Strategy, John Wiley & Sons, Chichester, UK.

Hall, R. and Lulich, J. (2021), University strategic plans: what they say about innovation, Innovative Higher Education, Vol. 46, No. 3, pp. 261-284.

Hamel, G., Prahalad, C. K. (1989), Strrategic Intent, Harvard Business Review, May-June, pp. 64-65.

Hitt, M. A. (1992), Mission statements: importance, challenge and recommendations for development. Business Horizons, Vol. 35, No. 3, pp. 34-42.

Johnson, G., Whittington, R., and Scholes, K. (2011), Exploring Strategy: Text & Cases, 9th ed., Financial Times Prentice Hall, Harlow, UK,.

Khalifa, A. S. (2011), Three Fs for the mission statement: what's next?, Journal of Strategy and Management, Vol. 4, No. 1, pp. 25-43.

Kim, C. W. And Mauborgne, R. (2002), Charting your company's future, Harvard Business Review, June, pp. 65-77.

Koch, B. J., Galaskiewiczm J., and Pierson, A. (2015), The effect of networks on organizational missions, Nonprofit and Voluntary Sector Quarterly, Vol. 44, No. 3, pp. 510-538.

Lynch, R. (2021), Strategic Management, 9th ed., Sage, London, UK.

Morphew, C. C. And Hartley, M. (2006), Mission statements: a thematic analysis of rhetoric across institutional type, Journal of Higher Education, Vol. 77, Issue 3, pp. 456-471.

Nouri, Bagher A., and Milad Soltani. (2017). Analyzing the use of strategic management tools and techniques between Iranian firms, Academy of Strategic Management Journal, Vol. 16, pp. 1–18.

Olusola, SA., Oluseye, OO., Saviour, UM., Lember, KJ., And Ayomiposi, DO. (20229, A content analysis of the vision and mission statements of top ten leading universities in Africa, Cogent Education, Vol. 9, No. 1, https://doi.org/10.1080/2331186X.2022.2143648.

Pearce, J. A. and David, F. (1987), Corporate mission statements: the bottom Line, Academy of Management Executive, Vol. 1, No. 2, pp. 109-116.

Pearce II, J. A. and Robinson R. B. (2003), Strategic Management: Formulation, Implementation, and Control, 8th ed., McGraw-Hill Irwin, Boston, MA.

Peteraf, M., Barney, J. B. (2003), Unraveling the resource-based tangle. Managerial and Decision Economics, Vol. 24, pp. 309-324.

Pitt, M. R. and Koufopoulos, D. (2012), Essentials of Strategic Management, Sage, London, UK.

Porter, M. (2008), On Competition, Harvard Business School Book, Boston, MA.

Robert, M. (1998), Strategy pure and simple II: How winning companies dominate their competitiors, McGraw-Hill, New York, NY.

Rothaermel, F. T. (2021), Strategic Management, 5th ed., McGraw-Hill Education, New York, NY.

Seeber, M., Barberio, V., Huisman, J., and Mampaey, J. (2019), Factors affecting the content of universitiesç mission statements: an analysis of the United Kingdom higher education system, Studies in Higher Education, Vol, 44, Issue 2, pp. 230-244.

Stensaker, B. (2015), Organizational identity as a concept for understanding univeristy Dynamics, Higher Education, Vol. 69, No. 1, pp. 103-115.

Thompson, A. A., Peteraf, M. A., Gamble, J. E., and Strickland III, A. J. (2016). Crafting and Executing Strategy. The Quest for Competitive Advantage: Concepts and Cases, 20th ed., McGraw-Hill Education, New York, NY.

De Wit, B., Meyer, R. (2005), Strategy Process, Content, Context: an International Perspective, 3d ed., Thompson, London, UK.

# GENDER, CULTURE AND PREFERRED EXPLICIT LEADER BEHAVIOR

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## ABSTRACT

Leadership is a complex and dynamic process that is governed by societal norms, expectations, and organizational cultures. The gender differences in preferred leader behavior across societal and industry cultures have been documented in the literature. In this review of our empirical studies, we attempt to sort out the bias, prejudice, unfounded assertions, and sentimental rot and drivel, summarize assertions that are supported by credible research, and report our empirical findings of sex differences between men and women in preferred explicit managerial leader behavior. Our findings support the evolving discourse on leadership studies as several recent studies have shown a trend of diminishing gender differences, in preferred leadership behavior dimensions (e.g., reward, punishment, and reward), due to changing norms and expectations, advancements in gender equality, and shifts in organizational culture.

## INTRODUCTION

In the studies of sex, gender, men, women, males, and females, we can find continual comments since 1910 expressing similar reviews to Thompson-Woolley. In this review of our empirical studies, we attempt to sort out the bias, prejudice, unfounded assertions, and sentimental rot and drivel, summarize assertions that are supported by credible research, and report our empirical findings of sex differences between men and women in preferred explicit managerial leader behavior across societal cultures. . We use gender to refer to males and females.

## HOW SHOULD MEN AND WOMEN BEHAVE?

Norms in a society or organization are generally viewed as behavioral rules, about which there is some degree of consensus, that are enforced through social sanctions (Horne, 2001). There is a long history of leadership research and debate regarding similarities and differences among genders, with a sparse set of contemporary studies of differences. Let us take a look at the major historical models.

## GENDER AND LEADERSHIP IN THE LITERATURE

**Eagly's Social Role Theory (SRT)**

suggests that societies have certain behavioral expectations of men and women; that is, men are expected to behave like culturally defined men, and women are expected to act like culturally defined women. Acting like a man is agentic (e.g., assertive, confident, and self-reliant), and acting like a woman is communal (e.g., nurturing, supportive, and emotionally expressive). Gender roles are enduring aspects of culture and function as a normative constraint that denotes generally accepted types of behavior . Due to dissimilar social experiences and expectations, females tend to be raised and socialized to be more dependent and nurturing, whereas males tend to be raised and socialized to be more independent and aggressive . As such, females are historically described as more inclusive, participative, interpersonal, and communal; and, in contrast, males are historically characterized as more task-oriented, independent, and dominant.

Historically, psychoanalytic, role-learning, cultural feminism, and evolutionary theories of gender differences led values researchers to postulate that men emphasize agentic[1]-instrumental values such as power, whereas women emphasize expressive-communal values such as benevolence (Feather, 1987; Prince-Gibson and Schwartz, 1998; Rokeach, 1973). Interactions theories (e.g., Deaux and Major, 1990) postulated no consistent gender differences.

Much of the research concerning women as managerial leaders is concerned with the extent to which there are differences between the behavior and effectiveness of male and female managers that can be attributed to the condition of being male or female. The male managerial leadership model is the norm in most societies (Eagly and Carli, 2003).

The literature indicates that female leaders entering a traditionally male dominated occupation adopt a more controlling and autocratic leadership style. They mimic the dominant style of males (Eagly and Carli, 2003). Similarly, a male manager might adopt a more egalitarian and participative style in a predominantly female staff. These hypotheses await further investigation.

The approach of these studies relating to gender (sex), culture, and managerial leadership is that the processes in business organizations within a culture are well-known and well-defined, and that both men and women subsamples will not have significant differences between dimension means within countries. Eagly and Johnson (1990) carried out a meta-analysis of the leadership styles of women and men, and, as usual, found evidence for both the presence and the absence of differences in leadership behavior between the sexes. In contrast to the gender-stereotypic expectation that women lead in an interpersonally oriented style and men in a task-oriented style, female and male leaders did not differ in these two styles in organizational studies. Consistent with stereotypic expectations about

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[1] *Agentic* refers to a social cognition theory perspective in which people are producers as well as products of social systems.

a different aspect of leadership style, the tendency to lead democratically or autocratically, women tended to adopt a more democratic or participative style and a less autocratic or directive style than did men.

In summary, much of the literature indicates no sex differences in preferred leader behavior.

## CONVERGENCE OF EXPLICIT LEADER BEHAVIOR PREFERENCES

In our years of reading the academic and public media literature, and working as subordinates, peers, and supervisory managers of women and men, the authors find that:

1. The global cadre of *effective* and *efficient* managerial leaders includes both men and women.

2. Successful men and women managerial leaders enhance their competence through education, experience, mentoring, and meeting increased challenges as they are promoted through the organizational hierarchy.

3. Both men and women learn from one another how to improve their leadership competencies.

4. Both men and women can perceive and understand different environments and situations and can adapt their leadership styles to match the different requirements for success.

5. Men are perceived to be more successful leaders in male-dominated organizations; women are perceived to be more successful leaders in female-dominated organizations.

Our analysis, synthesis, discussion, and conclusions support a contention that men and women, have similar leader behavior preferences across societal and industry cultures.

From our literature review we arrive at these research questions:

1) Is the evaluation of desirability of preferred leader behavior dimensions different between men and women?

2) Is a difference or lack of in preferences moderated by societal culture?

*Hypothesis 1: Females will prefer their leaders to exhibit representation, tolerance for freedom, consideration, and integration behaviors more so than males.*

*Hypothesis 2: Males will prefer their leaders to exhibit initiation of structure, role assumption, production emphasis, and superior orientation behaviors more so than females.*

*Hypothesis 3: There will be no difference between males and females in the preference for demand reconciliation, tolerance for uncertainty, persuasiveness, and predictive accuracy behaviors.*

## METHODS

We employ the Leadership Behavior Description Questionnaire-XII (LBDQXII) to assess preferences for dimensions of explicit leader behavior. This survey instrument yields twelve

dimensions (Stogdill, 1963), see the list of dimensions following; the expanded definitions are at following link: CCCC_WP_2023_July17_LBDQXII_for_Contemporary_Research

**Factor 1: Representation**

**Factor 2: Demand Reconciliation**

**Factor 3: Tolerance of Uncertainty**

**Factor 4: Persuasiveness**

**Factor 5: Initiation of Structure**

**Factor 6: Tolerance of Freedom**

**Factor 7: Role Assumption**

**Factor 8: Consideration**

**Factor 9: Production Emphasis**

**Factor 10: Predictive Accuracy**

**Factor 11: Integration**

**Factor 12: Superior Orientation**

The LBDQXII has extensive use over many years, justifications for our use in a contemporary context may be found at: CCCC Working Paper: Using the LBDQXII for Contemporary Leader Behavior, click at the following link: CCCC_WP_2023_July17_LBDQXII_for_Contemporary_Research

Paralleling the conception of gender roles, some of the behaviors of the LBDQXII instrument reflect more agentic, masculine characteristics, whereas other behaviors reflect more communal, feminine characteristics. Agentic behaviors include *Initiation of Structure* (e.g., taking charge, clarifying tasks), *Role Assumption* (e.g., asserting oneself, being strong), *Production Emphasis* (e.g., competing against others, applying pressure to work harder), and *Superior Orientation* (e.g., striving for status, using influence). Communal behaviors are reflected in *Representation* (e.g., publicizing the group, representing the interests of others), *Tolerance of Freedom* (e.g., deemphasizing hierarchy, encouraging participation), *Consideration* (e.g., listening to others, thinking of others), and *Integration* (e.g., emphasizing cooperation, settling differences). The LBDQXII also includes behaviors that are universally non-gendered traits. Non-gendered behaviors include *Demand Reconciliation* (e.g., organizing, dealing with complexity), *Tolerance of Uncertainty* (e.g., displaying patience, dealing with the unexpected), *Persuasiveness* (e.g., convincing others, influencing) and *Predictive Accuracy* (e.g., forecasting, understanding future events). Based on the literature documenting societal assumptions of gender-based roles, it is expected that males and females will differ in their preference for agentic and communal leadership behaviors, while no differences are expected in non-gendered behaviors. Therefore, our Research Question and hypotheses:

## RESULTS

In Figure 1 and Table 2 depicting gender differences in preferred leader behavior in the USA indicating few differences and the line graphs being quite similar. We conclude that male and female businesspeople in the USA have similar leader behavior preferences.
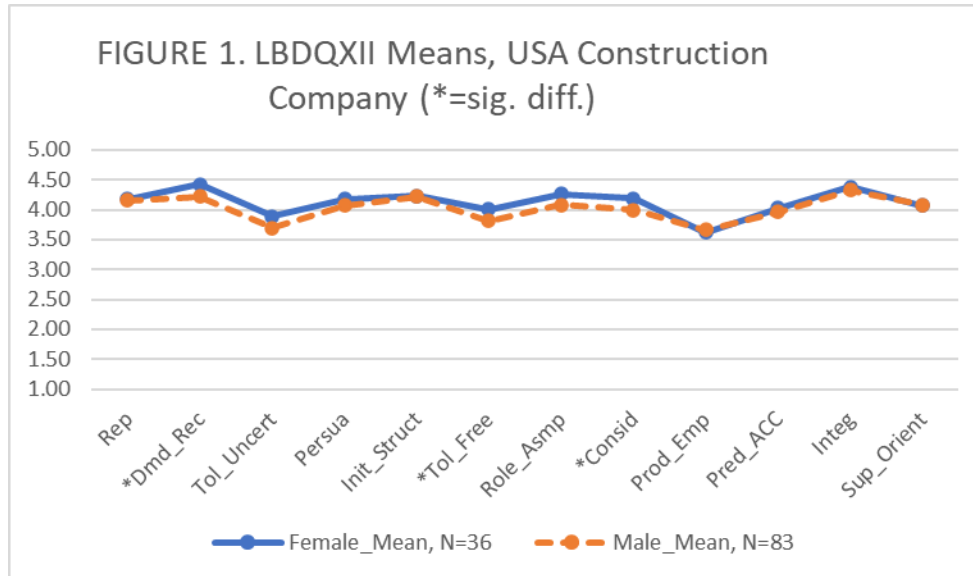


Table 1. MANOVA, LBDQXII MEANS FOR MALES AND FEMALES USA

| Dimension | Female Mean, N=36 | Male Mean, N=83 | F | Sig. | Partial Eta Squared1 | SD Female | SD Male |
|---|---|---|---|---|---|---|---|
| Represent. | 4.18 | 4.16 | 0.052 | 0.820 | 0.000 | 0.48 | 0.46 |
| *DMD_REC | 4.43 | 4.22 | 4.096 | 0.045 | 0.034 | 0.44 | 0.52 |
| Tol_Uncert | 3.89 | 3.70 | 3.017 | 0.085 | 0.025 | 0.51 | 0.55 |
| Persuasive | 4.18 | 4.07 | 1.605 | 0.208 | 0.014 | 0.36 | 0.42 |
| Init_Struct | 4.23 | 4.23 | 0.001 | 0.977 | 0.000 | 0.41 | 0.42 |
| *TOL_FREE | 4.01 | 3.81 | 4.424 | 0.038 | 0.036 | 0.39 | 0.48 |
| Role_Asmp | 4.27 | 4.08 | 2.860 | 0.093 | 0.024 | 0.54 | 0.56 |
| *CONSID | 4.19 | 4.00 | 3.841 | 0.052 | 0.032 | 0.44 | 0.48 |
| Prod_Emp | 3.63 | 3.66 | 0.173 | 0.678 | 0.001 | 0.50 | 0.44 |
| Pred_ACC | 4.03 | 3.96 | 0.428 | 0.514 | 0.004 | 0.42 | 0.49 |
| Integration | 4.38 | 4.33 | 0.330 | 0.567 | 0.003 | 0.50 | 0.50 |
| Sup_Orient | 4.07 | 4.08 | 0.028 | 0.867 | 0.000 | 0.49 | 0.45 |

NOTE: Effect sizes are small.[1]

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[1] In social and behavioral sciences, Cohen (1988) proposed the following benchmarks for interpreting partial eta squared:
Small effect: $\eta p^2 = 0.01$
Medium effect: $\eta p^2 = 0.06$
Large effect: $\eta p^2 = 0.14$

Popova (2018) discusses the Russian Imperial practices of exile to Siberia, and "The Gulag Archipelago" a three-volume work by Aleksandr Solzhenitsyn is seminal work on the Soviet practices of exile to Siberia. The practices led to what is termed "The Siberian Paradox". Male and Female LBDQXII means are displayed in Figure 2 and Table 2.
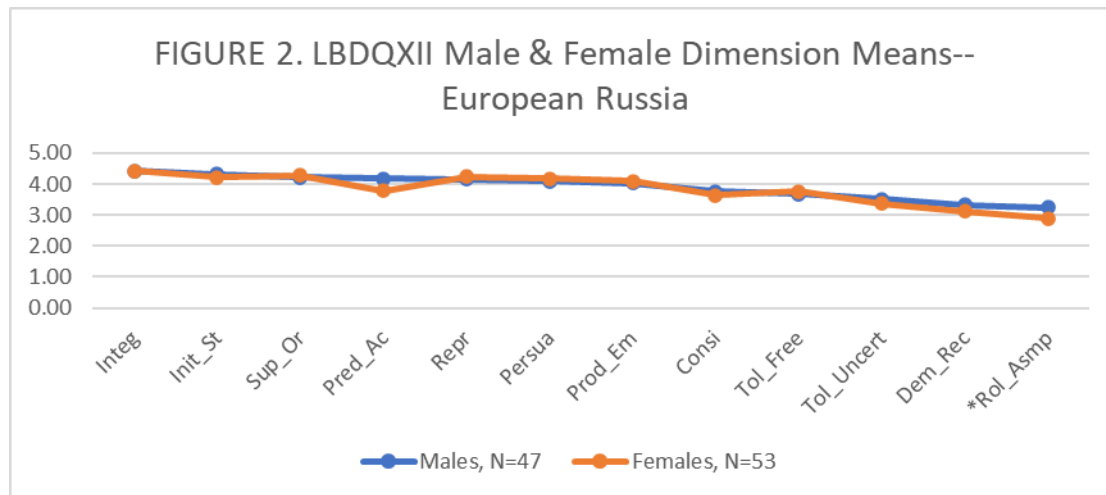


Table 2. MANOVA: LBDQXII Male & Female Dimension Means—European Russia

| Dimension | Type III Sum Squares | Mean Square | F | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|
| CONSID | 0.357 | 0.357 | 0.749 | 0.389 | 0.008 |
| DEM_REC | 1.139 | 1.139 | 0.805 | 0.372 | 0.008 |
| INIT_ST | 0.314 | 0.314 | 1.011 | 0.317 | 0.010 |
| INTEG | 0.000 | 0.000 | 0.001 | 0.981 | 0.000 |
| PERSUA | 0.174 | 0.174 | 0.504 | 0.479 | 0.005 |
| PRED_AC | 3.555 | 3.555 | 1.893 | 0.172 | 0.019 |
| PROD_EM | 0.145 | 0.145 | 0.497 | 0.483 | 0.005 |
| REPR | 0.109 | 0.109 | 0.366 | 0.547 | 0.004 |
| *ROL_ASMP | 3.201 | 3.201 | 5.583 | 0.020 | 0.054 |
| SUP_OR | 0.125 | 0.125 | 0.450 | 0.504 | 0.005 |
| TOL_FREE | 0.198 | 0.198 | 0.458 | 0.500 | 0.005 |
| TOL_UN | 0.440 | 0.440 | 2.092 | 0.151 | 0.021 |

**The "Siberian paradox"**

Huntington's (2002) theory of the *clash of civilizations* considers civilizations as unitary actors. However, the states are not unitary actors, due to their internal geocultural differences that are very prominent in the Russian case. The cultural basis of Russia is far from uniform. It is not true that going to Eastern Russia we can find a sort of civilization much more "Slavic-orthodox" or even "Asiatic."

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[1] In multivariate analysis of variance (MANOVA), partial eta squared ($\eta p^2$) is a measure of effect size that quantifies the proportion of variance in the dependent variables accounted for by each independent variable, while controlling for the effects of other independent variables.

The reality of Russian Siberian mentality is quite different from the stereotypes of Europeans of Western Europe and from these of "Euroasianists" or Slavophiles. Studies on Siberia were impossible for more than 70 years during the Soviet regime, but are emerging.

Vitale (2013) proposes that Siberian cities are much more "European" than Nizhny Novgorod or Samara. In Siberia it is not difficult to find widespread western intellectual and cultural characteristics (much more than in the western, European part of Russia), depending on the historical formation of the region. It is necessary to take into account the enormous influence of the long process of expulsion to the region of dissidents and political and religious exiles, ethnic minorities, bearers of western values (especially individual rights, and religious, economical liberties), with the expulsions being for both cultural and political reasons. They have left a very consistent imprint in Russian Siberian culture. It has been a process of "soft westernization," totally spontaneous. Nonetheless, as we see below in Figure 2a and Table 2a, gender differences in leader behavior practices also to not exist there. In Figure 3 and Table 3 we see depictions of the statistical analysis results from a national sample collected in 2020 and 2021. While there are differences in the means for males and females the differences are likely due to differences in male and female Response Sets (see Littrell, et all, 2020), rather than attitudinal differences, as the patterns are quite similar.
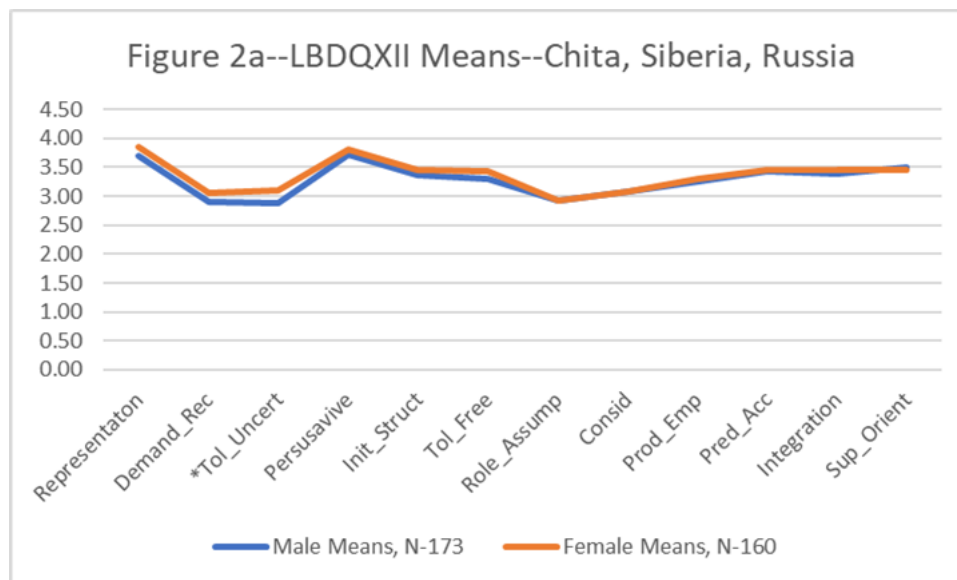


Table 2a. MANOVA: LBDQXII Male & Female Dimension Means—Chita, Siberia, Russia

| | Male Means, N-173 | Female Means, N-160 | Males SD | Females SD | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1Represen | 3.69 | 3.86 | 1.14 | 1.10 | 2.258 | 1 | 2.258 | 1.803 | 0.180 | 0.005 | 1.803 | 0.268 |
| F2DemRe | 2.90 | 3.06 | 0.89 | 0.80 | 2.340 | 1 | 2.340 | 3.25 | 0.07 | 0.010 | 3.257 | 0.436 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| c | | | | | | | | | 7 | 2 | | |
| *F3TolUncert | 2.89 | 3.10 | 0.87 | 0.87 | 3.833 | 1 | 3.833 | 5.064 | 0.025 | 0.015 | 5.064 | 0.612 |
| F4Persusa | 3.71 | 3.82 | 0.85 | 0.81 | 0.936 | 1 | 0.936 | 1.359 | 0.245 | 0.004 | 1.359 | 0.213 |
| F5InitStru | 3.38 | 3.46 | 0.67 | 0.66 | 0.556 | 1 | 0.556 | 1.258 | 0.263 | 0.004 | 1.258 | 0.201 |
| F6TolFree | 3.30 | 3.43 | 1.26 | 1.33 | 1.405 | 1 | 1.405 | 0.835 | 0.362 | 0.003 | 0.835 | 0.149 |
| F7RoleAssmp | 2.93 | 2.92 | 0.41 | 0.43 | 0.018 | 1 | 0.018 | 0.102 | 0.750 | 0.000 | 0.102 | 0.062 |
| F8Consid | 3.08 | 3.08 | 0.35 | 0.36 | 0.002 | 1 | 0.002 | 0.013 | 0.911 | 0.000 | 0.013 | 0.051 |
| F9ProdEm | 3.26 | 3.31 | 0.75 | 0.68 | 0.222 | 1 | 0.222 | 0.430 | 0.513 | 0.001 | 0.430 | 0.100 |
| F10PreAcc | 3.42 | 3.46 | 0.68 | 0.72 | 0.106 | 1 | 0.106 | 0.215 | 0.643 | 0.001 | 0.215 | 0.075 |
| F11Integra | 3.39 | 3.46 | 1.25 | 1.29 | 0.357 | 1 | 0.357 | 0.222 | 0.638 | 0.001 | 0.222 | 0.076 |
| *F12SupOr | 3.50 | 3.45 | 0.94 | 0.93 | 0.255 | 1 | 0.255 | 0.293 | 0.589 | 0.001 | 0.293 | 0.084 |

**Sub-Saharan Africa**

Zame, Hope, and Respress conducted surveys among head teachers (i.e., a role analogous to a school principal) in Ghana to discern what they considered to be effective leadership behaviors. Though sex differences were not the focus, they found that rankings of effective leadership were identical for both males and females. Both genders ranked managing day-to-operations, exercising leadership (e.g., vision setting, stakeholder engagement), and supervising curriculum as the top proficiencies, respectively, for effective leadership. These later findings imply that certain leadership behaviors can be viewed as universal, an idea now considered further. The following charts, Figures 4, 5, and 6, from data from Evans, Littrell, Lamb, Kirkman (2021), show similar national patterns, but different gender preferences, indicating a divergence in leader preferences in Southwest Africa, with females having lower preferences for Persuasiveness and Role Assumption, and higher preferences for Initiation of Structure and Integration.

Figure 4. Ghana—Gender Differences in Leader preference dimensions
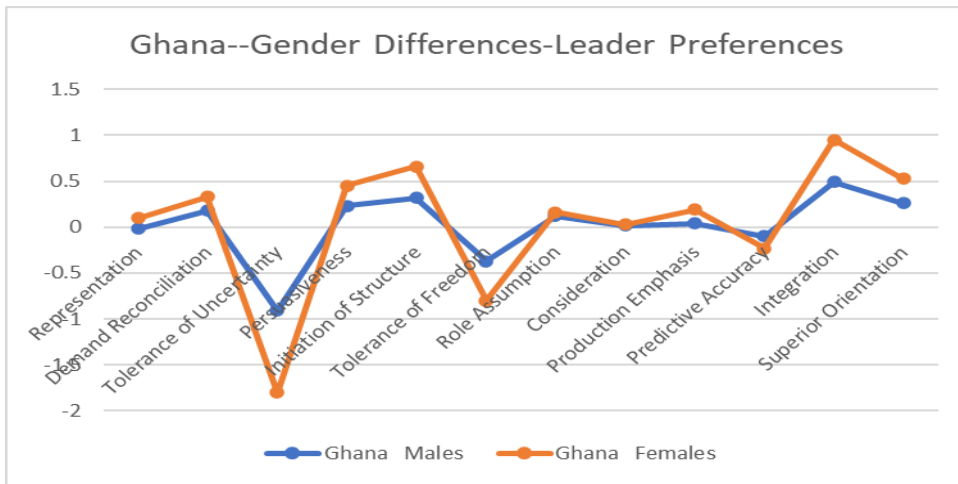
Figure 5. Kenya—Gender Differences in Leader preference dimensions
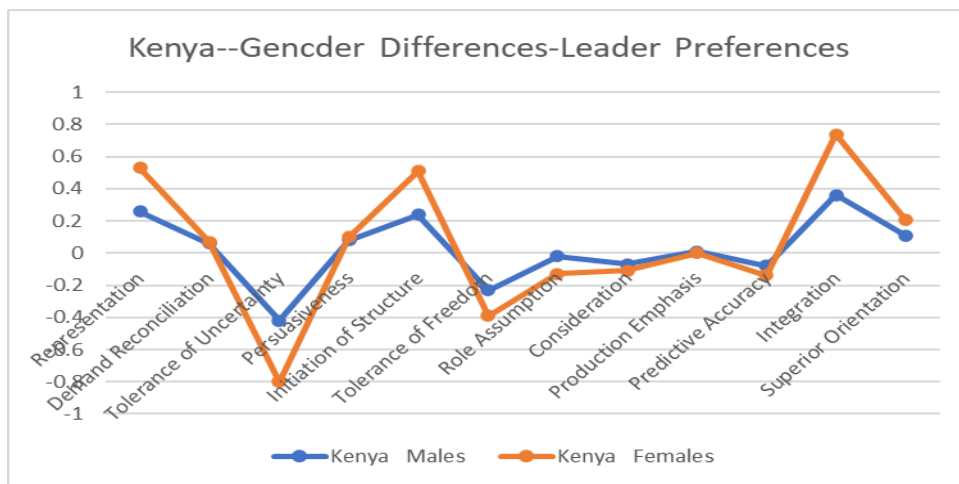


Figure 6. Zambia—Gender Differences in Leader preference dimensions
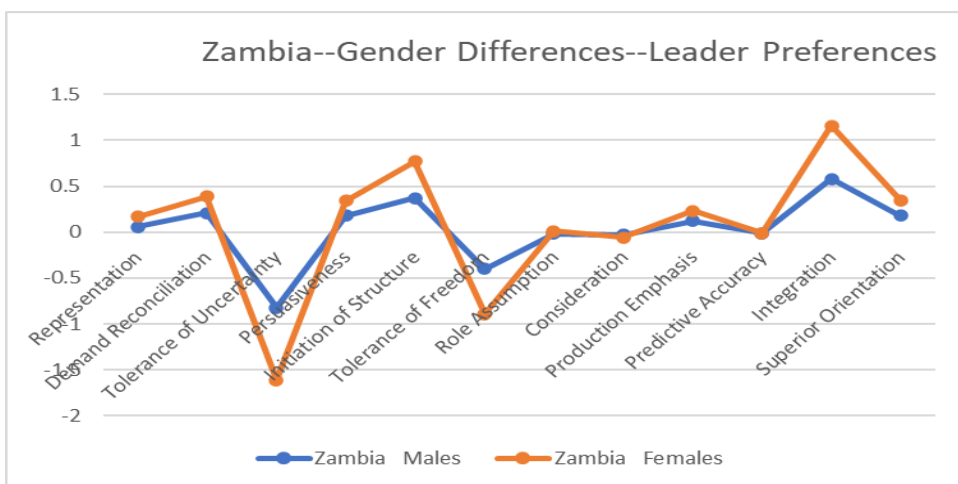
## CONCLUSIONS AND IMPLICATIONS

From our results we arrive at these conclusions for or research questions and hypotheses:

1) Is the evaluation of desirability of preferred leader behavior dimensions different between men and women? No, we find leader behavior preferences between genders to by similar, if not identical.

2) Is a difference or lack of in preferences moderated by societal culture? No, the absence of differences is found across cultures.

*Reject Hypothesis 1: Females will prefer their leaders to exhibit representation, tolerance for freedom, consideration, and integration behaviors more so than males.*

*Reject Hypothesis 2: Males will prefer their leaders to exhibit initiation of structure, role assumption, production emphasis, and superior orientation behaviors more so than females.*

*Accept Hypothesis 3: There will be no difference between males and females in the preference for demand reconciliation, tolerance for uncertainty, persuasiveness, and predictive accuracy behaviors.*

Our findings support the evolving discourse on leadership studies as several recent studies have shown a trend of diminishing gender differences in preferred leader behavior dimensions (Eagly et al., 2003; Vinkenburg, Van Engen, Eagly, & Johannesen-Schmidt, 2011; Vecchio, Justin, & Pearce, 2008). There are various factors contributing to this trend, including changing societal norms and expectations, advancements in gender equality, and shifts in organizational cultures.

Eagly et al. (2003) concluded that women were more likely to adopt transformational leadership styles, considered as highly effective styles. This approach encourages employees to transcend their own self-interests for the sake of the team or organization, promoting an enhanced sense of group identity. Men, on the other hand, were more likely to use transactional leadership styles, focusing on rewards and punishments. However, the researchers emphasized that the differences were relatively small and that both men and women could be effective leaders.

In a later study, Vinkenburg et al. (2011) suggested that men were also increasingly adopting transformational leadership styles, a development that may be attributed to changing societal norms. They argued that contemporary society values behaviors such as collaboration, empathy, and emotional intelligence, traditionally associated with feminine leadership styles, thus encouraging men to adopt these styles as well.

The advancements in gender equality have also played a crucial role in the decreasing gender differences in leadership behavior. As gender norms and roles evolve and become more flexible, individuals are no longer confined to specific behaviors based on their gender (Ridgeway & Correll, 2004).

In the organizational context, Vecchio et al. (2008) noted that corporate cultures are increasingly fostering inclusivity and diversity, creating a conducive environment for both men and women to display a variety of leadership behaviors. This cultural shift is eroding the traditionally held belief that some leadership behaviors are more 'masculine' or 'feminine'.

In conclusion, the gender differences in preferred leader behavior dimensions are disappearing due to changing societal norms and expectations, advancements in gender equality, and shifts in organizational cultures. However, as Eagly et al. (2003) suggested, the most critical factor is the effectiveness of the leader, which can be independent of their gender. Many more cultural comparisons are available from the CCCC.

## REFERENCES

Allen, Charlotte. (2002) 'Return of the guy'. The Women's Quarterly (e-Magazine), 12(3), unpaged.

Alvesson, M. and Billing, Y.D. (2009) 'Understanding gender and organizations'. 2nd edition. London: Sage

Benbow, C.P. & Stanley, J.C. (1996) 'Inequity in equity: How "equity" can lead to inequity for high-potential students'. Psychology, Public Policy, and Law, 2, pp. 249–292.

Boohene, Rosemond. (2009). 'The relationships among gender, strategic capabilities, and performance of small retail firms in Ghana'. Journal of African Business, 10 (1), pp. 121-138, https://www.researchgate.net/journal/Journal-of-African-Business-1522-9076

Corno, L., Cronbach, L.J,, Kupermintz, H., Lohman, D.F., Mandinach, E.B., Porteus, A.W. & Talbert, J.E. (2002). 'The educational psychology series, Remaking the concept of aptitude: Extending the legacy of Richard E. Snow'. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Darwin, Charles. (1871) 'The Descent of Man, and Selection In Relation To Sex, in Two Volumes.—Vol. II'. London: John Murray, Albemarle Street.

Deaux, K., & Major, B. (1990). A social psychological model of gender. In: D.L. Rhode(Ed.), Theoretical perspectives on sexual difference (pp. 89-99). New Haven: Yale University. https://www.researchgate.net/publication/247723936_Extending_the_Cross-Cultural_Validity_of_the_Theory_of_Basic_Human_Values_with_a_Different_Method_of_Measurement'. (accessed Jun 20 2023).

Dobbins, G.H. & Platz, S.J. (1986). ' Sex-differences in leadership—how real are they. Academy of Management Review 11 (1986), pp. 118–127.

Eagly, A. H., Johannesen-Schmidt, M. C., & Van Engen, M. L. (2003) 'Transformational, transactional, and laissez-faire leadership styles: a meta-analysis comparing women and men'. Psychological Bulletin, 129(4), pp. 569-591.

Eagly, A.H. & Carli, L.L. .1981. Sex of researchers and sex-typed communications as determinants of sex differences in influenceability: a meta-analyses of social influence studies. Psychological Bulletin, 90 (1981), 1–20.

Eagly, A.H.; Johannesen-Schmidt, M.C.; Van Engen, M.L. and Vikenburg, X.X. (2003) 'Transformational, Transactional and Laissez-Faire Leadership Styles: A Meta-Analysis Comparing Women and Men'. Psychological Bulletin, 129(4): 569-591.

Eagly, A.H. & Johnson, B.T. (1990) 'Gender and leadership-style: a meta-analysis. Psychological Bulletin 108 (1990), pp. 233–256.

Eagly, A.H., & Karau, S.J. (2002) 'Role congruity theory of prejudice toward female leaders'. Psychological Review, 109(3), pp. 573-598.

Eagly, A.H., Karau, S.J. & Makhijani, M.G. (1995) 'Gender and the effectiveness of leaders: a meta-analysis'. Psychological Bulletin 117, pp. 125–145.

Eagly, Alice H. (1987) 'Sex differences in social behavior: A social-role interpretation'. Hillsdale, N.J.: Erlbaum.

Epitropaki, O., & Martin, R. (2004) 'Implicit leadership theories in applied settings: Factor structure, generalizability, and stability over time'. Journal of Applied Psychology, 89, pp. 293-310.

Erez, Miriam & Earley, P.C. (1993) 'Culture, self-identity, and work'. New York: Oxford University Press.

Evans, W.R.; Littrell, R.F.; Lamb, N.H. & Kirkman, B. (2021) 'Examining leadership preferences of working adults in Ghana, Kenya, and Zambia'. Africa Journal of Management, 7:3, pp. 375-399,

Feather, N. (1987). Gender differences in values. In F. Halish and J. Kuhl (Eds.),Motivation, intention, and volition (pp. 31-45). New York: Springer-Verlag (19) (PDF) Extending the Cross-Cultural Validity of the Theory of Basic Human Values with a Different Method of Measurement. Available from: https://www.researchgate.net/publication/247723936_Extending_the_Cross-Cultural_Validity_of_the_Theory_of_Basic_Human_Values_with_a_Different_Method_of_Measurement (accessed Jun 20 2023).

Festinger, Leon and Carlsmith, James M. (1959) 'Cognitive Consequences of Forced Compliance'. Journal of Abnormal and Social Psychology, 58: pp. 203-210.

Gottfredson, L.S. (2002) 'Gottfredson's theory of circumscription, compromise, and self-creation', In Brown, D. (Ed.) 'Career choice and development', pp. 85–148. San Francisco: Jossey-Bass.

Hofstede, Geert. (1980a) 'Culture's Consequences: International differences in work-related values'. Beverly Hills, Calif.: Sage.

Horne, C. (2001). 'Sociological Perspectives on the Emergence of Norms', pp. 1-34, in Social Norms, ed. M. Hechter and K.-D. Opp. New York: Russell Sage.

Johnson S.K., Murph, S.E., Zewdie, S. & Reichard, R.J. (2008) The strong sensitive type: Effects of gender stereotypes and leadership prototypes on the evaluation of male and female leaders. Organizational Behavior and Human Decision Processes 106(1): pp. 39–60.

Kuada, John (2009) "Gender, Social Networks, and Entrepreneurship in Ghana" Journal of African Business Vol. 10 No. 1 pp: 85–103

Kuada, John (2010). 'Gender, social networks, and entrepreneurship in Ghana'. Journal of African Business, 10(1), pp. 85-103.

Littrell, R.F.; Ljubica, J.; Minelgaite, I. & Warner-Soderholm, G. 2020. 'Presentation: Response Set as a Cross-Cultural Variable: Recent Empirical Data from Cross National Samples. Analytics for Management and Economics Conference (Санкт-Петербург). June. Reprint available from first author. https://www.researchgate.net/search.Search.html?query=Littrell

Loden, M. (1985) 'Feminine leadership: or how to succeed in business without being one of the boys'. , Times Books, New York, NY.

Lord, R. G., & Maher, K. J. (1993) 'Leadership and information processing: Linking perceptions and performance'. London: Routledge.

Lubinski D. & Benbow C.P. (2006) 'Study of Mathematically Precocious Youth after 35 years: Uncovering antecedents for the development of math-science expertise'. Perspectives on Psychological Science, 1, pp. 316–345.

Lubinski D., Benbow, C.P. & Kell, H.J. (2014) 'Life paths and accomplishments of mathematically precocious males and females four decades later'. Psychological Science,25, pp. 2217–2232.

Manning, T.T. (2002). 'Gender, Managerial Level, Transactional Leadership and Work Satisfaction'. Women in Management Review, 17(5), pp. 207-216.

McCabe, K. O., Lubinski, D., & Benbow, C. P. (2019, March 14) 'Who Shines Most Among the Brightest?: A 25-Year Longitudinal Study of Elite STEM Graduate Students'. Journal of Personality and Social Psychology. Advance online publication. http://dx.doi.org/10.1037/pspp0000239, pp. 1-27. https://www.gwern.net/docs/iq/smpy/2019-mccabe.pdf, accessed 21 July 2019.

Niederle M. & Vesterlund L. (2008) 'Gender differences in competition'. Negotiation Journal, 24: pp. 447–65

Paris, Lori D.; Howell, Jon P.; Dorfman, Peter W. and Hanges, Paul J. (2009) 'Preferred Leadership Prototypes of Male and Female Leaders in 27 Countries'. Journal of International Business Studies, 40(8): pp. 1396-1405.

Popova, Zhanna (2018) 'Exile as Imperial Practice: Western Siberia and the Russian Empire, 1879–1900'. International Review of Social History, 63(S26), pp. 1-20.

Prince-Gibson, Eetta and Shalom H. Schwartz. (1998). 'Value priorities and gender'. Social Psychology Quarterly 61. Pp. 49-67.

Ridgeway, C. L., & Correll, S. J. (2004) 'Unpacking the gender system: A theoretical perspective on gender beliefs and social relations'. Gender & Society, 18(4), 510-531.

Rokeach, Milton. (1973. 'The nature of human values'. New York: Free Press.

Schein, V.E. (2001) 'A Global Look at Psychological Barriers to Women's Progress in Management'. Journal of Social Issues, 57(4): pp. 675-88.

Shen, Jia. (2007) 'Labour Disputes and Their Resolution in China'. Oxford, UK: Chandos Publishing.

Schriesheim, C.A. Castro, S.L. & Cogliser, C.C. (1999) 'Leader–member exchange (LMX) research: a comprehensive review of theory, measurement, and data-analytic practices'. Leadership Quarterly 10 (1999), 63–113.

Sheppard, D. (1992) 'Women Managers' Perceptions of Gender and Organizational Life. In A. J. Mills and P. Tancred (Eds.), Gendering Organizational Analysis, Newbury Park, CA, USA: Sage, pp. 151-166.

Stoet G. & Geary D.C. (2015) 'Sex differences in academic achievement are not related to political, economic, or social equality'. Intelligence, 48, pp. 137-151.

Stoet, G. & Geary, D.C. (2018) 'The gender-equality paradox in science, technology, engineering, and mathematics education'. Psychological Science, 29[4], pp. 581-593.

Stogdill, R.M. (1959) 'Individual behavior and group achievement'. New York: Oxford

Stogdill, R.M. (1963) 'Manual for the Leader Behaviour Description Questionnaire – Form Xii. An Experimental Revision', Bureau of Business Research, Columbus, OH, USA: the Ohio State University.

Stogdill, R.M. (1974) 'Handbook of leadership'. Free Press, New York, NY.

Su R, Rounds J, & Armstrong PI (2009). Men and things, women and people: A metaanalysis of sex differences in interests. Psychological Bulletin, 135, 859–884.

Thompson-Woolley, Helen. (1910) 'A review of the recent literature on the psychology of sex'. Psychological Bulletin, 7, 335-342. https://ia600708.us.archive.org/view_archive.php?archive=/28/items/crossref-pre-1923-scholarly-works/10.1037%252Fh0065614.zip&file=10.1037%252Fh0066338.pdf

Vecchio, R. P. (2003). 'In search of gender advantage'. Leadership Quarterly,14, pp. 835–850.

Vecchio, R.P., Justin, J.E. & Pearce, C. (2008) 'The utility of transactional and transformational leadership for predicting performance and satisfaction within a path-goal theory framework'. Journal of Occupational and Organizational Psychology, 81(1), pp. 71 – 82.

Vilkinas, Tricia; Shen, Jia and Cartan, Greg. (2009) 'Predictors of Leadership Effectiveness for Chinese Managers. Leadership and Organization Development Journal, 30(6), pp. 577-590.

Vinkenburg, C. J., Van Engen, M. L., Eagly, A. H., & Johannesen-Schmidt, M. C. (2011) 'An exploration of stereotypical beliefs about leadership styles: Is transformational leadership a route to women's promotion? The Leadership Quarterly, 22(1), pp. 10-21.

Vitale, Alessandro (2013). 'Russia and the West: The Myth of Russian Cultural Homogeneity and the "Siberian Paradox". Paper presented at Telos in Europe: The L'Aquila Conference, 7-9 September 2012, L'Aquila, Italy. http://www.telospress.com/russia-and-the-west-the-myth-of-russian-cultural-homogeneity-and-the-siberian-paradox/, accessed 28 December 2015.

Zame, M. Y., Hope, W. C. & Respress, T. (2008. Educational reform in Ghana: the leadership challenge. International Journal of Educational Management, 22(2), pp. 115-128.

# ARE WINE TERROIR CHARACTERISTICS IMPORTANT?
# GENERATIONAL COHORT DIFFERENCES

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## ABSTRACT

This paper provides the initial results of ongoing research referring to what Greek wine consumers of four generational cohorts consider important when choosing a wine and if wine terroir characteristics are important to them during this choice. Additionally, it proceeds to explore generational cohort differences. An online questionnaire based on previous literature was developed and with non-probability sampling, during a three-week period, 366 valid questionnaires were gathered. Results revealed that on a 7-point Likert-type scale, six items (out of 44) were considered as important (MS>5.00) by cohorts when choosing a wine. These characteristics are "taste", "smell", "price", "aroma", "authenticity" and "clarity and color of wine". Results reveal that terroir elements are not considered as highly important by consumers compared to the product's characteristics. Factor analysis extracted four factors, namely "Core terroir", "Product outcome", "Human terroir and gastronomy" and "Communication terroir". One-way Anova revealed that cohorts did not show differences in their interest regarding wine characteristics. The present study even though ongoing, contributes to previous research by providing useful information on the behavior of four generational cohorts regarding wine choice characteristics. Additionally, its originality stands on that cohort differences and wine choice characteristics are an understudied topic.

*Keywords: Wine, terroir, generational cohorts, consumer behavior, marketing*

## INTRODUCTION

This study explores the wine attributes considered important when choosing a wine by consumers of four Greek generational cohorts and if terroir elements are among them. It additionally has the following objectives (OB) referring to the wine consumers of the four Greek generational cohorts:

OB1: to explore if the wine consumers of these cohorts are knowledgeable of wines,

OB2: to report their frequency of wine consumption.

OB2: to explore generational cohort differences in wine characteristics considered important when choosing a wine.

Previous research reports that the wine market has experienced significant changes the last decades, resulting from consumers choices, laws, or new competitors (Vrontis *et al.*, 2011). For example, consumers consider that wines from a specific variety or specific country or place are higher quality than others of a different variety or country or place (Hollebeek *et al.*, 2007). The above combined with the fact that the wine market has numerous brands which intensifies the already fierce competition (Vrontis *et al.*, 2011) resulted in forcing wineries to improve their marketing tactics. The intense competition made them align with consumers' desires (Giacomarra *et al.*, 2020; Vrontis *et al.*, 2016) and also differentiate their products from their competitors (Charters, 2010). These strategies include reinforcing the connection between territory and wine (Giacomarra *et al.*, 2020), and communicating this association to the consumers (Charters *et al.*, 2017; Riviezzo *et al.*, 2017; Warman and Lewis, 2019). This paper makes a theoretical contribution to academia twofold. First by providing insight about the Greek wine consumers of different cohorts regarding which wine attributes and terroir characteristics are considered important by them in order to choose a wine, an issue that is understudied. Secondly, by exploring existing generational cohort differences in the wine attributes considered important in order for them to choose it (including terroir characteristics), an issue which up to our knowledge has been extremely understudied (one study found: Koksal, 2019). Additionally, on practical basis it provides with information of the terroir characteristics that are or are not of interest by wine consumers of four generational cohorts in order to implement the appropriate marketing strategies. This paper is organized as follows. First the literature review of terroir is presented as well as the methodology and results of data analysis. These sections are followed by the discussion and marketing implications. This paper closes with the conclusion, limitations, and directions for future research.

## LITERATURE REVIEW

There are many definitions of wine terroir (e.g., Vaudour, 2002), which are classified under two broad categories. The first category is the "strict" definition of wine terroir which encompasses the physical and natural environment of the vitivini production. The second category of definitions includes the above characteristics of terroir adding the human factor (in the broader sense, including historical and sociocultural factors). Examples of academic works that are in line with the wine terroir definition that includes the human element are Patterson and Buechsenstein (2018), Vaudour (2002, 2003), Capitello *et al.* (2021), Charters *et al. (*2017), Castelló (2021) and ().

Additionally, Van Leeuwen *et al.* (2010) emphasized that wine terroir is not a simple construct, and many factors shape it which also interreact with each other. That being said, a number of researchers

focused on wine terroir, analyzing one specific or more facets of terroir incorporated in its definition (Moran, 2001; Patterson and Buechsenstein, 2018; Vaudour, 2002). Wine terroir research is a continuing issue of interest and uprising in studies since it defines quality by consumers (e.g. Hollebeek *et al.*, 2007). There is a large number of studies that address wine terroir as a concept as well as wine terroir from the winery point of view (Bramley and Gardiner, 2021; Smith Maguire and Charters, 2021; Van Leeuwen and Seguin, 2006).

Studies are found connecting wine terroir and wine tourism (e.g. Scorrano *et al.*, 2018) as well as terroir's role in profitability for winegrowers (e.g., De Salvo *et al.*, 2017). As to studies on wine terroir from the consumer perspective, it is mostly studied under wine geographical identification schemes: Protected designation of origin (PDO), Protected geographical indication (PGI), and Traditional speciality guaranteed (TSG), and do not connect geographical identification schemes clearly with "wine terroir". These studies focusing on wine geographical identification schemes and consumer behavior (e.g., Espejel and Fandos, 2009; Ribeiro and Santos, 2007) study usually this specific single aspect of wine terroir. Lastly, there are a handful of studies that focus on wine terroir and generational cohorts' behaviour (Capitello *et al.*, 2021; Wiedmann *et al.*, 2014).

On the other hand, academic studies that were found with the terms "wine terroir", "consumer" and "research" are relatively fewer (N=454 on https://scholar.google.com), while adding the word "cohort", produced only 35 results, thus providing the grounds for further research. It is pointed out that the studies found do not directly relate with our study. For example, Wiedmann et al. (2014) explored the "various dimensions of customer-perceived value" that motivate generation X and Y to choose and consume a wine. They found "positive relations between financial, functional, individual and social perceptions that influence the desire for and the consumption of wine.". Capitello et al. (2021) analyzed "the role of a carbon reduction claim in consumer choice when it is labelled in conjunction with terroir cues on a bottle of wine" for Generation Y consumers (N=982; Italy) with a Discrete Choice Experiment. Their results "shows seven consumer segments characterized by different motivations and relationships between the environmental claim and the terroir indications".

Since there are limited studies that directly address the focus of this paper (generational cohort differences and wine attributes and terroir in wine choice), as well as its objectives, a number of studies were selected since they fit the context of this study.

Bruwer et al. (2011) investigated Australian (N=150) Baby Boomers, Millennials, and generation X visitors at ten wineries and found that "Millennial consumers drink significantly less wine and spend significantly less money on their monthly wine purchases compared with the older generations". Fountain and Lamb (2011) explored wine consumption behavior of generation Z and generation X individuals in New Zealand and found that the generation Y consumers are "drinking wine more

frequently, and in more everyday contexts than their older counterparts were at a similar age, although they are less likely to consume wine on special occasions". Seyedimany and Koksal (2022), studied 708 wine customers of three generational cohorts (Baby Boomers, Generation X and Generation Y), and found that Baby Boomers drink wine more on special occasions compared to the other cohorts, while generation X drinks more on a weekly basis.

Stergiou (2019) investigated (among other issues) wine knowledge of the Greek generation Z cohort (N=156). He found that generation Z participants had little/basic knowledge of wine or "no prior knowledge". Tzimitra-Kalogianni *et al.* (1999) found that Greek wine consumers lacked knowledge about wine attributes and characteristics and that consumers needed information and education about wine production stages, wine types and consumption.

The study of Koksal (2019) is the only one found that is directly related to this study. Koksal (2019) studied 444 Lebanese wine consumers from four different generational cohorts (Baby Boomers, generation X, Millennials, and generation Z) and what wine attributes they consider important. They also investigated whether there were statistically significant differences between the cohorts. Koksal (2019) found that "there are some differences among the generational cohorts with regard to price, label and packaging, and grape variety.

As regards Greece and wine terroir, research focuses on the core facets of wine terroir, i.e., soil, climate, and varieties (Karapetsas *et al.*, 2023; Stavridou *et al.*, 2016), wine tourism and terroir (e.g. Sigala and Dimopoulou, 2017), robots used in wines terroirs (Tziolas *et al.*, 2023), cultural identity in the frame of terroir and wine (Sigala, 2019) and consumer behaviour and wines with geographical indications (Dimara and Skuras, 2003; Skuras and Vakrou, 2002). To our knowledge, there is one study that uses the term "wine terroir" connected to consumers behavior (google scholar search with the above terms plus Greece) in the Greek context (Tsiakis *et al.*, 2022). Though, the specific paper deals with wineries and toponymy (sample was 3487 wine labels) and explores "how the vineyard names can become commodified symbols of terroir, in relation to the wineries' communication strategies".

## RESEARCH METHOD

Based on the relevant literature on terroir and, in particular, wine terroir, a structured questionnaire was developed that included 44 items (in which terroir elements were incorporated) referring to the wine characteristics that consumers consider as being important for wine choice. All items were drawn from previous research (e.g. Capitello *et al.*, 2021; Castelló, 2021; Charters *et al.*, 2017; Moran, 2001; Patterson and Buechsenstein, 2018; Vaudour, 2002). Following the questionnaire development, small-scale qualitative research was undertaken in forms of personal interviews to validate the items in the questionnaire. Next, a pilot test study was implemented with face-to-face interviews (convenient

sample), recording comments made by the participants about comprehension or other issues of the research tool. The final version of the questionnaire was distributed online and is still ongoing research. The questionnaire is addressed to wine consumers from different generational cohorts (Generation Z, Generation Y, Generation X, Baby Boomers), thus being 18-76 years of age (18 years old may drink wine according to the Greek law, since they are considered as adults). Over a three-week period 366 usable questionnaires are collected for data analysis.

## RESULTS

*Participants profile*

Regarding gender distribution, males were overrepresented, accounting for 59.0% (N=216) of the sample, while 150 females participated (41.0%). The mean age was 42.9 years (Std=14.9) and was distributed across four generational cohorts (Generation Z: 25.1%; Generation Y: 27.3%; Generation X: 30.6%; and Baby Boomers: 16.9%). Also, 41.8% were single (N=153), 50.5% married (N=185) and 7.7% divorced or widowed (N=28). Moreover, 63.9% (N=234) lived in urban areas and 36.1% (N= 132) in rural or semirural areas. Concerning education, 44.4% (N=158) had secondary education (including university students), 10.7% (N=39) had postsecondary education and 46.2% (N=169) had at least a bachelor's degree. As to profession, 58.8% (N=215) were on salary (federal/private employee, on pension, one-year unemployment fund), 16.4% were businesspeople (N=60), 2.2% (N=8) were blue collar workers, and 22.7% (N=83) were dependent on others. With reference to net monthly family income in euros, 35.2% (N=129) had an income up to 1000.00€, 38.0% (N=139) 1000,01-2000,00€, and 26.8% (N=98) more than 2000,00 €.

*Wine consumption behavior*

Concerning the total sample, most consumers are not heavy users of the product (Table 1), with 15.0% drinking wine on special occasions and 42.0% drinking wine 1-3 times per month. On the other hand, 43.0% drink wine at least once per week. Consumers drink bottled wine (26.0%), bulk (5.2%), and both types (68.9%). In Table 1, Gen Z, Gen Y, Gen X, BB and TS represent the generational cohorts Z, Y, X, Baby Boomers, and the total sample respectively. Additionally, from Table 1 it is revealed that the cohort that most frequently (overall) engages in wine consumption is the generation X cohort, whereas only 13.4% (the smallest compared to the other cohorts) drink wine on special occasions, while it has the highest percentage (48.2%) of drinking wine 1-3 times per month, and (8.1%) drinking wine at least once per day. Though, on a weekly basis, the cohort that drinks wine the most is the generation Y cohort, whereas 50.0% drink wine at least once a week.

| Frequency of wine consumption | Gen Z % | Gen Y % | Gen X % | BB % | TS % |
|---|---|---|---|---|---|
| Never | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Only on special occasions (eg Christmas, Easter, etc.) | 14.1 | 15,0 | 13.4 | 19,4 | 15.0 |
| 1-3 times a month | 42.4 | 35,0 | 48,2 | 41,9 | 42,1 |
| 1-3 times a week | 38.0 | 34,0 | 22,3 | 25,8 | 30,1 |
| 4-6 times a week | 3.3 | 12,0 | 8,0 | 9,7 | 8,2 |
| Daily | 2.2 | 4,0 | 7,1 | 3,2 | 4,4 |
| More than once a day | 0.0 | 0.0 | 1.0 | 0.0 | 0.3 |

Table 1. Participants frequency of wine consumption (%)

In terms of self-assessed level of wine knowledge, most consumers consider that they have very limited (31.0%; N=115) or limited knowledge (38.0%; N=139). In addition, 7.1% (N=21) consider that they do not have any at all knowledge about wines, and 23.5% (N=86) considered that they have advanced or expertise knowledge.

*Wine characteristics considered important by cohorts*

Forty-four wine-related items/variables were presented to participants and were requested to express how important was each one for them. Answers were presented on a 7-point Likert type scale (1= completely unimportant up to 7= completely important). Mean scores (MS) were calculated, which revealed that answers fitted in the range of 3.51-6.02 of the Likert type scale. Six items were rated with MS>5.00 and five were rated with MS<4.00, while the rest 33 were rated with MS: 4.00-4.99. The highest rated item was "taste" (MS=6.02), followed by "smell" (MS=5.58), "price" (MS=5.39), "aroma" (MS=5.35), "authenticity" (MS=5.13) and "clarity and color of wine" (MS=5.11). In contrast, the least interested items were "landscape architecture" (MS=3.51), "production ritual" (MS=3.74), "private label" (MS=3.94), "historical aspects" (MS=3.95) and "producer history" (MS=3.98). Referring to terroir only "authenticity" (MS=5.13) was rated with a MS>5.00, considered thus as "somewhat important".

*Factor analysis*

All items were subjected to factor analysis to reduce them to a manageable set of variables and proceed to further data analysis. Through factor analysis (Principal Component Analysis with varimax rotation), ten items were dropped due to multiple loading or loading <0.4 on a factor. In this matter, four dimensions were extracted (KMO=0.962; BTS=11478.987; df=528; sign=0.000). These four dimensions accounted for 70.8% of total variance.

The first factor describes 28.3% of the variance and is named "Core terroir." It incorporates 14 items that are referred to (according to literature) as different facets of wine terroir (natural terroir and sociocultural terroir). Example of items included in this factor are "landscape architecture", "climate", and "cultural identity". The loadings of the items on the factor range from 0.561-0.848, and its Mean Factor Score (MFS) is MFS= 4.19 (Std=1.49). The second factor accounts for 14.7% of the variance and is named "Product outcome" because it includes items that refer to the wine itself (i.e., the product

outcome). It incorporates six items such as "aroma", and "taste", with loadings ranging from 0.612-0.865, and MFS= 5.33 (Std=1.30). The third factor describes 14.2% of the variance and is named "Human terroir and gastronomy" as it includes items that refer to the traditional production process of the wine. It incorporates eight items such as "method and means of storage (e.g., in wooden or metal barrels, cellar temperature, etc.)" and "connection with gastronomy" with loadings ranging from 0.514-0.609, and MFS= 4.73 (Std=1.40). Lastly the fourth factor accounts for 13.6% of the variance and is named "Communication terroir" since it includes items that refer to the means that the wine and its terroir is communicated. It incorporates six items such as "name of producer-winery" and "label design connected to the area" with loadings ranging from 0.554-0.779, and MFS= 4.42 (Std=1.43).

*Cohort behavior analysis*

Table 2 presents how each cohort rates the dimensions (extracted from factor analysis) of wine attributes in terms of importance when choosing a wine (mean score (MS) and standard deviation (Std)). It also reports the mean factor score (MFS) for each dimension. Table 2 reveals that regarding the "Core terroir", among the four cohorts the generation Y cohort has ranked it as most important, while for the "Product outcome" dimension, the generation X cohort has ranked it higher. Lastly, the Baby Boomers ranked both the "Human terroir and gastronomy" and the "Communication terroir" dimension slightly higher compared to the other cohorts.

| Cohort | Core terroir | | Product outcome | | Human terroir and gastronomy | | Communication terroir | |
|---|---|---|---|---|---|---|---|---|
| | MS | St.d | MS | St.d | MS | St.d | MS | St.d |
| Generation Z | 4.16 | 1.35 | 5.34 | 1.30 | 4.72 | 1.22 | 4.45 | 1.30 |
| Generation Y | 4.30 | 1.58 | 5.21 | 1.30 | 4.68 | 1.51 | 4.37 | 1.52 |
| Generation X | 4.11 | 1.53 | 5.42 | 1.19 | 4.72 | 1.43 | 4.43 | 1.39 |
| Baby Boomers | 4.20 | 1.51 | 5.35 | 1.51 | 4.86 | 1.41 | 4.47 | 1.55 |
| MFS/dimension | 4.19 | 1.49 | 5.33 | 1.30 | 4.73 | 1.40 | 4.42 | 1.43 |

Table 2. Mean score per cohort per dimension

Table 3 presents the results of the ANOVA test which explores generational cohort differences and the wine attributes (dimensions) considered important in order for them to choose a specific wine. From Table 3 it is apparent that the four generational cohort groups did not show differences in their interest regarding wine characteristics. This indicates that the cohort groups were similar in their choice behavior toward wine attributes.

| Dimensions | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Core terroir | Between Groups | 2.126 | 3 | .709 | .317 | .813 |
| | Within Groups | 808.301 | 362 | 2.233 | | |
| | Total | 810.427 | 365 | | | |
| Product outcome | Between Groups | 2.520 | 3 | .840 | .492 | .688 |
| | Within Groups | 617.917 | 362 | 1.707 | | |
| | Total | 620.437 | 365 | | | |
| Human terroir and gastronomy | Between Groups | 1.279 | 3 | .426 | .217 | .885 |
| | Within Groups | 712.369 | 362 | 1.968 | | |
| | Total | 713.647 | 365 | | | |
| Communication terroir | Between Groups | .469 | 3 | .156 | .076 | .973 |
| | Within Groups | 741.111 | 362 | 2.047 | | |
| | Total | 741.580 | 365 | | | |

Table 3. ANOVA results regarding wine selection dimensions and cohorts

## DISCUSSION

From the results of this study, it appears that Greek wine consumers are not "heavy users" of the product, but moderate ones, with generation X being the cohort that consumes wine the most frequently (overall), while generation Y drinks wine more frequently per week, as compared to the other cohorts. One reason could be the consumption of ouzo, which is a traditional drink. These results are partially in line with other researchers such as Bruwer et al. (2011); Fountain and Lamb (2011) and Seyedimany and Koksal (2022).

Another major result is that cohorts self-assessed themselves as having very limited or limited wine knowledge, rising the topic of educating consumers about wine and its attributes. This result is in line with the results of Stergiou (2019) and Tzimitra-Kalogianni *et al.* (1999).

Of the four dimensions of wine attributes considered important three have MFS<5.00, being in the "indifferent" zone. Only one dimension has MFS>5.00, i.e., the dimension "Product outcome", with MFS=5.33, being the highest of the four, meaning that cohorts consider "somewhat important" mainly the features of the product rather the terroir features that are the cause of the product outcome. Additionally, the dimension "Human terroir and gastronomy" has MFS=4.73, meaning that for the cohorts this dimension *tends* to be "somewhat important".

The results of this study cannot be directly compared to other studies since different variables and approaches were utilized. Though, indirectly they somewhat are in line with the results of Koksal (2019). Though this comparison is made with extreme cautious since Koksal (2019) found that "there are some differences among the generational cohorts with regard to price, label and packaging and grape variety. The wine attributes that Koksal (2019) detected as important by his study, do not fall in a single dimension of our study, but in two, namely "core terroir" and "human terroir". Moreover, in our study, price was ranked third and as "somewhat important" (MS=5.39). As to the other elements,

namely, label and packaging and grape variety, our study found that cohorts rated them with MS<5.00, thus in the indifferent zone. On the other hand, Koksal (2019, p.467) in his study found that "Millennials rated price as the most important wine attribute, followed by Generation Z, Generation X, and baby Boomers. The grape variety was assessed as the most important attribute by baby boomers, followed by Generation Z and Generation X. Grape variety was not rated as important by Millennials. Label and packaging were found to be a very important attribute by Generation X, Millennials, Generation Z, and Baby Boomers, respectively".

## IMPLICATIONS

This study reveals the necessity of cohorts' education regarding wine and wine terroir attributes through different means of education, depending on the cohort. For example, wineries can develop a YouTube channel informing potential customers about what wine terroir is and its significance in wine production and products' outcome. Additionally, influencers and Instagram could promote wine attributes and wineries pointing out their specific terroir and the taste particularity that it has as a final product. Internet and social media would target mainly the younger generations, while television through cooking shows analyzing the specific wine would be appropriate for the older ones.

## CONCLUSION, LIMITATIONS, AND DIRECTIONS FOR FUTURE RESEARCH

The present empirical study contributes to the extant literature on cohort differences and wine and wine terroir attributes considered important in wine choice, and sheds light on their behavior. Nevertheless, it also exhibits limitations that are unavoidable. First of all, due to economic and time constraints an online collection method was utilized, restricting those that did not have access to the internet, the ability to participate in the research, even though they are wine consumers. Also, a -one-country study is implemented, and it would be of interest if other countries cohorts' behavior is similar to the Greek cohorts.

However, it should be noted that this study is an exploratory study that has not yet been completed, being an additional limitation of the present findings. For so, with its results we can get a "first picture" of the cohorts' behaviour and wine and wine terroir important by cohort's attributes. Therefore, although the sample is considered small, it is adequate for the research objectives and data analysis but are limited to the sample used and cannot be generalized. These limitations may be important for future research.

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## ETHICAL APPROVAL

"There are no ethical issues involved in the processing of the questionnaire data used in the study. The necessary consents have been obtained by the persons involved, and the anonymity of the participants has been secured. All procedures performed in studies involving human participants were in accordance with the ethical standards of the International Hellenic University research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards".

## REFERENCES

Barham, E. (2003), "Translating terroir: the global challenge of French AOC labeling", Journal of Rural Studies, Vol. 19 No. 1, pp. 127–138, doi: 10.1016/S0743-0167(02)00052-9.

Bramley, R.G.V. and Gardiner, P.S. (2021), "Underpinning terroir with data: a quantitative analysis of biophysical variation in the Margaret River region of Western Australia", Australian Journal of Grape and Wine Research, Vol. 27 No. 4, pp. 420–430, doi: 10.1111/ajgw.12491.

Bruwer, J., Saliba, A. and Miller, B. (2011), "Consumer behaviour and sensory preference differences: implications for wine product marketing", Journal of Consumer Marketing, Vol. 28 No. 1, pp. 5–18, doi: 10.1108/07363761111101903.

Capitello, R., Agnoli, L., Charters, S. and Begalli, D. (2021), "Labelling environmental and terroir attributes: Young Italian consumers' wine preferences", Journal of Cleaner Production, Vol. 304, p. 126991, doi: 10.1016/j.jclepro.2021.126991.

Castelló, E. (2021), "The will for terroir: A communicative approach", Journal of Rural Studies, Vol. 86, pp. 386–397, doi: 10.1016/j.jrurstud.2021.06.007.

Charters, S. (2010), "Marketing terroir: A conceptual approach", presented at the Proceedings of the 5th International Academy of Wine Business Research Conference, Auckland, New Zealand, pp. 8–10.

Charters, S., Spielmann, N. and Babin, B.J. (2017), "The nature and value of terroir products", European Journal of Marketing, Vol. 51 No. 4, pp. 748–771, doi: 10.1108/EJM-06-2015-0330.

De Salvo, M., Begalli, D., Capitello, R., Agnoli, L. and Tabouratzi, E. (2017), "Determinants of winegrowers' profitability: evidence from an Eastern Europe wine region", EuroMed Journal of Business, Vol. 12 No. 3, pp. 300–315, doi: 10.1108/EMJB-12-2016-0043.

Dimara, E. and Skuras, D. (2003), "Consumer evaluations of product certification, geographic association and traceability in Greece", European Journal of Marketing, Vol. 37 No. 5/6, pp. 690–705, doi: 10.1108/03090560310465099.

Dubos, J. (1984), "[Importance of" terroir" as a factor of the qualititative differentiation of wines [climate, soil; agronomical, psychosociological and economic aspects]]", Bulletin de l'OIV (France).

Espejel, J. and Fandos, C. (2009), "Wine marketing strategies in Spain: A structural equation approach to consumer response to protected designations of origin (PDOs)", International Journal of Wine Business Research, Vol. 21 No. 3, pp. 267–288, doi: 10.1108/17511060910985980.

Espejel, J., Fandos, C. and Flavián, C. (2011), "Antecedents of Consumer Commitment to a PDO Wine: An Empirical Analysis of Spanish Consumers", Journal of Wine Research, Vol. 22 No. 3, pp. 205–225, doi: 10.1080/09571264.2011.622516.

Fountain, J. and Lamb, C. (2011), "Generation Y as young wine consumers in New Zealand: how do they differ from Generation X?", edited by Mueller, S.International Journal of Wine Business Research, Vol. 23 No. 2, pp. 107–124, doi: 10.1108/17511061111142981.

Giacomarra, M., Galati, A., Crescimanno, M. and Vrontis, D. (2020), "Geographical cues: evidences from New and Old World countries' wine consumers", British Food Journal, Vol. 122 No. 4, pp. 1252–1267, doi: 10.1108/BFJ-08-2019-0580.

Hollebeek, L.D., Jaeger, S.R., Brodie, R.J. and Balemi, A. (2007), "The influence of involvement on purchase intention for new world wine", Food Quality and Preference, Vol. 18 No. 8, pp. 1033–1049, doi: 10.1016/j.foodqual.2007.04.007.

Karapetsas, N., Alexandridis, T.K., Bilas, G., Theocharis, S. and Koundouras, S. (2023), "Delineating Natural Terroir Units in Wine Regions Using Geoinformatics", Agriculture, Vol. 13 No. 3, p. 629, doi: 10.3390/agriculture13030629.

Koksal, M.H. (2019), "Differences among baby boomers, Generation X, millennials, and Generation Z wine consumers in Lebanon: Some perspectives", International Journal of Wine Business Research, Vol. 31 No. 3, pp. 456–472, doi: 10.1108/IJWBR-09-2018-0047.

Laville, P. (1993), "Unités de terroir naturel et terroir. Une distinction nécessaire pour redonner plus de cohérence au système d'appellation d'origine", Bull. OIV, Vol. 745 No. 746, pp. 227–251.

Moran, W. (2001), "Terroir–the human factor", Australian and New Zealand Wine Industry Journal, Vol. 16 No. 2, pp. 32–51.

Orth, U.R., McGarry Wolf, M. and Dodd, T.H. (2005), "Dimensions of wine region equity and their impact on consumer preferences", Journal of Product & Brand Management, Vol. 14 No. 2, pp. 88–97, doi: 10.1108/10610420510592563.

Patterson, T. and Buechsenstein, J. (2018), Wine and Place: A Terroir Reader, Univ of California Press.

Ribeiro, J.C. and Santos, J.F. (2007), "Consumer perception of Portuguese quality wine and the region-of-origin effect", presented at the 47th Congress of the European Regional Science Association, Paris.

Riviezzo, A., Garofano, A., Granata, J. and Kakavand, S. (2017), "Using terroir to exploit local identity and cultural heritage in marketing strategies: An exploratory study among Italian and French wine producers", Place Branding and Public Diplomacy, Vol. 13 No. 2, pp. 136–149, doi: 10.1057/s41254-016-0036-4.

Scorrano, P., Fait, M., Iaia, L. and Rosato, P. (2018), "The image attributes of a destination: an analysis of the wine tourists' perception", EuroMed Journal of Business, Vol. 13 No. 3, pp. 335–350, doi: 10.1108/EMJB-11-2017-0045.

Seyedimany, A. and Koksal, M.H. (2022), "Segmentation of Turkish Wine Consumers Based on Generational Cohorts: An Exploratory Study", Sustainability, Vol. 14 No. 5, p. 3031, doi: 10.3390/su14053031.

Sigala, M. (2019), "The Synergy of Wine and Culture: The Case of Ariousios Wine, Greece", in Sigala, M. and Robinson, R.N.S. (Eds.), Management and Marketing of Wine Tourism Business, Springer International Publishing, Cham, pp. 295–312, doi: 10.1007/978-3-319-75462-8_15.

Sigala, M. and Dimopoulou, M. (2017), "Does terroir matter for wine and wine destination marketing? The case of Greek wines and wine consumers", presented at the 10th Academy of Wine Business Research Conference, 2017 AWBR Conference "People, Performance & Passion: Evolving Research Perspectives" hosted by the School of Business and Economics, Sonoma State University and the Wine Business Institute, Sonoma and Napa Wine Regions, Rohnert Park, California, July, pp. 25–28.

Skuras, D. and Vakrou, A. (2002), "Consumers' willingness to pay for origin labelled wine: A Greek case study", British Food Journal, Vol. 104 No. 11, pp. 898–912, doi: 10.1108/00070700210454622.

Smith Maguire, J. and Charters, S. (2021), "Aesthetic logics, terroir and the lamination of grower champagne", Consumption Markets & Culture, Vol. 24 No. 1, pp. 75–96, doi: 10.1080/10253866.2020.1730823.

Stavridou, K., Soufleros, E.H., Bouloumpasi, E. and Dagkli, V. (2016), "The Phenolic Potential of Wines from French Grape Varieties Cabernet Sauvignon, Merlot and Syrah Cultivated in the Region of Thessaloniki (Northern Greece) and Its Evolution during Aging", Food and Nutrition Sciences, Vol. 07 No. 02, pp. 122–137, doi: 10.4236/fns.2016.72014.

Stergiou, D.P. (2019), "Generation Z as Young Winery Visitors in Greece", in Sigala, M. and Robinson, R.N.S. (Eds.), Management and Marketing of Wine Tourism Business, Springer International Publishing, Cham, pp. 63–79, doi: 10.1007/978-3-319-75462-8_4.

Tsiakis, T., Anagnostou, E., Granata, G. and Manakou, V. (2022), "Communicating Terroir through Wine Label Toponymy Greek Wineries Practice", Sustainability, Vol. 14 No. 23, p. 16067, doi: 10.3390/su142316067.

Tzimitra-Kalogianni, I., Papadaki-Klavdianou, A., Alexaki, A. and Tsakiridou, E. (1999), "Wine routes in Northern Greece: consumer perceptions", British Food Journal, Vol. 101 No. 11, pp. 884–892, doi: 10.1108/00070709910301391.

Tziolas, E., Karapatzak, E., Kalathas, I., Karampatea, A., Grigoropoulos, A., Bajoub, A., Pachidis, T., et al. (2023), "Assessing the Economic Performance of Multipurpose Collaborative Robots toward Skillful and Sustainable Viticultural Practices", Sustainability, Vol. 15 No. 4, p. 3866, doi: 10.3390/su15043866.

Van Leeuwen, C., Roby, J.-P., Pernet, D. and Bois, B. (2010), "Methodology of soil-based zoning for viticultural terroirs", Bulletin de l'OIV, Vol. 83 No. 947, p. 13.

Van Leeuwen, C. and Seguin, G. (2006), "The concept of terroir in viticulture", Journal of Wine Research, Taylor & Francis, Vol. 17 No. 1, pp. 1–10.

Vaudour, E. (2002), "The Quality of Grapes and Wine in Relation to Geography: Notions of Terroir at Various Scales", Journal of Wine Research, Vol. 13 No. 2, pp. 117–141, doi: 10.1080/0957126022000017981.

Vaudour, E. (2003), Les Terroirs Viticoles: Définitions, Caractérisation et Protection, Dunod.

Vrontis, D., Bresciani, S. and Giacosa, E. (2016), "Tradition and innovation in Italian wine family businesses", British Food Journal, Vol. 118 No. 8, pp. 1883–1897, doi: 10.1108/BFJ-05-2016-0192.

Vrontis, D., Thrassou, A. and Czinkota, M.R. (2011), "Wine marketing: A framework for consumer-centred planning", Journal of Brand Management, Vol. 18 No. 4–5, pp. 245–263, doi: 10.1057/bm.2010.39.

Warman, R.D. and Lewis, G.K. (2019), "Wine place research: Getting value from terroir and provenance in premium wine value chain interventions", International Journal of Wine Business Research, Vol. 31 No. 4, pp. 493–508, doi: 10.1108/IJWBR-09-2018-0052.

Wiedmann, K.-P., Behrens, S., Klarmann, C. and Hennigs, N. (2014), "Customer value perception: cross-generational preferences for wine", British Food Journal, Emerald Group Publishing Limited, Vol. 116 No. 7, pp. 1128–1142, doi: 10.1108/BFJ-01-2013-0027.

# SMALL-SCALE FISHERIES & HUMAN RIGHTS

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## ABSTRACT

Food and Agricultural Organization of the United Nations (FAO) adopted in 1995 the Code of Conduct for Responsible Fisheries, as a voluntary instrument. Furthermore, the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (''SSF Guidelines'') were adopted by FAO in June 2014 as a complement to the Code. They take an anthropocentric and ecological approach to small-scale fisheries, highlighting the right to adequate food, which is an emblematic fundamental right of the current set of 4G rights, and also the rights of women as well as the 4G rights of Indigenous People, whose relationship with theatre is not explicitly tackled in the United Nations Declaration on the Rights of Indigenous People. EU has not sufficiently observed SSF Guidelines, for instance European Commission does not accomplish the required monitoring of EU fleets in some cases. However, the main problem is not related to EU but consists in the total opacity and the almost official disinterest of the major fishing powers, particularly the Asians.

*Keywords: FAO; human rights; Indigenous People; littoralization; small-scale / artisanal fisheries; small-scale coastal fishing; SSF Guidelines; right to adequate food; right to water*

## INTRODUCTION: THE WATER ENDOWED WITH ITS OWN LAWS

The water is a sui generis thing, as it is endowed with its own laws. First of all, unlike all other liquids which thicken when cooled, the ice is lighter; as the compressed materials become more solid, the ice becomes liquid again; and one can imagine the surprise of the English naturalist Charles Darwin (1809-1882) when he found that the abyss had a constant temperature of 4° C (Cabé). Like man-made laws, the above-mentioned laws include main rules and also exceptions. In this order of ideas, in the ocean the aquatic temperature does not remain unchanged, but it varies according to the depth in the sense that the deepest waters are generally colder than those of the surface and those close to it. But this rule is followed by the exception relating to the abysses, which are located in an isothermal zone, called ''hypolimnion''. There, temperatures are extremely stable throughout this vast area, ranging from about 0.5°C to 4°C. The density of water is maximum at 4°C and therefore the

temperature at the bottom of a lake or ocean does not fall below 4°C (because the coldest waters are lighter), something that allowed life forms to survive during the coldest geological periods. So, the water has proved to be hospitable for biodiversity.

Besides, another law that rules water refers to the very special relationship of man with this good. It is indicative of this intimate emotional relationship that water is not traded between States, unlike all other resources. If a country restricts the import of any resource through high tariffs, the exporting countries take the matter to the World Trade Organization (WTO) to settle their dispute. However, not a country in the world exports its water due to very strong internal opposition while the only solution for NAFTA (North American Free Trade Agreement) to be approved by the Canadian Parliament was to explicitly declare that it did not apply to water.

The current paper focuses on the phenomenon of fisheries as an organized activity which is related to the catching of fish and other aquatic animals. More precisely, it takes an approach to small-scale fisheries, from the specific point of view of recognition and protection of human rights.

The RQ is the following: *We suppose that the human rights of persons involved in small-scale fisheries are sufficiently protected.*

At first, this research deals with the historical process towards the adoption of the voluntary guidelines of the Food and Agricultural Organization of the United Nations (FAO) relevant to small-scale fisheries.

Afterwards, it examines the content of this text, with an emphasis to the right to food.

Besides, it presents critically some newer developments on the matter.


## THE PROCESS TOWARDS THE ADOPTION OF SSF GUIDELINES

FAO, founded in 1945, is a specialized agency of the United Nations, which leads international efforts to defeat hunger of mankind. More precisely, the goal of this international organization is to achieve food security and make sure that people have regular access to enough high-quality food to lead active, healthy lives.

The small-scale fisheries or artisanal fisheries is a mainstreaming concept as far as the research on fisheries is concerned, but there is no official definition of this phenomenon. It is often defined with a negative formulation, namely in contraposition to industrial fisheries, which are based on sophisticated technologies implicating a heavy investment on the matter. For European Union (EU), which is a member of FAO, it corresponds to ''small-scale coastal fishing''. According to article 3 of Regulation (EU) No 508/2014 of the European Parliament  and the Council, of 15 May 2014, on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No 2328/2003, (EC)

No 861/2006, (EC) No 1198/2006 and (EC) No 791/2007 and Regulation (EU) No 1255/2011 of the European Parliament and of the Council, the small-scale coastal fishing is defined as *''fishing carried out by fishing vessels of an overall length of less than 12 metres and not using towed fishing gear as listed in Table 3 of Annex I to Commission Regulation (EC) No 26/2004''*.

Anyway, artisanal fisheries are considered as a key factor in the framework of the fight against hunger. However, the coastal fisheries have to cope with a lot of challenges, including the fact that many coastal ressources are fully exploited, let alone overexploited. This fact has led to a competition among fishers as well as to conflicts. It is to point out that littoralization is a very intense phenomenon, nowadays, which consists in concentration of populations and economic activities in the littoral of coastal States whilst it is also relevant to the marine waters of national sovereignty, such as internal waters and the littoral zone (Maniatis, 2023).

In terms of law, artisanal fisheries have been for a long time absent from any considerations. This tendency of marginalization was favorable to the massive development of industrial fisheries.

In 1995, FAO adopted the Code of Conduct for Responsible Fisheries, a voluntary instrument which is probably the most cited, high-profile and widely diffused global fisheries instrument in the world, after the United Nations Convention on the Law of the Sea (UNCLOS). This treaty is alternatively called ''Constitution for the oceans'' (De Pooter). It is not about a posterior invention but a historical fact relevant to the legislative process. Indeed, this text was described as a ''Constitution for the oceans'' by the President of the third Conference of the law of the sea, at the time of its formal adoption (Morin, 2022). Tommy T. B. Koh, coming from Singapore, made speech of the elaboration of a constitution for the oceans, which was a common dream of the participants (Anonyme). The UNCLOS has been completed by the United Nations Fish Stocks Agreement (UNFSA), a multilateral treaty created in 1995 by the United Nations to enhance the cooperative management of fisheries resources that span wide areas, and are of economic and environmental concern to a number of nations.

Although article 6.18 of the Code recognizes the importance of the contribution of artisanal fisheries for the employment, the incomes and the food security, the Code is not particularly devoted to the specific needs of this sector (Vallette *et al.*, 2022). The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication are commonly known with the term ''SSF Guidelines''. They have been adopted in June 2014 as a complement to the above-mentioned Code, to provide complementary guidance with respect to small-scale fisheries in support of the overall principles and provisions of that text (FAO, 2015). They are innovative as they have constituted the scope of negotiations among all the participating parties (Valette *et al.*, 2022). This participatory process directly involved more than 4000 representatives of small-scale fishing

communities, civil society organizations, governments, regional organizations and other stakeholders from more than 120 countries.

## THE SSF GUIDELINES: PROMOTION OF HUMAN RIGHTS, SUCH AS TO FOOD

SSF Guidelines have a pioneer value, given that they are just the first instrument of international law which is specifically devoted to artisanal fisheries. It adopts an anthropocentric and ecological approach, which is obvious in Part 1; The objective No. a is ' *'to enhance the contribution of small-scale fisheries to global food security and nutrition and to support the progressive realization of the right to adequate food''*.

It is notable that the right to food exemplifies the current era of the fourth generation of fundamental rights, worldwide (from 1992 to date) (Maniatis, 2019). This right, such as other institutions, like presidentialism, particularly are related to Latin America whilst the 4G right to sovereign debt restructuring is related to Latin America countries, such as Argentina, but also mainly to African ones, including above all Zambia. Including the right to food into constitutions is an important step but insufficient condition to enforce it (Tura, 2018). Anyway, it is recommended Zambia consecrate the human right to food in its Constitution, more precisely in its Bill of rights, and make it a mainstreaming political priority, along with the rights to health and to education. Besides, droughts have highlighted the connection of the right to food with the 3G human right to water, which could be itself consecrated in the Constitution of Zambia, like in the Constitutions of other polities which have omitted it so far.

In the inclusive text of SSF Guidelines the human being has been placed again in the center of management; an authentic revival is then triggered and the artisanal fisheries sector is protected in all its aspects by those Guidelines (Valette *et al.*, 2022), which are explicitly based on an approach to consecration and protection of human rights, in general. Article 3.1 cites: '' *These Guidelines are based on international human rights standards, responsible fisheries standards and practices and sustainable development according to the United Nations Conference on Sustainable Development (Rio+20) outcome document ' The future we want', the Code and other relevant instruments, paying particular attention to vulnerable and marginalized groups and the need to support the progressive realization of the right to adequate food''*.

In this anthropocentric context, SSF Guidelines are not limited to a general approach to all human beings, but they put the stress on some social groups, such as women and Indigenous People. As far as women are concerned, they enact a preponderant but undervalued role in the artisanal fisheries sector, due to a lack of statistical data (*Valette et al.*, 2022). Chapter 8 is specifically devoted to the principle of gender equality and makes an explicit reference to the 1979 Convention on the

Elimination of All Forms of Discrimination against Women. It is to underline that this United Nations text is the first international legal tool to preview explicitly the human right to water. According to par. 2 of article 14 on ''Rural Women'', women in rural areas (consequently, rural women who offer services in the small-scale fisheries sector) have the right '*To enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications*''. Nevertheless, to date no international convention exists on the explicit consecration of the right to water for all people and not only for a specific social group. Besides, in 2018 a Gender Handbook was adopted by FAO to back up SSF Guidelines on the crucial question of gender equality.

As far as Indigenous People are concerned, just like in case of women, a specific text has been adopted by United Nations, called ''United Nations Declaration on the Rights of Indigenous People''. However, the legislative treatment of the system of indigenous cultures is more or less imperfect; this deficit ranges from their traditional art expressions, such as theatre (as in the Declaration there is no use of the term ''theatre''), to their rights to be fully assimilated into the social activities of conventional individuals, including the symmetrical rights to tourist movement (tourism) and tourist supply (hospitality). Far from being reduced to an attraction for tourists in their own place of residence, they deserve to be able to enact the role of tourist and also of tourist service provider, while inspiring another way of life approach, based on the culture of respect for nature and others.

Anyway, SSF Guidelines protect Indigenous People in Chapter 3, with the principle No. 2 ''Respect of cultures'', related to traditional and local knowledge and practices of small-scale fishing communities, although an explicit reference to the principle of multiculturalism would be recommended. It is to point out that it is rather about a taboo in international law, at least as far as the term ''multiculturalism'' is concerned. Besides, principle No. 6 ''Consultation and participation'' makes a special reference to indigenous people, as for the active, free, effective, meaningful and informed participation of small-scale fishing communities. It is to underline that Chapter 5.4 cites that ''*Local norms and practices, as well as customary or otherwise preferential access to fishery resources and land by small-scale fishing communities including indigenous people and ethnic minorities, should be recognized, respected and protected in ways that are consistent with international human rights law*''. This disposition is particularly important because it recognizes the value of the so-called ''ius non scriptum'', namely of the unwritten law, exemplified by consecrated social practices and customs, which is in process of marginalization in the developed countries.

## NEWER DEVELOPMENTS RELEVANT TO SMALL-SCALE FISHERIES

Costa Rica, being considered as a champion of SSF Guidelines, has transposed them in its legal order through a decree of August 2015, making this volunteer and non-binding text a legally binding

text for that State.  However, no other State has transposed it in its legal order (Valette *et al.*, 2022).

 Besides, Goal 14 of the 17 Sustainable Development Goals, related to the 2030 Agenda for Sustainable Development, which was adopted by UN in September 2015, is the following: ''*To conserve and sustainable use the world's ocean, seas and marine resources*''. It is added that current efforts to protect key marine environments and small-scale fisheries, and to invest in ocean science are not yet meeting the urgent need to safeguard this vast, yet fragile, resource. The United Nations General Assembly declared the year 2022 as the International Year of Artisanal Fisheries and Aquaculture (IYAFA) whilst FAO was the leading agency for the celebration.

 As far as EU is concerned, it has to enact a role of major importance in terms of application of SSF Guidelines. For instance, due to the presence of its fleets in the waters of many third countries, it must set an example at international level (Valette *et al.*, 2022). Through its Sustainable Fisheries Partnership Agreements (SFPAs) which allow the EU's external fleet to operate in the waters of third countries (mainly West Africa), in exchange for a financial counterpart which includes a support for the sector which must ''take into account the needs of local communities'', but also by monitoring more closely (much more closely) the activities of its fleets which do not fall within this framework and which operate through licenses directly with coastal States, and for which the European Commission does not ensure the required monitoring, although they are subject to the conditions of Regulation (EU) 2017/2403 on the sustainable management of external fishing fleets (SMEFF), particularly in terms of the sustainability of the activities (conditions of article 5) (Valette *et al.*, 2022). And there, where the bottom still hurts too much, is when it comes to the activities of fleets reflagged outside the EU but whose interests remain in the EU; the activities of the so-called ''beneficial owners'' do not fall within any legal framework at the present time (Valette *et al.*, 2022).

## CONCLUSION

 The RQ has not been fully confirmed, because SSF Guidelines did not include, at least explicit, some modern guarantees, such as ''multiculturalism'' and the right to water. The latter right should be fully recognized in comparative law, not only as for its potable use, which is sometimes explicitly consecrated against, even implicitly, other types of uses, such as irrigation. Furthermore, the RQ has not been confirmed as long as the application, including the transposition, of SSF Guidelines, remains very limited. Indeed, it is not plausible that only one State has transposed formally them in its legal order.

 Besides, EU, particularly European Commission, does not accomplish its mission in a way that is in full accordance with this international text. However, it is to point out that the main problem is not

related to EU but consists in the total opacity and the almost official disinterest of the major fishing

powers, particularly the Asians (Valette et al., 2022).

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Fisheries with a human face appears to be the condition for sustainable fisheries, which naturally

presupposes integrating the traditional knowledge of fishermen into management mechanisms, but

also reintegrating humans into the marine ecosystem (Ros, 2022).


## REFERENCES

Anonyme, '' ''Une constitution pour les océans''. Remarques prononcées par Tommy T. B. Koh (Singapour) Président de la troisième Conférence des Nations Unies sur le droit de la mer'', https://www.un.org/Depts/los/convention_agreements/texts/koh_french.pdf

Boré Eveno, V. (2021), ''Chapitre 117. Zone intérnationale et régime de l'exploitation des grands fonds marins'', in P. Chaumette (dir.), Droits Maritimes, 4e édition, Dalloz., pp. 177-193.

Cabé, Ch., ''Alain Gachet Le sourcier physician'', L'Atlas de l'eau et des océans, La Vie – le Monde, Hors-série, p. 9.

FAO (2015), Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication, Rome.

Goffaux Callebaut, G. (2018), ''La notion de patrimoine maritime. Quelques amers'', in Boilet, N., Goffaux Callebaut, G. (dir.), Le patrimoine maritime : entre patrimoine culturel et patrimoine naturel. Actes du colloque de Brest 23 et 24 juin 2016, Éditions A. Pédone, Paris,  pp. 27-35.

Maniatis, A. (2023), ''Approche du littoral'', Digesta Online.

Maniatis, A. (2019), ''Zambian Public Economic Law'', Archives of Economic History, Vol. XXXI, No 1-2, pp. 85-98.

Maniatis, A. (2021), ''Global Ocean Governance (GOG)'', in 14th Annual Conference of the EuroMed Academy of Business: Contemporary Business Concepts and Strategies in the new Era, pp. 504-514.

Maniatis, A. (2020), ''Gray-green Environmental Law. A commentary on Council of State 1690/2020 (Section E)'', Perivallon & Dikaio, No. 4 (in Greek), pp. 628-634.

Maniatis, A. (2020), ''Zambian constitutional amendment process'', Int. J. Human Rights and Constitutional Studies, Vol. 7, No. 2, pp. 158-169.

Morin, M. (2022), ''BBNJ: It's a long way to…?'', Neptunus, e.revue, Vol. 28, 2.

Nations Unies (2023), ''Accord historique à l'ONU sur la protection de la biodiversité marine en haute mer'', 5 mars, https://news.un.org/fr/story/2023/03/1132947

De Pooter, H., ''Une Constitution de l'ONU pour les océans'', La Vie - Le Monde, hors-série, pp. 144-145.

Roche, C. (2018), '' Les enjeux éthiques : La mer comme patrimoine commun ?'', in Boilet, N., Goffaux Callebaut, G. (dir.), Le patrimoine maritime : entre patrimoine culturel et patrimoine naturel. Actes du colloque de Brest 23 et 24 juin 2016, Éditions A. Pédone, Paris, pp. 37-45.

Ros, N. (2022), ''La pêche durable dans le contexte de privatisation des mers'', ADMO, Tome XL, pp. 53-91.

Tura, (2018), ''The right to Food and Its Justiciability in Developing Countries'', Haramaya Law Review, Vol. 7, pp. 48-74.

Valette, J., Panossian Anaïd (2022), ''2022 : Lumière sur la pêche et l'aquaculture artisanales'', Neptunus, e.revue, Vol. 28 No. 2.

# BBNJ: BYZANTINISM BEYOND NATIONAL JURISDICTION

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## ABSTRACT

Provided that the terms of the articles of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the 1992 Convention on Biological Diversity (CBD) concerning the protection of the environment are respected, it is possible to exploit genetic resources of the Areas Beyond National Jurisdiction (ABNJ). Besides, due to the complexity and the delay of the historical process to adopt an agreement on Biodiversity Beyond National Jurisdiction (BBNJ), which ended up to a draft Agreement just in March 2023, it is possible to attribute to the acronym ''BBNJ'' the meaning ''Byzantinism Beyond National Jurisdiction''. Anyway, if this Agreement enters into force, it will place 30% of the world's oceans in protected areas, devote more money to marine conservation and cover access to and use of marine genetic resources, promoting inter alia the protection of sensitive entities, such as developing countries and Indigenous People (multiculturalism).

*Keywords: Areas Beyond National Jurisdiction (ABNJ); Biodiversity Beyond National Jurisdiction (BBNJ); common heritage of mankind; Convention on Biological Diversity (CBD); Global Ocean Governance (GOG); precaution; United Nations Convention on the Law of the Sea (UNCLOS)*

## INTRODUCTION: BIODIVERSITY AND THE RIO CONVENTIONS

Biodiversity is a question in fashion. It is related to the fourth generation in terms of consecration and development of fundamental rights in constitutional law. This current set of guarantees emerged in 1992, being inaugurated by texts related to the 1992 United Nations Conference on Environment and Development, commonly known as Earth Summit, which ended up to the Rio Declaration on Environment and Development.

This second world conference on the environment, after the initial one which took place in June 1972 in Stockholm and gave birth to the environmental law as well as the third generation of human rights, is related to three international conventions, which have derived directly from it.

These legally binding texts are the following:

- The 1992 Convention on Biological Diversity (CBD), which entered into force on 29 December 1993,

- The 1992 United Nations Framework Convention on Climate Change, which entered into force on 21st March 1994,

- The United Nations Convention to Combat Desertification in those countries experiencing serious drought and/or desertification, particularly in Africa, which was drafted on 17 June 1994 and entered into force on 26 December 1996.

Each text represents a way of contributing to the sustainable development goals of Agenda 21, which was adopted in the Earth Summit. Furthermore, it is notable that the conventions are intrinsically linked, as they are applicable in the same ecosystems, addressing interdependent issues.

This paper deals with the specific question of the regulation of biodiversity which lies beyond jurisdiction of coastal States. The term which has prevailed to refer to is ''Biodiversity Beyond National Jurisdiction'' and is commonly known by the relevant acronym ''BBNJ''. Although the brand name for this novelty is BBNJ, there is also the alternative ''High Seas Treaty''.

At first, the current analysis presents the Convention on the law of the sea and also the phenomenon of global ocean governance.

Then, it refers to the historical process of the United Nations towards the final step of the adoption of the BBNJ agreement.

Afterwards, it takes a critical approach to this process, particularly as far as its duration is concerned.

Besides, it formulates some remarks on the content of the draft Agreement on the matter.


## THE CONSTITUTION FOR THE OCEANS AND GOG

The law of the sea, having traditionally a customary nature, was codified in 1958 for the first time, in form of the four complementary Geneva Conventions. It actually runs the period of its second codification, on the basis of the United Nations Convention on the Law of the Sea (UNCLOS), of 10th December 1982 (Maniatis, 2021). This treaty is sometimes called ''Constitution for the oceans'' by the doctrine (De Pooter). It is not about a posterior invention but a historical fact relevant to the legislative process. Indeed, this text was described as a ''Constitution for the oceans'' by the President of the third Conference of the law of the sea, at the time of its formal adoption (Morin, 2022). Tommy T. B. Koh, coming from Singapore, made speech of the elaboration of a constitution for the oceans, which was a common dream of the participants (Anonyme).

The Convention entered into force in a problematic way, namely with a big delay, just on 16th November 1994, whereas the process to modify some of its dispositions on the Area of the international seabed was ongoing. It was about the Agreement relating to the Implementation of Part XI of the UNCLOS, which modified some dispositions in favor of the developed countries, without deleting the mainstreaming declaration on the legal nature of the Area as a common heritage of

mankind. A final agreement on this text was made on 3rd June 1994 and it was formally adopted by the United Nations General Assembly on 17th August 1994, namely four years after the relevant invitation issued by the Secretary General (Morin, 2022). This agreement entered into force on 28th July 1996.

Besides, a special policy has recently emerged, in the context of the oceans, which have acquired an important dynamic in juridical and political terms. This policy is called ''International Ocean Governance'', which means processes, agreements, rules, institutions etc. on the way human beings use the ocean and its resources. This mechanism is applicable in the set of two complementary zones, such as the Area of the international seabed and the correspondent high seas. This system is known with the term ''Areas Beyond National Jurisdiction (ABNJ)'' and covers almost half of the planet's surface. International Ocean Governance includes the Regional and also the Global Ocean Governance, which is commonly known with the acronym ''GOG''. It is notable that recently the actual content of GOG seems to have been limited almost to the case of BBNJ, whilst still in 2019 the theoretical approach to that concept, which is new and rather vague, was wider, although it was far away from the need to protect underwater cultural heritage, such as historical shipwrecks, located in the Area. So, an already fragmentary approach to the assets of the ABNJ has given the last years the impression that it has followed a narrower direction.

## THE PROCESS TOWARDS THE ADOPTION OF THE BBNJ CONVENTION

Since its entry into force, CBD has been applicable in the matter of genetic resources, but it does not prevent the rational exploitation of these resources by the States parties. Furthermore, in virtue of the Agreement on trade-related aspects of intellectual property rights (TRIPS) of 15 April 1994, which was concluded within the framework of the World Trade Organization (WTO) and is the most comprehensive multilateral agreement on intellectual property, living things are patentable with rare exceptions. The distinction between tangible and intangible heritage does not seem to be fully effective for certain elements of maritime heritage, such as marine and coastal biodiversity; a priori material, biodiversity as it is treated today is so conceptualized that it becomes immaterial (Goffaux Callebaut, 2018). Provided that the terms of the articles of the UNCLOS and the CBD concerning the protection of the environment are respected, it is theoretically possible to exploit deep genetic "resources" (Boré Eveno, 2021).

The resources of the Area covered by Part XI of the UNCLOS are the mineral ones and they are endowed with the label ''common heritage of mankind'', like the Area itself. It is to underline that Article 149 of the UNCLOS on the objects of archaeological or historical character in the Area does not consecrate them as "common heritage of humanity", in the same way as mineral resources, despite the proposals put forward during the relevant Conference by Greece and Turkey. In a similar way, the

elements of biodiversity present on the ground and in the subsoil of this zone, such as the organisms living in the hydrothermal vents, are not literally its "resources" and cannot be legally attached to it (Morin, 2022). However, since then, the exploitation of genetic resources has moved out of the realm of science fiction (Roche, 2018).

The first discussions on BBNJ took place in 2004 as part of the preparation of the resolution adopted each year since 1993 on the law of the sea, by the United Nations General Assembly. This institution decided to create an ad hoc working group, open to all members of the United Nations, including those who have not ratified or signed the Constitution for the oceans, such as the USA. This group would be responsible for studying issues relating to the conservation and sustainable use of marine biodiversity in ABNJ. After nine sessions in nine years, from February 2006 to January 2015, the group resulted in the recommendation to the attention of the General Assembly for the adoption of a binding legal instrument within the framework of UNCLOS. It is to underline that a significant number of States were not in favor of opening negotiations in this area (notably Russia, Japan, United States under the Bush administration, Canada, Iceland, etc.) (Morin, 2022).

The United Nations General Assembly in resolution 69/292, of 6[th] July 2015, adopted the aforementioned recommendation and decided to establish a preparatory committee to provide it with recommendations on the elements of a draft text. Furthermore, it decided that negotiations shall address the topics identified in a package agreed in 2011. It is about the conservation and sustainable use of marine biological diversity of ABNJ, in particular, together and as a whole, marine genetic resources, including questions on the sharing of benefits, measures such as area-based management tools, including marine protected areas, environmental impact assessments and capacity-building and the transfer of marine technology. This political initiative presented an opportunity to greatly improve ocean governance (Vierros, 2021).

According to the preparatory report, which was produced in July 2017, the legal text would set out the general principles and approaches guiding the conservation and sustainable use of marine ABJN, such as inter alia the use of marine biological diversity of ABNJ for peaceful purposes only, the sustainable development and the polluter-pays principle. As it is implied by the nature of things, the ad hoc committee suggested the consecration of the principle of international cooperation and coordination, at all levels, including north-south, south-south, and triangular cooperation. Another suggested principle consists in special requirements of small islands developing states and least developed countries, including avoiding transferring, directly or indirectly, a disproportionate burden of conservation action onto developing countries. One of the recommended objectives on sharing of benefits is building capacity of developing countries to access and use marine genetic resources of ABNJ.

Besides, it is to pay special attention to the precaution, which could be correlated to the principles of prevention, which is not explicitly mentioned, and of science-based approach, using the best available scientific information and knowledge, including traditional knowledge. This approach should be incorporated in a prior position, given that the precaution is intrinsically dependent in the current status of scientific knowledge. Anyway, the precautionary principle is still a rather controversial matter in both the environmental law and the health law. For instance, France is endowed with the 2004 Charter for the Environment, which has a constitutional vigor, whilst no other EU State mentions explicitly this rule in its Constitution.

Furthermore, it is notable that the Universal Declaration on Bioethics and Human Rights, which was adopted unanimously by UNESCO's general conference on 19 October 2005, omitted this principle. The most important thing on the matter perhaps is not the absence of this standard but its deconstruction in the process of adoption of the Declaration. The standard was previewed in section III, as a risk management tool for public health purposes but it was removed from the final version. This is a matter of political volunteer in the diplomatic context, given that governments, not independent experts, have the last word in every declaration or convention issued by United Nations agencies (Andorno, 2007). The 2005 contradictory approach to the precautionary principle is one of the most eloquent issues of what has been indicated as the ''grey-green character of environmental law'' (Maniatis, 2020).

In its resolution 72/249, of 24[th] December 2017, which was adopted through consensus, the United Nations General Assembly decided to convene an Intergovernmental Conference, under the auspices of the United Nations, to develop the Convention on BBNJ. Those negotiations would be based on the recommendations of the Preparatory Committee, around four main thematic axes, including that of access to and sharing of marine genetic resources as well as the assessment of the impact on the environment (Boré Eveno, 2021).

One of the major topics under discussion have been marine genetic resources, which crystallizes the opposition between developed and developing countries on issues of intellectual property and the value to be given to the concept of ''common heritage of humanity'' for these elements of marine biodiversity, knowing that it is only the Area and its mineral resources that have been legally (according to explicit dispositions of UNCLOS) declared as part of this common heritage (Morin, 2022). In this order of ideas, the doctrine has not hidden its skepticism, if not its pessimism, about this maximalist approach. It noted that whatever the results of the work relating to the future convention, it is unlikely that the concept of the common heritage of humanity will be taken up, especially since - from a perspective of unity of the environment – both the seabed and the high seas are concerned (Roche, 2018).

The above-mentioned Intergovernmental Conference held an organizational meeting in New York, from 16 to 18 April 2018, to discuss organizational issues, including the process for the preparation of the zero draft of the instrument. Afterwards, the first session was held from 4 to 17 September 2018, the second one from 25 March to 5 April 2019 and the third one from 19 to 30 August 2019. The objective was to achieve a new binding legal instrument in 2020, but the project did not have the expected speed.

The fourth session proved to be adventurous, due to unforeseen reasons. More precisely, that session, which had been programmed to be held in 2020 as the last one, was postponed by decisions 74/543 and 75/570 in the context of the crisis of the COVID-19 pandemic. At last, it was conducted from 7 to 18 March 2022 but it did not produce the expected result.

In this chain of meetings which had the profile to be the final step of the protracted process, a fifth session was convened, from 15 to 26 August 2022 pursuant to General Assembly decision 76/564. On the last day, the Conference, in considering the way forward, decided to suspend the session and resume it at a later date to be determined. This unexpected phenomenon caused various comments, such as declarations of small insular countries which expressed their big deception as they had placed a lot on protecting the oceans and sharing the benefits that the marine resources of the high seas offer. Besides, it is indicative of the lack of political will for perfect rapprochement that the delegate from Iceland declared that the Conference had made more progress in two weeks than the progress which had been made in the past decade. A little before this episode of unsuccessful outcome, the doctrine estimated that the text could be formally adopted before the end of 2022 and that the polities could then ratify this agreement, and while remaining optimistic, it could come into force a few years later, 5 or 10 years by example, which would lead towards 2030 (Morin, 2022).

Pursuant to resolution 77/248 of the General Assembly, the resumed fifth session was held from 20 February to 3 March 2023. Although a solution was expected in that meeting, at the end the Conference decided to resume at a later date with a view to adopting the agreement. The outcome of that meeting is considered as the finalised draft agreement on BBNJ, not the definite official text. Nevertheless, media covering this event did not clarify this parameter of the decision, but they made the image of an already made agreement. Furthermore, it is notable that they did not emphasize this development and so public opinion remained essentially unaware of the progress achieved, let alone of the content of the rules which seemed to have been already adopted.

In this connection, the General Assembly, in its decision 77/556 of 18th April 2023 requested the Secretary-General to convene a further resumed fifth session of the conference on 19 and 20 June 2023, tentatively, or on a date to be determined in consultation with the President of the conference (United

Nations, 2023). This session is expected to adopt the final version, resulting from a process focusing on formal and not also on material aspects of the text of the draft agreement.

## BYZANTINISM BEYOND NATIONAL JURISDICTION

The main difference between the mainstreaming TV serials and the historical process of the conclusion of this international tool is that public opinion remained clearly in the margin. Perhaps the reduction of the people in this role of unaware, passive spectator is rather favourable to governments as long as they are exempted from pressure to cope with this issue of prolonged and rather fruitless diplomacy, as soon as possible. This situation proves to be important, compromising the prestige of the States and the international community.

It is to point out that nowadays secret diplomacy seems to be less institutionalized than in the past, when Constitutions made an explicit reference to the eventuality of secret articles of an international treaty, which however were supposed not to reverse the content of the public ones of the same text. The diplomatic efforts to establish a multilateral international Convention, even though it is about of world-range tool, should be completed in an orthodox manner, let alone in a reasonable time, and not continue indefinitely, exemplifying thus the phenomenon of Byzantinism.

The term ''Byzantinism'' or ''Byzantism'' is related mainly to the Byzantine Empire but also to its spiritual successors, such as the Balkan States, the Ottoman Empire and Russia. It is in use particularly in the framework of political science and philosophy. It was coined in the 19th century and has primarily negative associations, implying complexity and autocracy. The expression ''Byzantinisms'' signifies lengthy, sophisticated and obscure discussions.

For instance, the concept of Byzantinism has recently been used in the framework of an approach to the constitutional history of the Republic of Zambia, which is meaningful (Maniatis, 2020). According to this research, it is not plausible that there is a big number of amendments and amendment attempts. Both the form of the amendment process and the structure of the Constitution are complicated. From 1964 to 1996, changes of the formal Constitution were frequent whilst the opposite outcome emerged afterwards, without resigning from the tendency to amend the Constitution. In other words, Zambia was in need of about 13 years to amend the 1996 version of the 1991 Constitution, let alone the fact that the amendment process was not completed, as the required constitutional referendum failed.

As far as the ABNJ is concerned, it is to pay special attention to the fact that they have been already marked by a unique antecedent of modification of the initial content of the Constitution for the oceans, through the 1994 Agreement, as already mentioned. It is to underline that the Area has been diachronically the crucial zone of the law of the Sea. Indeed, the origin of the UNCLOS dates back to

1st November 1967 with the extraordinary speech of Arvid Pardo, Ambassador of Malta to the United Nations, before the United Nations General Assembly (Morin, 2022). This speech of the father of the law of the sea in its current form was followed by the creation of an ad hoc committee, responsible for studying the peaceful uses of the bed of the seas and oceans beyond the limit of national jurisdictions (Morin, 2022). The meeting of the Third Conference on the Law of the Sea held eleven sessions and formally adopted the UNCLOS, so fifteen years had passed between Pardo's speech and the adoption of this convention (Morin, 2022), compared to the 19 years from   the adoption of the 2004 resolution for BBNJ negotiations and the adoption of the draft agreement on BBNJ in March 2023.

Besides, there is also a contrast between the two agreements relevant to the application of the UNCLOS, which were adopted during the 1990s, namely the aforementioned Agreement on the Area and the 1995 United Nations Fish Stocks Agreement (UNFSA) which entered into force on 11th December 2011, and the future agreement on the protection of marine biodiversity. Moreover, it took longer for the latter than for this legal monument that is the UNCLOS (Morin, 2022).

## REMARKS ON THE CONTENT OF THE DRAFT AGREEMENT ON BBNJ

The draft Agreement comprises an Preamble as well as a main text including Part I on general provisions (articles 1-6), Part II on marine genetic resources, including the fair and equitable sharing of benefits (articles 7-13), Part III on measures such as area-based management tools, including marine protected areas (articles 14-21), Part IV on environmental impact assessments (articles 22-41 ter), Part V on capacity-building and transfer of marine technology (articles 42-47 bis), Part VI on Institutional Arrangements (article 48-51), Part VII on financial resources and mechanism (article 52), Part VIII on implementation and compliance (articles 53 – 53 ter), Part IX on settlement of disputes (articles 54 – 55 ter), Part X on non-parties to this agreement (article 56),  Part XI on good faith and abuse of rights (article 57), Part XII on final provisions (articles 58 ante – 70). There also Annex I, entitled ''Indicative criteria for identification of areas'' and Annex II, entitled ''Types of capacity-building and transfer of marine technology''.

The general objective of the draft Agreement is to ensure the conservation and sustainable use of marine biological diversity of ABNJ (term which is defined as ''the high seas and the Area''), for the present and in the long term, through effective implementation of the relevant provisions of the UNCLOS and further international cooperation and coordination. However, the text is not exempted from vague and imperfect formulations, as it is the case of article 5 on general principles and approaches. Instead of declaring explicitly the genetic resources of the Area and the correspondent high seas as common heritage of mankind, it cites that Parties shall be guided by the principle of the common heritage of humankind which is set out in the UNCLOS. It is notable that according to article

9 par. 5, activities with respect to marine genetic resources of ABNJ are in the interests of all States and for the benefit of all humanity, particularly for the benefit of advancing the scientific knowledge of humanity and promoting the conservation and sustainable use of marine biological diversity, taking into particular consideration the interests and needs of developing States. Pursuant to article 10 bis, parties shall take legislative, administrative or policy measures, where relevant and as appropriate, with the aim of ensuring that traditional knowledge associated with marine genetic resources in ABNJ that is held by Indigenous People and local communities shall only be accessed with the free, prior and informed consent or approval and involvement of these Indigenous People and local communities whilst access to and use of such traditional knowledge shall be on mutually agreed terms. Article 5 classifies explicitly the use of relevant traditional knowledge of Indigenous Peoples and local communities, where available, among the general principles and approaches, but it makes no explicit reference to the wider principle of multiculturalism.

  Besides, article 5 consecrates precaution as "Precautionary principle or precautionary approach, as appropriate'', but the precaution is an authentic fundamental principle of law, not merely an approach, whilst the use of the phrase ''as appropriate'' should be avoided, given that it is marked by a spirit of caution, as already mentioned for the negative precedent of the legal consecration of precaution.

  Furthermore, the text previews the establishment of a clearing-house mechanism, which shall consist primarily of an open-access, centralized platform to enable Parties to access, provide and disseminate information with respect to activities taking place pursuant to the provisions of this Agreement.

   It is notable that if the Agreement enters into force, it will place 30% of the world's oceans in protected areas, devote more money to marine conservation and cover access to and use of marine genetic resources (Nations Unies, 2023). As far as the question of its application is concerned,  it  shall enter into force 120 days after the date of deposit of the sixtieth instrument of ratification, approval, acceptance or accession, whilst there is the alternative of provisional application by a State or regional economic integration organization.

## CONCLUSION: A POSITIVE OUTCOME FROM AN AMBIVALENT PROCESS

   It is obvious that there is relatively a lack in political volunteer for the environment, in comparative law, as it is the case inter alia of the question of the principle of precaution, which however was not been omitted from the draft agreement on BBNJ. On the one hand, the process to adopt this agreement has proved to be too long and is marked by Byzantinism. On the other hand, the content of the draft Agreement which has resulted from this ambivalent process seems to be positive, as a general rule, for the humanity and especially for sensitive entities, such as developing countries and the Indigenous

People, in spite of the fact that the spirit of Byzantinism has been reflected even slightly reflected in some points of the content of this text, exemplified by the point on precaution. So, the protection of marine biodiversity has been functionally combined with the principle of multiculturalism, illustrated by the protection of the rights of Indigenous People.

## REFERENCES

Andorno, R. (2007), ''Global bioethics at UNESCO: in defence of the Universal Declaration on Bioethics and Human Rights'', Journal of Medical Ethics, March, Vol. 33, Issue 3, pp. 150-154.

Anonyme, '' ''Une constitution pour les océans''. Remarques prononcées par Tommy T. B. Koh (Singapour) Président de la troisième Conférence des Nations Unies sur le droit de la mer'', https://www.un.org/Depts/los/convention_agreements/texts/koh_french.pdf

Boré Eveno, V. (2021), ''Chapitre 117. Zone intérnationale et régime de l'exploitation des grands fonds marins'', in P. Chaumette (dir.), Droits Maritimes, 4e édition, Dalloz., pp. 177-193.

Goffaux Callebaut, G. (2018), ''La notion de patrimoine maritime. Quelques amers'', in Boilet, N., Goffaux Callebaut, G. (dir.), Le patrimoine maritime : entre patrimoine culturel et patrimoine naturel. Actes du colloque de Brest 23 et 24 juin 2016, Éditions A. Pédone, Paris,  pp. 27-35.

Maniatis, A. (2021), ''Global Ocean Governance (GOG)'', in 14th Annual Conference of the EuroMed Academy of Business: Contemporary Business Concepts and Strategies in the new Era, pp. 504-514.

Maniatis, A. (2020), ''Gray-green Environmental Law. A commentary on Council of State 1690/2020 (Section E)'', Perivallon & Dikaio, No. 4 (in Greek), pp. 628-634.

Maniatis, A. (2020), ''Zambian constitutional amendment process'', Int. J. Human Rights and Constitutional Studies, Vol. 7, No. 2, pp. 158-169.

Morin, M. (2022), ''BBNJ: It's a long way to…?'', Neptunus, e.revue, Vol. 28, 2.

Nations Unies (2023), ''Accord historique à l'ONU sur la protection de la biodiversité marine en haute mer'', 5 mars, https://news.un.org/fr/story/2023/03/1132947

De Pooter, H., ''Une Constitution de l'ONU pour les océans'', La Vie - Le Monde, hors-série, pp. 144-145.

Roche, C. (2018), '' Les enjeux éthiques : La mer comme patrimoine commun ?'', in Boilet, N., Goffaux Callebaut, G. (dir.), Le patrimoine maritime : entre patrimoine culturel et patrimoine naturel. Actes du colloque de Brest 23 et 24 juin 2016, Éditions A. Pédone, Paris, pp. 37-45.

United Nations (2023), ''Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (General Assembly resolution 72/249)'', https://www.un.org/bbnj/

Vierros, M. (2021), ''Global Marine Governance and Oceans Management for the Achievement of SDG 14'', UN Chronicle, https://www.un.org/en/chronicle/article/global-marine-governance-and-oceans-management-achievement-sdg-14

# LITTORALIZATION & BUSINESS

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## ABSTRACT

Littoralization in a wide sense occurred with the emergence of territorial waters or territorial sea (littoral zone) in the 17th century. As a form of concentration of populations and human activities in the littoral, it has gradually evolved into a mainstreaming phenomenon, since the 19th century. However, the term "littoralization" remains marginal, for instance the 1994 United Nations Convention to Combat Desertification refers periphrastically to this phenomenon, whose emblematic region is Northern Mediterranean, worldwide. For ''littoralization'', which is comparable to urbanism, we suggest be consecrated the neologism ''aktiphilia'' (in Greek ''ακτηφιλία''), as the conjunction of the words ''akti'' (littoral) and ''philia'', meaning friendship, according to the valid term ''astyphilia'' (''αστυφιλία''), namely urbanism, which has resulted from the words ''asty'' (''άστυ'') meaning city or town and ''philia''. Besides, balneotherapy in the sea has been the archetype driving force for littoralization whilst this tendency reinforced also, in a parallel way, thermalism, whose boost became a main factor of the emergence of tourism in the current era. So, water for social use, exemplified by bathing and diving, mark littoralization, which public authorities make inclusive for all types of activities on the basis of the principle of hospitality. The scope of this paper is to outline the phenomenon of littoralization from an entrepreneurial point of view, using examples of available tools that have been developed for the governance of coastal areas, at international or national level.

*Keywords: bathing; business; diving; glamping; hospitality; littoralization; thermalism; United Nations Convention to Combat Desertification (UNCCD);*

## INTRODUCTION: LITTORALIZATION AND LEISURE

The word ''littoral'' is very common whilst the term ''littoralization'' is still rather marginal. It would be interesting to deal with littoralization, which constitutes an actual phenomenon with various dimensions. This approach could be enriched through an opening to leisure activities especially in the littoral and maritime context. As a result, the current paper focuses on littoralization, mainly from an

entrepreneurial point of view. Its scope is to outline this phenomenon, using examples of available tools that have been developed for the governance of coastal areas, at international, regional or national level. Particular objectives are: a) to investigate the role of a State; b) to showcase the water-oriented character of touristic development; and c) to promote accessibility to the sea as a key feature of hospitality.

 The current study has the following RQ: *Littoralization is in need of specific State care, in terms of marine and maritime activities.*

At first, it includes some introductory remarks on the concept of littoral, in linguistic and other terms.
 Afterwards, it analyzes the central phenomenon of littoralization in its historical process, highlighting the emblematic character of Mediterranean region.

 Furthermore, it focuses on the coastal tourism services, particularly scuba-diving for accessing underwater cultural assets, as prolific services facilitated recently by the Greek polity.


## THE LITTORAL

 The word "littoral" comes from Latin and derives from the noun "litus, litoris", meaning "shore". Its older type consists in adjective, which dates from the mid-17th century and means "coastal", for instance in the phrase "the littoral States of the Indian Ocean". This word "littoral" is conceptually orientated to the water at the shore, rather than the land, as it is particularly the case of the expression "littoral zone", which in the context of the law of the sea is synonym to the term "territorial water" or "territorial sea" of the coastal State. The word "coastal" is relating to the coast, namely on or near a coast, whilst the word "littoral" is of or relating to the shore, especially the seashore. As far as the word "coast" is concerned, it means the side or edge of something, even in a context different from the water environment, whilst "shore" is suitable for a wider region of land in relation to an aquatic space, such as lake.

 So, there is not an absolutely clear conceptual approach between the terms "littoral" and "coast" but, as a general rule, the first seems to be potentially wider than the latter, in both forms of physical space: the land and the sea. As a generic rule, the remarks relevant to the coast are also applicable to the case of the littoral.

 It is notable that the coast has been traditionally marked by a rather negative attitude of the pubic, including fear and repulsion. It is a question of the risks linked not only to physical phenomena but also to human activities, such as the criminality of pirates (Maniatis, 2023a). For instance, the inhabitants of Crete returned to the coasts of their island barely around 1930, after their detachment to mountainous (sheltered) sites for about 400 years due to the problem of piracy.

The littoral is an important point of reference, for example as for the attitude of inhabitants and also of other visitors, as it is the case of a doctrinal classification of tourists. In the framework of this indicative categorization, on the one hand, active tourists include the group of fans of adventure and the group of sport lovers. On the other hand, the category of passive tourists comprises the group of fans of heritage, but also the fans of Sun, Sea and Sandy beach. The latter group represents a traditional, famous model of tourism and leisure, which is commonly known with the acronym "3S" tourism, consisting in Sun, Sand and Sea tourism. From this classic phenomenon of coastal tourism, on sunny days, especially of the summer, is differentiated the Special Interest Tourism (SIT) (Tsartas *et al.*, 2010).

## AN ERA OF LITTORALIZATION

Littoralization is defined as the geographical process and the result of the fact that populations and economic activities get in touch to the littoral. Within the context of human-environment interaction, the meaning of littoralization is proportional to the one of urbanization. In the Greek language, the phenomenon of urbanism is described by the term ''astyphilia (αστυφιλία)'', as the conjunction of two words: ''asty (άστυ)'', meaning city or town and "philia (φιλία)", in the sense of friendship (also used as the prefix in complicate words, such as ''philosophy''). That is, in Greek the phenomenon of populating massively the littoral could be described by the neologism ''aktiphilia (ακτηφιλία)'', deriving from ''akti (ακτή)'' which means ''littoral'', followed by the suffix ''philia''. It is to signalize that this suggestion is original, being formulated for the first time.

Firstly, it is to put the stress on the fact that this phenomenon is a multifaceted one, much beyond financial interests and professional activities and so the above-mentioned definition, though it looks like a mainstreaming version, is not available to cover all the aspects of this issue. In that wider context, it is possible to take advantage of the content of the new era of the law of the sea, which emerged in the 17<sup>th</sup> century. The littoral zone was institutionalized then, in a customary way, for reasons of national defense, hence a littoralization of the marine zone relevant to the littoral, namely of a former part of the high seas, was produced (Maniatis, 2023a).

The littoral began to seem hospitable gradually, and this occurred in France in a pioneer way. With the policy of stabilizing the coastline by planting dunes, which was launched by Napoleon Bonaparte (decree of December 14, 1810), afterwards with the development of the railway, authentic "bathing centers" would be created on most coastlines : the "railway from Paris to the sea" project was launched in the early 1830s and provided service to Rouen in 1842, then to Le Havre in 1847 and finally to Dieppe and Fécamp in 1849 (Huten, 2021).

The 19th century became crucial for the relation between the citizens and the littoral, let alone in various ways. Mainly, it is to underline that people were acquainted with the coast to get access to sea for a new trend, such as baths. With the development of the phenomenon of the activity of balneotherapy, the perception of the coast has evolved gradually. It is indicative of the concern over the future of new destinations that Victor Hugo vilifies the tourist industry in his work "Le Voyage vers les Pyrénées", in 1843 (Vainopoulos *et al.*, 2009).

Furthermore, later in the 19th century the process of heritage management began in France. The patrimonalization emerged in the context of a redefinition of environments, once perceived as hostile and repulsive (raging ocean, high mountains, dark forests), which became attractive sights in the eyes of tourists from the industrial society (Pickel Chevalier *et al.*, 2013). The codification and the propagation of this new interpretation of nature, contributed to pledging the environment as national asset, before this becomes heritage of humanity, in virtue of the relevant Convention of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Pickel Chevalier *et al.*, 2013). It is about the Convention concerning the protection of the world cultural and natural heritage, which was adopted on 16 November 1972. With that Convention and mainly with the Declaration of the United Nations Conference on the Human Environment, of 16th June 1972, a new era emerged for human rights. It is about the third generation, which was succeeded by the current fourth generation, in 1992, being inaugurated by texts related to the 1992 United Nations Conference on Environment and Development, such as the Rio Declaration on Environment and Development and the United Nations Framework Convention on Climate Change, which was drafted on 9th May 1992 and entered into force on 21st March 1994.

To sum up, the 19th century proved to be the starting point for a new, friendly approach to the littoral, especially in developed countries. That development was functionally combined with a very dynamic means of public transport, such as train.

Besides, it is to point out that thermalism has been one of the first factors that gave birth of tourism, after the emergence of the Industrial Revolution. In the 19th century, France experienced a real thermal fever (Penez, 2004), being encouraged by Napoleon III, who was **the first President of France** (as Louis-Napoléon Bonaparte) **from 1848 to 1852, and the last monarch of that country, as Emperor of the French from 1852 to 1870** (Jégouzo, 2018). The stations then reserved for the elite became places of care where medicine occupied a place of choice but where distractions were equally numerous (Jégouzo, 2018). Thermalism was promoted by law of 24th September 1919, establishing hydromineral, climatic and tourism stations, establishing special taxes in said stations and regulating the national tourist office. It is to highlight the fact that this phenomenon was combined with the first

legislative texts on tourism, whereas during the same era the interested countries, including France, began to be endowed with a rudimentary specialized competent service for tourism. (Jégouzo, 2018).

 In the 19th century, a conflict of use emerged between the old maritime and agricultural activities established for a long time on the coast and the new tourism activities which experienced considerable expansion in the 20th century. (Huten, 2021). The twentieth century was of major importance, particularly for the social tendency of tourism but also of thermalism, which was gradually assimilated to a great extent to tourism, namely as a specific form of tourism.

 Since the late sixties, the case of the Republic of Rose Island had already pointed out, in an indirect yet explicit way, the forthcoming expansion of economic rights at the expense of ''free'' space at the sea (Bezrucka, 2022), while ten years earlier the Antarctic Treaty (Secretariat of the Antarctic Treaty, 2023) expressed the need of safeguarding "our most southerly, harshest and most pristine continent" (Dodds, 2018) from territorial claims, among other threats. The doctrine in its attempt to define littoralization has made use inter alia of the following formulation: "concentration of economic activity in coastal areas as a result of urban growth, industrial activities, tourism and irrigation" (Zucca *et al.*). It is about an expression in article 2 in Annex IV of the United Nations Convention to Combat Desertification in those countries (particularly in Africa) experiencing serious drought and/or desertification. Worth mentioning the fact that the term "littoralization" is fully absent not only from this Annex but also from the entire text of the Convention. It is also notable that for no other region littoralization is mentioned as a particular condition, turning Northern Mediterranean into a worldwide symbol for this phenomenon. Furthermore, littoralization is a marginal concept in the entire Convention, as it is perhaps implied in a very few points.

 This treaty, known with the acronym UNCCD, or mainly CCD, was established in 1994 to protect and restore the land and ensure a safer, just, and more sustainable future. It is about the first and the unique international legal tool to address the problem of desertification and the effects of drought. It is based on the principles of participation, partnership, and decentralization. The common and more remarkable consequence of littoralization in Mediterranean Europe is coastal urbanization but in some cases a concentration of intensive agricultural activity is also observed, as in the southeast of Spain and in several regions of the southern Italy and Greece (*Zucca et al.*). More than 30% of world tourism is attracted by the Mediterranean region, 80% of which by the European countries (Spain, Southern Italy and France, Greece) (Zucca *et al.*). The case of the Province of Alicante is emblematic: the "wall of cement" due to an uncontrolled urbanization along the coastline as the result of a development policy based on mass tourism, has had a severe impact on the environment (Zucca *et al.*). Now it is recognized as the cause of loss of fragile coastal ecosystems (humid areas) and of accelerated coastal erosion (Zucca *et al.*).

Besides, the above-mentioned situation of conflict of use became even more complex at the beginning of the 21st century, with the development of electricity production from renewable energy sources (Huten, 2021). It is to add that various other developments have occurred, for the first time in this century. For instance, UNESCO launched the Convention on the protection of the underwater cultural heritage, in 2001, which was put into force with an important delay, in 2009, and still has not been approved by most polities. The term "coastal State" of the United Nations Convention on the Law of the Sea, of 1982, was not retained in this Convention (Maniatis, 2023a). During the negotiation for the conclusion of this legal instrument the great majority of the delegations were ready to extend the jurisdiction of the coastal country in matters of underwater cultural heritage on the continental shelf and in the Exclusive Economic Zone (EEZ), but a turbulent minority was opposed to it, fearing that such an extension could alter the delicate balance achieved in 1982. The negotiation resulted in the deletion of the term "coastal State" from the entire text, which according to a minority of polities would have evoked an extension of jurisdiction of littoral polities.

Furthermore, glamping begins to be institutionalized and to be used in practice, as it is the case of Greece. Article 36 of law No. 4688/2020 on special forms of tourism and on tourism development has introduced this practice. It is about a novelty, being devoted to the offer of luxurious experience of staying in nature, inter alia in form of wooden huts on stilts. For instance, in 2022 the plan for a very big hotel unit on the beach of Falasarna, which is one of the most important sites of the Natura 2000 network of nature protection areas in Crete, was presented by the investors involved as a luxurious but mild investment with respect to the environment. The main argument is that there will be no buildings on the beach whilst 61 wooden single-story huts will be placed on stilts, so that they will not touch the ground.

## DIVING IN GREECE AS AN EXAMPLE OF ECONOMIC EXPANSIONISM ON SEA

In the Greek legal order, developments have occurred the last years in the matter of the marine zones of jurisdiction of Greece, to promote tourism development in the competitive international context of the Mediterranean. This is the case of the aforementioned law No. 4688/2020, which has introduced the possibility to create a free artificial underwater attraction. Stakeholders in the public sector, such as municipalities, or the private sector, such as coastal hotel companies, are enabled to create artificial underwater attractions at their own expense. This concept includes various objects, such as ships, traditional ships, shipwrecks, floating shipyards or other artificial structures or works of art (e.g., statues), which are installed on the seabed with the aim of improving the biodiversity and the diving

attractiveness of the marine area. It is also notable that a condition for the creation of that type of attraction is the issuance of a relevant environmental permit, pursuant to law No. 4014/2011.

This novelty is a rather controversial issue, given that it is believed that mainly through the free artificial underwater attractions the authenticity of the underwater landscape is altered, and by extension, the element of authenticity is removed from reality, which is now staged (Mylonopoulos, 2021). It is not considered necessary to "stage" the reality of the Greek underwater space, as the seascape itself in all the environments of the country, coastal and insular, arouses the interest of those engaged in diving as a leisure activity (Mylonopoulos, 2021).

Anyway, the aforementioned law on special forms of tourism codifies the dispositions relevant to diving tourism and incorporates explicitly shipwrecks into the definition of ''leisure diving tourism'', even if they are under 50 years old and fort that reason they cannot be classified as historical shipwrecks, yet. As a result, shipwrecks have been institutionalized as a form of tourism resources, let alone for a modern specific form of thematic tourism, such as diving tourism.

Furthermore, the Greek polity adopted a list of 91 wrecks of ships and aircrafts to visit, in various maritime zones, mainly in those of its sovereignty (Papadimitriou, 2021). The most famous shipwreck consists in "His Majesty's Hospital Ship BRITANNIC" or abbreviated "HMHS BRITANNIC", being the younger sister of the famous ship "TITANIC". The second most important shipwreck which lies in the Greek territorial sea is located 600 meters away from the BRITANNIC and is called BURDIGALA. The BURDIGALA's common historical destiny with the BRITANNIC makes her one of the last witnesses to the end of the historical ocean liners lost in the eastern Mediterranean Sea during World War I (Galon, 2019).

Joint ministerial decision No. 92225 of 3rd March 2022, of the ministers of National Defense, Culture and Sports as well as Shipping and Insular Policy, which was published in the Government Gazette (1273/B) on 18th March 2022, deals with the definition of the diving conditions, the mode of notification and the other obligations of diving services providers and of visitors, as far as recreational diving is concerned, in the case of this first group of wrecks, which have been listed as monuments (Maniatis *et al.*, 2022). This new initiative, which is strictly related to the tourism public policy, has obvious implications on the leisure activity of scuba diving and also of science and research relevant to underwater cultural heritage. By 10th June 2022, 11 shipwrecks became available for divers, as the condition of their photographic documentation was fulfilled by the competent State service, consisting in the Ephorate of Underwater Antiquities.

## CONCLUSION: BATHING AND HOSPITALITY

The current analysis ends up to the final main research findings:

*a. Need of systematic public care for littoralization, particularly in terms of marine and maritime activities*

The RQ has been fully confirmed, as littoralization is a very intense and dynamic phenomenon in social practice, which may cause conflicts of use of the littoral and also of the nearby marine environment as well as produce serious implications of economic, social and environmental nature. So, a systematic special care is needed, not only by the State itself but also by other public stakeholders, such as municipalities, particularly because from at least the 1980s and on there is a form of decentralization of competencies from the central power to the local self-government organizations in the matter of littoral, as it is the case of France in virtue of the 1986 "littoral law". The role of the State remains crucial even in terms of application of public policy, as it is the case of the intervention of the Ephorate of Underwater Antiquities – not of any private investor – to make the first 11 historical shipwrecks of the Greek seas immediately available for legitimate diving.

*b. The water-oriented character of touristic development and of similar leisure activities*

Tourism development is based par excellence on waters for common use, especially bathing. Indeed, the littoral gradually became a coveted space due to the emergence of the new trend of balneotherapy, in the 19th century. Similar remarks are valid for the comparable case of thermalism. It is about an original finding, at least on account of the fact that the doctrine has not highlighted the particular importance of the institutionalization and legal regulation of thermalism around 1920. For instance, scholars still wander why thermalism may be regarded more important than the traditional tendency to travel for religious reasons, i.e. for pilgrimage, as far as the emergence of tourism is concerned. At the coast, at the littoral and in the inland territory, the receipt has proved to be the same: bathing in sea waters or in thermal springs, in the free time available.!

So, public stakeholders as well as prospective investors should realize this diachronic particularity of the attitude of private individuals towards environmentally friendly activities, such as thermalism and tourism.

*c. The general principle of hospitality*

As the sea has been intrinsically hospitable to cultural heritage, exemplified by historical wrecks of ships and aircrafts, and to biodiversity, it should inspire the public power to form and exercise a policy being thoroughly ruled by the general principle of hospitality, for both categories of use of the littoral, the internal waters and the littoral zone, which consist in traditional activities and modern ones. Due to reasons of public interest, a variety of activities should be ensured on the basis of the key principle of proportionality, especially in case of conflict between different types of use. Furthermore, it is notable that hospitality is particularly applicable for tourism entrepreneurship, and it is not

limited to main players, such as hotel companies. Last but not least, business spirit still innovates on the matter, as it is the case of glamping.

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The United Nations Convention to Combat Desertification is a pioneer legislative text of the era of 4G human rights, inter alia because it is marked by the principle to avoid procedural duplication. Nevertheless, it is not exempted from the problem of normative duplication on the matter, so it constitutes one of many challenges to cope with duplication in law (Maniatis, 2023b).

# REFERENCES

Bezrucka, Y. (2022), ''The Unbelievable History of Rose Island, a Micronation'', Battisti, C, Fiorato, S., Nicolini M. & Perrin T. (Ed.), ''Islands in Geography, Law, and Literature: A Cross-Disciplinary Journey'', Berlin, Boston: De Gruyter, pp. 51-60. https://doi.org/10.1515/9783110770162-004

Dodds, K. (2018), In 30 years the Antarctic Treaty becomes modifiable, and the fate of a continent could hang in the balance, https://theconversation.com/in-30-years-the-antarctic-treaty-becomes-modifiable-and-the-fate-of-a-continent-could-hang-in-the-balance-98654

Durbarry R. (Ed.) (2018), Research Methods for Tourism Students, Routledge.

Galon, D. (2019), "The S/S Burdigala former Schnelldampfer Kaiser Friedrich (1897-1916)"¸ International Conference in Management of Accessible Underwater, Cultural and Natural Heritage Sites: "Dive in Blue Growth", Athens, Greece, 16-18 October.

Huten, N. (2021), "Chapitre 511. Objectifs et champ d'application de la loi du 13 janvier 1986, dite loi littoral", P. Chaumette (dir.), Droits Maritimes, 4e édition, Dalloz, pp. 1166-1175.

Jégouzo, L. (2018), Le Droit du Tourisme, 2e édition, LGDJ.

Maniatis, A. (2023a), "Approche du littoral", Digesta Online, http://digestaonline.gr/pdfs/Digesta%202023/maniatis2.pdf

Maniatis, A. (2023b), "Les doublons juridiques et la double composition des contrats", Pro Justitia, Vol. 6, https://ejournals.lib.auth.gr/projustitia/article/view/9292/8748

Maniatis, A., Papadimitriou K. (2022), "The BRITANNIC as a visitable shipwreck", in 15th Annual Conference of the EuroMed Academy of Business: Sustainable Business Concepts and Practices, pp. 447-457.

Mylonopoulos, D. (2021), Tourism Law, 3rd edition, Nomiki Vivliothiki (in Greek).

Papadimitriou, K. (2021), "80 ans avant…Aujourd'hui", wreckhistory, 24.04, http://www.wreckhistory.com/80-ans-avant-aujourdhui/

Penez, J. (2004), Histoire du Thermalisme en France au XIXe siècle, Economica, 2004.

Pickel Chevalier, S., Taunay, B, Violier Ph., "Patrimonialisation de la nature et dynamiques touristiques : spécificités et singularités d'un « modèle » chinois contemporain", VertigO, Hors-série 16 juin 2013, https://journals.openedition.org/vertigo/13599

Secretariat of the Antarctic Treaty (2023), The Antarctic Treaty, https://www.ats.aq/e/antarctictreaty.html

Tsartas, P., Zouganeli, S, Trihas N., Diamanti E., Samara H. (2010), "SIT Vs. 4S: The tourism identity of Greek destinations", ATLAS Annual Conference "Mass Tourism vs. Niche Tourism".

Vainopoulos, R., Mercier, S. (2009), Le Tourisme, Le Cavalier Bleu Editions.

Zucca C., Colombo V., Gómez J. G., Bermúdez F. L., Quaranta G., Salvia R., "Littoralisation", DIS4ME, https://esdac.jrc.ec.europa.eu/public_path/shared_folder/projects/DIS4ME/issues/issue_littoralisation.htm

# SUPPLY CHAIN RECONFIGURATION IN INNOVATIVE ERA: ANALYSIS OF SUPPLIER'S SIDE RELATIONSHIPS

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## ABSTRACT

The study investigated the positive evaluation of the outputs of innovation, specially the 'supply relationship yield', as well as the risks of innovative supply relationships that induce knitwear firms to widely diversify the supplier portfolio and finally the impact that innovative relationships between producers of knitwear and suppliers have the flexibility offered by the up-stream.

The purpose of this study is to analyse the economics results improvement deriving from the management of the areas of operations and R&D and the improvement of outsourcing performance within the design of innovative relationships with new and unusual suppliers for the sector to which it belongs.

An interpretative, qualitative approach, utilizing selected multi-case study interviews, is chosen because it helps to navigate and understand the complex issues that are associated with the data quality concept, and its relation to the factors involving managerial practices to implement facilities in modern relationships within the international supply chain.

These findings have important managerial implications considering that the innovative supply chain processes in which a leading role is assumed by companies operating in so-called traditional manufacturing sectors generate an increase in flexibility of the entire supply chain. The findings indicate that from an innovative perspective, knitwear firms perform best when suppliers and buyers exceed their expectations.

These findings have important managerial implications considering that the innovative supply chain processes in which a leading role is assumed by companies operating in so-called traditional manufacturing sectors generate an increase in flexibility of the entire supply chain.

*Keywords: supply chain relationship, open innovation, new product development, Italian fashion sector.*

## INTRODUCTION

For an in-depth analysis of the competitive positioning of the Italian medium sized firms (MSFs), that operate in a creative sector, in the structure of the international offer, the fact that the market forms in which they operate are characterized by imperfect competitive conditions must be taken into consideration. Situation in which the changes that arise in the competitive comparison are almost

continuous and this causes companies to adopt new technological and market strategies. These must be the right ones to allow them to maintain the competitive differential against various competitors at least on critical success factors, such as product differentiation, the ability to manage complex order cycles, the use efficiently and on small scale of new process technologies, the use of new materials, etc. In order to effectively exploit resources, organizations must not only be able to leverage existing resources but also to develop new and dynamic capabilities to maintain competitive advantage in changing industry environments and competitive processes (Barney, 1991; Teece et al., 1997; Wernerfelt, 1984). Organizations can build these above-mentioned dynamic capabilities through organizational innovations, which are new methods used in business practices, workplace organization, or external relationships.

In turn these organizational innovations may involve operational innovations which are entirely new ways of doing things, like filling orders. Operational innovations can include processes such as providing customer service, or, the focus of this research, developing new products. So, you can see the crowdsourced information's, from all sources, into the NPD process as an operational innovation These new methods can involve both individuals within the company and external participants and serve as a powerful source of competitive advantage.

The starting point is the reflection and investigation of the modification of the managerial practices following the emergence of new buyer-supplier relationships in new product development (NPD) processes in the Italian knitwear sector. Industrial innovation based on the involvement of suppliers in specific and experimental 'design-engineering' processes that highlight the need for buyers and suppliers to structure the international bargaining and relational governance in a new way.

Another significant phenomenon is the repositioning in the international supply chain by Italian fashion firms operating both in B2B markets and in B2C markets. In recent years there have been many companies that have modified the content of the strategies and characteristics of their organizational structure in order to protect new 'interstitial spaces' (or micro-segments) in international markets. This new and more favourable competitive positioning in the international business markets has been successfully achieved by those companies that have been able to change their position regarding the 'global supply chains'. Precisely their particular ability to identify in which segments of the sector operate, revealed in particularly critical years, when the international supply system was reorganized, was the element that allowed non-large companies to create differential assets in the competitive context.

The purpose of this research is also to promote research methodological approaches to analyse different uncertainty scenarios for the future.

An interpretative, qualitative approach - utilizing selected multi-case study interviews (Yin, 2008) such as the primary data collection method - is chosen because it helps to navigate and understand the complex issues that are associated with the data quality concept, and its relation to the factors involving managerial practices to implement facilities in modern relationships within the international supply chain. 'Oriented case studies' investigate the issue within a real life context, drawing on the reviews of a number of sources, and provides the means to review theory and practice iteratively (Ellram, 1996; Flynn et al., 2010; Hennenberg et al., 2010). Multiple cases ensure that common patterns are identified rather than generalized from what might be change occurrences (Eisenhardt, 1989).

On the openness innovative processes in the vertical supply chain, a qualitative methodology based on cross-case comparisons of innovative projects, implemented by five of the ten firms investigated has been used.

As regards the structure of the paper, in a first part the hypotheses of research are presented, then the methodology used is explained in detail. Finally, some considerations on the results obtained are proposed, both those obtained from the empirical survey and those deriving from the statistical re-elaboration of data base.


## THEORETICAL FRAMEWORK

In the current economic contexts, we are witnessing profound changes in the processes of structuring supply chains at an international level (Arregle et al., 2009; Cantwell, 2009; Miller and Eden, 2006; Rugman and Verbeke, 2004).

The study investigated the positive evaluation of the outputs of innovation, in particular la 'supply relationship yield', as well as the risks of innovative supply relationships that lead knitwear firms to widely diversify the supplier portfolios and ultimately the impact that innovative relationships between producers of knitwear and suppliers have on the flexibility offered by up-stream knitwear supply chain. Most studies have focused exclusively on the benefits derived from additional flexibility enjoyed by the knitwear producer firms neglecting the contribution that the suppliers can provide for the benefit of the operators belonging to the various stages of the supply chain up to the stage of the final customer (Malhotra and Mackelprang, 2012; Mandal, 2015). To gain a better understanding of the producer-supplier flexibility offering, in this research they are analyzed relationship-specific aspects such as relationship age, shared business volume, and others specific factors at the micro-level analysis such as founders, dynamism and complexity of innovative projects.

We have conducted a study in which we are looking for and establish relationships with suppliers in the supply chain and with suppliers belonging to other sectors of industry that are also very different.

In practice, we want to investigate how medium-sized creative companies are able to quickly establish and profitably manage young relationships, finding high value in crowdsourced ideas.

H1- the supply chain relationships are more and more important in new innovative processes

These firms draw on a portfolio of relationships, which, despite having a different degree of seniority, deeply involve the efforts and skills of all the parties involved in the relationship. In addition, we also want to investigate whether in crowdsourcing relations, designed in the context of innovative openness processes, we activate a form of sharing the value generated by these innovative processes.

H2 - we want to investigate whether the expansion of the portfolio of relations produces beneficial effects on the competitiveness of individual economic actors and the economic system.

More recent NPD studies start to show challenges of managing suppliers in a buyer's innovation process. The literature showed that relational governance complements formal contract in more ambiguous, uncertain and complex innovation contexts (Gopal and Sivaramakrishnan, 2008; Yan et al., 2018). Other Authors find that flexible contracts within a firm provide the greatest incentives for employees to innovate when compared to fixed-fee and pay-by-performance contracts. There are also few studies that examine the effectiveness of fixed price, cost/material sharing, and performance-based contracts vary in different outsourcing contexts.

In collaboration with NPD configurations, especially as a non-new research field in management studies, it is also a new research project and a key success factor in new product development performance (Keränen and Jalkala, 2014; Lindgreen et al., 2012; Ulaga, 2011).

Knowledge sharing between industrial buyers and suppliers is a critical issue to manage vertical collaboration form but one which has only been partially investigated in the inter-organisational NPD in innovative supply chain context.

Although not directly examining contractual design in NPD projects, a few empirical studies discuss potential benefits of aligned goals or risks of conflicting objectives: buyer-supplier conflict intensity is negatively associated with NPD performance.

'Learning by R&D outsourcing' is a phenomenon characterized by a specific relationship between the firm and the source of R&D (Un and Rodriguez, 2018). In the case of 'learning by R&D outsourcing', the focal firm in supply chain system takes a collaborative role in the development of innovations and works with others to integrate expertise and co-develop innovations.

Given evidence on the positive effect of collaborative relationships on innovative performance, research explores strategic inter-firm initiatives (co-design, agreements, alliances) and their role in creating effective partnership from a structural perspective (Lavie and Miller, 2008; Faems et al., 2012). The tension between value creation and value capture is considerably attenuated by the innovative openness phenomena. For example, value creation in open innovation requires firms to be open in

order to leverage the knowledge of diverse contributors, while value capture necessitates a tighter, more protective process (paradox of openness) (Laursen and Salter, 2014). This tension is lost in manufactured-based enterprises that are able to industrialize new knowledge in their production systems. Knowing how to process generates the growth of embedded knowledge: this favours the appropriation of the value of 'protective practices'.

H3 - positive effects of supplier-side relations on the competitive performance of Italian knitters are hypothesized.

In Figure 1 you can find a summary scheme that illustrates some theoretical systematizations.

## METHODOLOGY

To gather insights related to the three research questions ten in depth investigations were conducted in the last ten years with entrepreneurs, managers and executives involved in the NPD process with trusted and usual innovative suppliers and with crowdsourcing efforts in the 10 innovative openness processes di 10 fashion creative firms. The purpose of this study is to analyze the improvement of the economics results deriving from the management of operations and R & D areas and the improvement of outsourcing performance in the design of innovative relationships with new and unusual suppliers for the sector they belong to, used to modify the technological content of yarns to be woven. The study includes the buyer-supplier outsourcing relationship as a more complex form of manufacturing and R&D outsourcing. Target firms are those that produce knitted garments in cashmere and in special yarns.
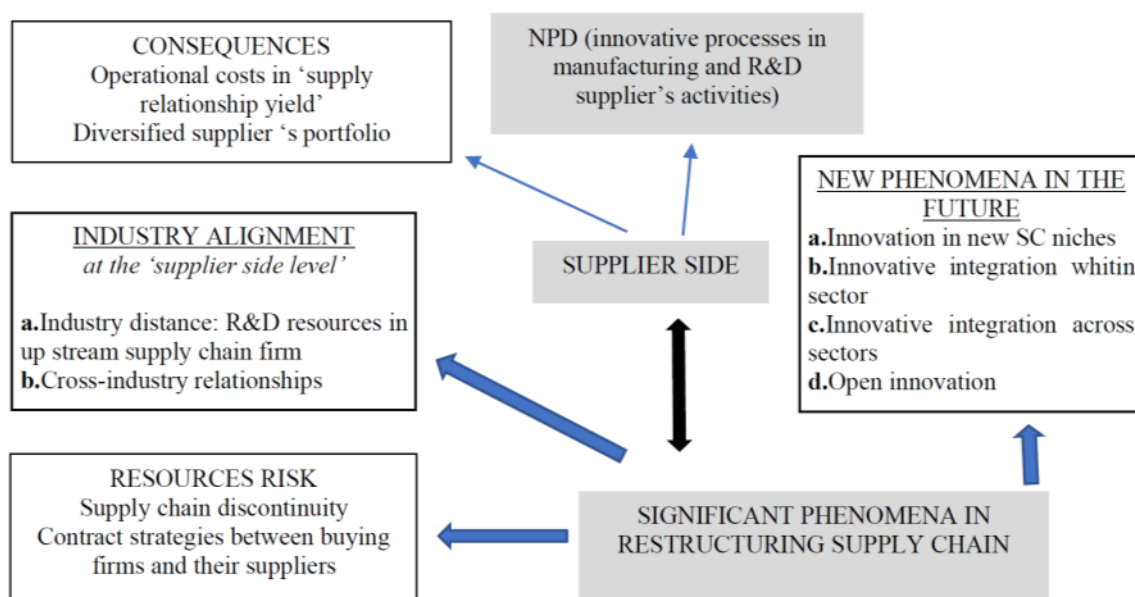


Figure 1 - Significant phenomena in a strategic and managerial sense

The firms of the sample produce reduced meshes, for the realization of which a production system is required in which the working phase of weaving that is capital-intensive becomes relevant. The firms investigated are those who, in the Italian knitwear sector, have obtained the best performance for years, moreover, we want to clarify that the Italian sub-sector of knitwear has more dynamic dynamics than the Italian fashion packaging sector, as regards the growth in turnover and exports, the increase in international market shares, investments, the increase in the capital factor used in industrial transformation processes. We prefer to embrace a dynamic industry model with heterogeneous firms, terms of resources, types of innovative choices, productivity of innovative processes): the so-called self-selection literature.

Data were collected through a series of semi-structured interviews with workers belonging to various business areas (operations, office style, R&D, marketing) and with external actors such as yarn suppliers, buyers, institutional and non-institutional lenders.

This research grounded its context in the Italian knitwear sector within the Italian luxury fashion's creative industry. The contribution of the fashion creative industries to Italian economic development has been well recognised in the Italian managerial studies and well recognized in the international economic literature. Fashion creative industries are those industries which have their origin in their creativity, skill and talent which have a potential value for international markets and embedded job creation for generation. Gross value added (GVA), revenues' export average, employment, and numbers of businesses are four key measures used to estimate knitwear firms that most contribute to the value generated by the luxury fashion system, and, among these, 10 laboratory firms have been chosen that are become a case study (see sheet 1).

This study initiated by selecting appropriate business operators (department heads, workers to computerized weaving machines) and area managers who are demanded representative for this research activity. A preliminary round of interviews with designers (or stylists) and entrepreneurs, the founders of the innovative fashion business models, was conducted. Preliminary set of data was collected during the Pitti week in Florence and during the fashion week in Milan. These are industry events, among the most prestigious in the world, which take place at certain times each year and in which well-known companies from the Italian fashion and independent high-end fashion designer business gathering in Florence and Milan showcased their aesthetic (rational or kinesthetic) product innovations for the upcoming season, with businesses ranging from established fashion firms to emerging start-ups. Interviewees' names were kept anonymous due to pre-interview agreements of anonymity.

The second round of data collection was conducted. There were 48 semi-structured interviews involving economic operators at various stages of the supply chain, the consulting organizations, representatives of trade associations, representatives of technical schools and universities.

Sheet n. 1 – Characterization of firms based on key competitive variables

| 1 | More interested in process innovation than simply saving costs, in order to offer, thanks to the development of innovative (also in the form of open innovation), design and development processes for fashion collections that allow the manufacture of 'innovative-rational' products. Even if it is not large, at the same time it is able to innovate in a new way for the non-usual fashion system (open innovation) and to be able to recover the innovative efforts (Δ ROI and Δ cash flow for each collection). Much importance is constantly attributed to the learning processes that generate the growth of workers' know-how, as well as the productivity of labor and capital factors. Complex and dynamic are the innovative processes. |
|---|---|
| 2 | It is a super-luxury fashion company that considers operations challenges unimportant because it uses artisanal manufacturing processes. The sartorial and engineering design of the fashion collections offers the industrial buyer (total look companies belonging to the super luxury fashion) a high kinesthetic value and, at the same time, rational solutions. The operational aspects are input based, i.e. attentive to the reduction of manufacturing costs and the quality of yarns co-designed with Italian spinners. The firm is very attentive to the performance parameters of the 'design-engineering-manufacturing' cycle of the fashion collection (ROI and cash flow), the productivity of the production system and the learning of workers, which are already highly professional (above all in weaving and lacing). Both the impact on the other stakeholders and the spillovers effects are limited. Importance is attributed to the business relationships of both the 'supply side' (knitwear-supplier relationships) and the 'buyer-side' relationships (knitwear-industrial fashion buyer relationships). |
| 3 | High importance is now attributed to re-engineering and re-structuring; little importance, however, takes the attention to the recovery of efficiency in the production system, given that tailoring has significant value in generating high kinesthetic value (emotion, donning, safety) of the garments and the increase of opportunity for use. The know-how of the workers is particularly important: it depends on the productivity of both labor and capital and consequently the ROI and cash flow of the collection. The firm is highly profitable, offers employment opportunities and deploys dynamic and complex innovative phenomena that have positive repercussions on the stakeholders of the territory as well. |
| 4 | The strongly operation-based enterprise is particularly attentive to the cost-saving objective and to the re-structuring processes. The market aspects are considered of medium importance, since the offered product, characterized by rationality, is easily recognizable worldwide and appreciated for its standard. Much importance is attributed to profitability, ROI and cash flow. Labor productivity and the know-how acquired by workers are standards guaranteed by excellent capital productivity. Innovative processes are also standardized and produce limited effects (stakeholders and spillovers). Important long-term relationships are established between the knitwear factory and its suppliers. |
| 5 | Both operational aspects (operations-based challenges and cost-based challenges) are considered important. The focus is on improving the rationality of the offered product and the efficiency of the NPD and manufacturing processes. Regarding the economic aspects, the attention is highest for all those listed in table 1; in particular, the values are high both as regards the employment opportunities that it offers on the territory and the spillover effects. Much importance is attributed to long-term relationships |
| 6-7 | They are two firms aligned with regard to open innovation strategies. The operations-based aspects reflect both the operational choices of re-engineering and re-structuring. The activities of NPD are based on market aspects, both kinesthetic and rational, as regards the increase in opportunities for use. The activities of NPD are based on market aspects, both kinesthetic and rational, as regards the increase in opportunities for use. The relations with other actors in the supply chain are given great attention: they are complex and since they have been formed recently there are no shared value phenomena in the innovative relationship. |
| 8 | Operation-based firm with objective 'input cost-based challenges' realized through management choices of the type 'business re-structuring'. Manufacturing activities are integrated with marketing aspects product objectives of kinesthetic (donning and safety) and relational. Even if the economic parameters (profitability, ROI and cash flow) are low, the effects of spillovers are important. The non-complex relationships are long lasting with good levels of shared value. |
| 9-10 | They are firms that use production systems that rely on tailoring appreciated in the world and invest |

> little resources both in the innovative processes of the production area and in the processes of re-engineering and re-structuring of production systems. Workers have now achieved good labor productivity standards thanks to consolidated internal learning processes. They are moderately profitable with particular attention to operational aspects input-based. They have saturated employment opportunities and do not generate dynamic innovative phenomena that produce significant effects on stakeholders and the territory. Relationships are considered important and are established with suppliers, with a long-term perspective for more complex.

## STRATEGIC RELEVANCE OF 'SUPPLIER-SIDE' RELATIONSHIPS

Investigated firms need to handle inter-organizational relationships with value creation partners, such as suppliers, which become, albeit on a contractual basis, manufacturing and R&D partners. Supply chain relationships are activities designed and managed for the purpose of upgrading and continuous improvement of the technological supply chain level.

Industrial buyer-supplier interactions will move towards a strategic relationship for the supplier that are high 'rent generation-based'.

The governance mechanisms reported in the literature largely consider both the category of contractual governance and that of relational governance. In the operative reality of the companies analyzed, the boundary between these categories appears to be very blurred: in the interests of the parties, transaction relationships are based on detailed and flexible and restricted contracts are the opportunism and conflict on both sides of the transaction. In practice, relational governance emphasizes continuous cooperation and mutual investment by both sides of the transaction. Flexibility improves a partner's ability to adapt to situations that may arise unexpectedly in the future. It is obvious that the optimal decision making in purchasing risk management under uncertainty should incorporate many potential risk sources, such as demand, price and supply yield. About inter-firm relationship and from a supplier's perspective, it represents an assurance that the relationship will be subject to good-faith modification if a particular proves detrimental in light of changed circumstances.

The focus of this study within channel management literature is to understand how to manage the supplier's commitment and responsiveness to the time-sensitive requests of the company. The behaviour of suppliers in terms of their responsiveness is found to be less a function of competitive pressures and more a function of close relationships and open communication between the focus company and its suppliers (Zaefarian et al., 201; O'Connor et al., 2018).

In this context, the supplie's ability both to carry out certain innovative activities and to maintain relational behaviours have a strong impact on the production and market performances of the industrial firm's buyers (customers and industrial clothing buyers), as well as on the economic system (table 1).

1. The integration of the supply chain partners, through the sharing of information, promotes real-time knowledge to the companies operating in the various stages of both the changes in the actual market demand and the progress of the work within the supply chain. In fact, the shared information can concern the different aspects of the business logistic process that have a significant impact on the supply chain: from the level of stocks to the committed and available production capacity, from production and delivery plans to promotional initiatives.

2. The competitive performances involving the production area have a significant impact on the results of marketing activities and on the main economic-financial measures of the company (Roi, cash to cash cycle time, RoRs - return on relationships, etc.).

 3. The importance of the interrelation between the creation of value for the end customer and the processes of organization of the supply chain is confirmed by the growing attention that the firms turn to one of the macro-processes of the SCM.

Table 1. – Impact of supply chain integration on business performance

## SOME CONCLUDING OBSERVATIONS

This paper aims to provide the empirical evidence of interaction mechanisms in open innovation systems within innovative purchasing relationships in the stadiums upstream sides of diversified international supply chains. One of the main focuses is also the analysis and interpretation of the aesthetic and rational innovation phenomena in a creative sector.

The research provides important contributions to both strategic management and innovation literatures especially when, the authors consider the role of firm-specific operations systems resources in driving manufacturing based firm innovativeness.

In the empirical analysis it was found that operations-based objectives are important for all companies and can be easily explained by the fact that the ten companies carry out the entire work cycle internally.

These findings have important managerial implications considering that the innovative supply chain processes in which a leading role is assumed by firms operating in so-called traditional manufacturing sectors generate an increase in flexibility of the entire supply chain. The findings indicate that from a flexibility perspective, knitwear firms perform best when suppliers and buyers exceed their expectations.

This also explains why Italian yarn producers can direct their resources to the innovation offer both in the processed materials and in the production, processes adopted to their industrial-buyers and improve their ability to compete at world level. Our findings reveal that the impact of buyer-supplier fit on supply chain performance increases when firms operate in dynamic environments.

In practice, the success of innovative processes requires motivation to innovate and skills in innovation management as well as availability of relevant financial, human, productive, creative resources that can aid innovation.

The focus of the study on Italian fashion luxury knitwear companies has allowed us to develop innovative and creative processes as analogous sequences: innovation process in this framework, with the decision to innovate and advances through stages of investment in innovations, implementation and commercialization in various supply chains also strongly diversified among themselves.

In the empirical analysis it was found that operations-based objectives are important for all the companies investigated: they are manufacturing-based companies, since they carry out internally and internally the entire design-engineering-production cycle (production-cycle company) integrated '). ('integrated production cycle' firm).

Relationships with other supply chain players, especially suppliers in innovative openness processes, pay great attention: they are complex and since they were recently formed, there are no shared value phenomena in innovative relationships.

Cluster analysis confirms the cognitive results that emerged in the qualitative empirical survey and makes it possible to identify the homogeneity or similarity among the companies of the same cluster on the basis of the first level variables (column 2 of table XX).

This research extends the literature on innovative supplier practices which have evaluated the success of crowdsourcing in terms of rationality, donning, safety and opportunity to use of the seasonal fashion collections, by examining how the products developed fit into a manufacturing system's larger product portfolio.

## REFERENCES

Anderson J. C., and Wynstra F. (2010), "Purchasing higher-value, higher-price offerings in business markets", Journal of Business-to-Business Marketing, Vol. 17, No 1, pp. 29-61.

Arregle J. L., Beamish P. W., Hébert L. (2009), "The regional dimension of MNEs' foreign subsidiary localization", Journal of International Business Studies, Vol. 40, No. 1, pp. 86-107.

Barney, J. B. (2012), "Purchasing, supply chain management and sustained competitive advantage: the relevance of resource-based theory", Journal of Supply Chain Management, Vol. 48, No. 2, pp. 3-6.

Bienhaus, F., and Haddud, A. (2017), "Procurement 4.0: factors influencing the digitisation of procurement and supply chains", Business Process Management, Vol. 24, No. 4, pp. 965-984.

Biggeman S., and Buttle F. (2012), "Intrinsic Value of Business-to-Business relationships: An empirical Taxonomy", Journal of Business Research, Vol. 65, pp. 1132-1138.

Cantwell J. (2009), "Location and the multinational enterprise", Journal of International Business Studies, Vol. 40, No. 1, pp. 35-41.

Corsaro D., and Snehota I. (2010), "Searching for Relationship Value in Business Markets: are we missing something?", Industrial Marketing Management, Vol. 39, No. 6, pp. 986-995.

Eisenhardt, K. M., and Schoonhoven, C. B. (1996), "Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms", Organization Science, Vol. 7, No. 2, pp. 136-150.

Ellram, L. M. (1996), "The use of the case study method in logistics research", Journal of Business Logistics, Vol. 17, No. 2, pp. 93-138.

Faems, D., de Visser, M., Andries, P., Looy, B. (2010), "Technology alliance portfolios and financial performance: value-enhancing and cost-increasing effects of open innovation", Journal of Product Innovation Management, Vol. 27, No. 6, pp. 785-796.

Flynn, B.B., Huo, B., Zhao, X. (2010), "The impact of supply chain integration on performance: a contingency and configuration approach", Journal of Operations Management, Vol. 28, No. 1, 58-pp. 71.

Gopal, A., Sivaramakrishnan, K. (2008), "Research note-on vendor preferences for contract types in offshore software projects: the case of fixed price vs. time and materials contracts", Information System Research, Vol. 19, No. 2, pp. 202-220.

Henneberg, S., Mouzas, S., Naudé, P. (2010), "Sense-making and management in business networks: Some observations, considerations, and a research agenda", Industrial Marketing Management, Vol. 39, No. 3, pp. 355-360.

Johannessen, I. A., Mcarthur, P. W., Jonassen, J. R. (2015), "Informal leadership redundancy: balancing structure and flexibility in subsea operations", Scandinavian Journal of Management, Vol. 31, No. 3, pp. 409-423.

Keränen J., and Jalkala A. (2014), "Towards a framework of customer Value Assessment in B2B Markets: An exploratory Study", Industrial Marketing Management, Vol. 42, pp. 1307-1317.

Laursen, K., and Salter, A. J. 2014, "The paradox of openness: Appropriability, external search and collaboration", Research Policy, Vol. 43, No. 5, pp. 867-878.

Lavie, D., and Miller, S.R. (2008), "Alliance portfolio internationalization and firm performance", Organization Science, Vol. 19, No. 4, pp. 623-646.

Lin, S. (2018), "The structural characteristics of innovation ecosystem: a fashion case", European Journal of Innovation Management, Vol. 21, No. 4, pp. 620-635.

Lindgreen A., Hingley M. K., Grant D. B., Morgan R. E. (2012), "Value in Business and Industrial Marketing: Past, Present, and future", Industrial marketing Management, Vol. 41, No. 1, pp. 207-214.

Malhotra, M.K., and Mackelprang, A.W. (2012), "Are internal manufacturing and external supply chain flexibilities complementary capabilities?", Journal of Operations Management, Vol. 30, No. 3, pp. 180-200.

Mandal, S. (2015), "Supply and demand effects on supply chain flexibility: an empirical exploration", Knowledge Process Management, Vol. 22, No. 3, pp. 206-219.

Miller S. R., and Eden L. (2006), "Local density and foreign subsidiary performance", Academy of Management Journal, Vol. 49, No. 2, pp. 341-355.

O'Connor, N., Yang, Z., Jiang, L. (2018), "Challenges in gaining supply chain competitiveness: Supplier response strategies and determinants", Industrial Marketing Management, Vol. 72, pp. 138-151.

Poetz, M. K., and Shreier, M. (2012), "The value of crowdsourcing: Can users really compete with professionals in generating new product ideas?", Journal of Product Innovation Management, Vol. 29, No. 2, pp. 245-256.

Rugman A. M., Verbeke A. (2004), "A perspective on regional and global strategies of multinational enterprises", Journal of International Studies, Vol. 35, No.1, pp. 3-18.

Saemundsson, R. J., and Candi, M. (2017), "Absorptive capacity and the identification of opportunities in new technology-based firms", Technovation, No. 64, pp. 43-49.

Sreedevi, R., Saranga, H. (2017), "Uncertainty and supply risk: the moderating role of supply chain flexibility in risk mitigation", International Journal of Production Economics, Vol. 193, No. 29, pp. 332-342.

Tang, C., and Tomlin, B. (2008), "The power of flexibility for mitigating supply chain risks", International Journal of Production Economics, Vol. 116, No. 1, pp. 12-27.

Ulaga, W. (2011), "Investigating Customer Value in global Business Markets: Commentary Essay", Journal of Business Research, Vol. 64, No. 8, pp. 928-930.

Un, C. A. and Rodriguez, A. (2018), "Learning from R&D outsourcing vs. learning by sourcing". Technovation, No. 72-72, pp. 24-33.

Yan, T., Ribbink, D., Pun, H. (2018), "Incentivizing supplier participation in buyer innovation: Experimental evidence of non-optimal contractual behaviours", Journal of Operations Management, Vol. 57, pp. 36-53.

Yu, K. K., Cadeaux, J., Song, H. (2013), "Distribution network and relationship performance: the intervening mechanism of adaptive flexibility", Decision Sciences, Vol. 44, No. 5, pp. 915-950.

Zaefarian, G., Hennenberg, S. C., Nade, P. (2011), "Resource acquisition strategies in business relationships", Industrial Marketing Management, Vol. 40, No. 6, pp. 862-874.

# DRIVERS OF EMPLOYEE SATISFACTION AND EMPLOYEE LOYALTY IN A HUMAN RESOURCES COMPANY

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## ABSTRACT

The purpose of this study is to examines the drivers of employee satisfaction and employee loyalty to a Human Resource Company. In the knowledge economy, employee loyalty is seen as a critical issue. We propose a theoretical model tested using structural equation modelling (SEM). A questionnaire survey was developed to explore the relationships among psychological rewards, teamwork, internal marketing, employee satisfaction, and employee loyalty. For this study, 149 valid questionnaires were collected from a sample of Portuguese human resources company. The results showed that psychological rewards, teamwork, and internal marketing are determinants of employee satisfaction. In turn, internal marketing is a direct antecedent of employee loyalty to an organization and employee satisfaction is a direct determinant of employee loyalty. Thus, employee satisfaction acts as a mediator between the independent variables, psychological rewards, teamwork, and internal marketing, and the final variable, employee loyalty to an organization.

*Keywords: Employee Loyalty Drivers; Employee Satisfaction Drivers; Human Resources Company.*

## 1. INTRODUCTION

In the last 30 years, "the relationships between employers and employees have evolved from stable to increasingly casual ones. The proportion of flexible contracts has increased steadily, and job tenure is no longer any guarantee of increased pay or promotional prospects. Therefore, loyalty has become one of the vital concerns for organizations, especially in the context of the economic tensions related to the "psychological contract" between employers and employees (Rahimpour et al., 2020). Theoretical discussions and anecdotal illustrations have examined how employee loyalty can, in turn, develop good customer service and customer loyalty, ensuring the long-term profitability and success of an organisation. Such links are particularly pertinent in service industries where customer relationships are associated more closely with service providers than with the organisation" (Ineson, Benke, & László, 2013, p. 31).

The factors that make employees loyal, motivate them to stay with a company have been researched extensively. The plethora of different opinions reflects the heterogeneity of background factors in the research. Psychological rewards, teamwork, and internal marketing are some of the key factors among employee and employer to exchange relationship. Basically, two types of rewards are awarded to motivate employees. The first one is extrinsic rewards which are the tangible rewards given to staff by higher management like increment in salary, bonuses, and other fringe benefits and the second is intrinsic rewards which are psychological rewards that staff get from performing meaningful work well. Rewards mechanisms characterize inducements employees receive from their firms such as social identity, compensation, esteem, and status (Yavas et al., 2003). Needs and wants of employees are fulfilled when they identify that rewards from the organization such as recognition, personal growth, salary, promotion, and meaningful work meet or go beyond their expectations (Hackman & Oldham, 1980). A work team refers to group of individuals who work interdependently to solve problems or carry out work (Malik, Malik, and Zia-ur-Rehman, 2013). Teamwork is important for internal employees to work as a team to satisfy the external customer (Braimah, 2016). In turn, the essence of internal marketing is based on the view of the employee as the organization's first customer (Berry, 1981). From this perspective, employment is a type of internal product that must be able to attract, develop, motivate and satisfy employees (Berry, 1981) to obtain, as a return of this satisfaction, high-quality services for external customers and, consequently, the loyalty and satisfaction of these clients (Kaurav et al., 2016). Job satisfaction was defined "as the way the employees develop a perception about their job and the degree to which employees like their jobs" (Abu-Shamaa, Al-Rabayah, and Khasawneh, 2015). The more the work environment takes care of employees' needs and values, the more satisfied employees become of their jobs (Papoutsis, Labiris, and Niakas, 2014). Employee loyalty is a common area of interest for researchers and employers. Loyal employees importantly contribute to the development of any companies. The value of employee contributions to the business will increase with their working time at the company. Hence, a company's policies always are aimed at growing employee loyalty to facilitate their lengthy tenure. Many companies point to a difficult situation and losses in profits due to employee departures. The frequent departure of employees can impact the effectiveness and spirit of those who remain in the enterprise (Phuong and Vinh, 2020).

The remainder of this paper is structured as follows. First, a thorough literature review helps to clarify the link between research variables. Then, a conceptual model and research hypotheses are proposed. Posteriorly, we describe the adopted methodology and discuss the empirical results.

## 2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

Authors have argued that few employees are loyal and highlight the importance of recognising and maintaining loyalty situations (Knippen and Green, 1996). Attitudes to employee loyalty are dyadic: both participants, employer, and employee, who are involved in this professional and hierarchical relationship, should be aware of the importance and the benefits of loyalty situations (Ineson, Benke, & László, 2013). High employee turnover, one form of the manifestation of lack of employee loyalty, is attributable to factors including lack of job satisfaction, poor working conditions, low compensation, and inadequate benefits (Carraher, 2011). Whilst Johnson (1986) maintains that the costs associated with labour turnover are negligible, others, like Milman (2003), view the cost factor generated by employee turnover to be substantial.

The loyalty of employees exists in the company, when employees believe in the objectives of the company, accept the objectives as their own, work for the common welfare, and want to stay in the company (Antoncic & Antoncic, 2011). Attachment to the company is developed in the circumstances of identification with the company. Employee loyalty can be a multifaceted construct, which is characterized by the identification of employees with the company's mission and with work ethic. The loyalty of an employee can be expressed through a feeling of the individual to belong to the company and the team of co-workers, whom he or she wants to help, and the willingness to support the company leader, to act in accordance with the work ethic and professionalism, to stay in the company in the time of crises, to have a will to do his or her work, to spread information about the good name of the organization (Varona, 2002, p. 127).

Employee loyalty is a form of employee loyalty that can be seen in how an employee defends the company or organization both inside and outside the company. Employee loyalty is employees who feel satisfied and behave loyally when they know the company or organization. Employee loyalty is a form of loyalty of an individual employee to an organization or company where they work (Seth, 2022).

Despite considerable scholarly attention to the concept, loyalty and its dimensions remain loosely defined. Turkyilmaz et al. (2011) theorize loyalty as a psychological state, which describes the relationship between employees and their organizations, which has its implications on their decisions to stay or not with their organizations. Though several authors operationalize loyalty as similar to organizational commitment, loyalty differentiates itself in that loyal employees are characterized by those who would stay with the organization, with a sense of belongingness, as well as enact themselves as ambassadors of the organization (Aboobaker, Eduard, and Zakkariya, 2020). Employee loyalty is demonstrated not only in terms of higher intention to stay with the organization but also by being insensitive to fringe benefits offered by alternate employers and engaging in word of mouth

about the organization (Ibrahim and Al Falasi, 2014). Employee loyalty is earned by creating a stable and challenging workplace. Loyal workers actively engage in their organization's objectives, act in accordance with their organization's long-term well-being, and neither seek alternative employment nor respond to outside offers even when offered slightly higher pay (Abdullah et al., 2011).

Loyal workers tend to exhibit higher productivity, provide enhanced customer service and reduced labor turnover costs (Matzler and Renzl, 2006; Mohsan et al., 2011; Albrecht and Andreetta, 2011), all of which yield additional revenues to firms, and henceforth, employee loyalty becomes an imperative concern to the organization (Aboobaker, Eduard, and Zakkariya, 2020).

We have considered, in this paper, as antecedents of employee loyalty, employee satisfaction, psychological rewards, teamwork, and internal marketing. Employee satisfaction is recognized as one of the most important drivers of loyalty (Matzler and Renzl, 2006). Satisfied workers work harder, are more motivated and have higher morale (Eskildsen and Dahlgaard, 2000). The idea of job satisfaction was first proposed by Hoppock in 1935, who considered job satisfaction as the subjective responses of workers to work situations, including psychological and physiological satisfaction with environments, as well as the feeling or emotion responses to the job (Huang, 2016).

Job satisfaction and productivity is at the forefront of interest for employers, and it is important to understand the benefits of job satisfaction and what it means. People spend the majority of their lives at work than any other place, it is important that the place they spend the majority of their adult life is one that they are satisfied (Duari and Sia, 2013). When the individual is happy the company is happy and many good things happen when this is the case, including increases in productivity, creativity, quality, customer satisfaction, innovation, and adaptation. Labour markets and economists should really understand the significance of job satisfaction, it has been documented to have high positive correlations with worker performance and productivity (Tumen & Zeydanli, 2016). Difficult working conditions cause for workers to be dissatisfied and overburdened with an abundance of workload. Increases in monetary rewards are not fully replacing the need for satisfaction in the work area, but more so, human to human interactions and relationships drive the overall satisfaction (Abdul, 2013). Rewards are used to keep good performers motivated and satisfied (Rynes, Gerhart, and Minette, 2004). As we have already stated, Basically, two types of rewards are awarded to motivate employees: extrinsic rewards (tangible rewards given to staff by higher management like increment in salary, bonuses, and other fringe benefits) and intrinsic rewards (psychological rewards that staff get from performing meaningful work well). In certain sectors, like telecom and public organizations in Pakistan, the relationship between extrinsic rewards with work fulfillment is more significant compared to intrinsic rewards on employees working, because the employees are more concerned with the salaries (Muhammad et al., 2012). However, according to study done by Muhammad (2012),

employees of private banks in Pakistan were satisfied with intrinsic reward variables such as job autonomy, job significance, job participation and appreciation, while in public banks industry, staff were fulfilled with job autonomy, job participation and appreciation.

Teamwork is "a cooperative process that allows ordinary people to achieve extraordinary results" (Scarnati, 2001), because they share knowledge, skills, and ideas between members to solve problems and get a better result (Giao, Vuong, and Tung, 2020). Teamwork seems to increase employees' control of their work, create a more enjoyable working environment, satisfy employees' affiliation needs, minimize anxiety, and make them look for the best ways to perform their jobs effectively and efficiently (Jiang, 2010). Team building is the process to enhance the effectiveness and efficiency of the team by generating a supportive working environment, improved level of understanding, effective communication, right alliance, and high level of trust among the team members (Alvi, Kayani, and Mir, 2020).

Bak aet al. (1994, p. 38) define internal marketing as using '...a marketing perspective for managing an organization's human resources...'. They evidently underline the notion that the basis of internal marketing is that 'internal exchanges between the organization and its employee groups must be operating effectively before the organization can be successful in achieving its goals regarding external markets' (Cahill, 1995, p. 44). Most scholars focus on the perception that, in order to have satisfied customers, one should first have satisfied employees. To this end, Grönroos (1981) noted over three decades ago that the organisation must treat employees as ICs (part-time marketers), so as to create an internal environment which supports customer consciousness. Accordingly, Internal Marketing is the philosophy of treating employees as customers (Berry and Parasuraman, 1991). Thus, Internal Marketing is a philosophy that advocates a modern view of employees (Almaslukh, Kalid, and Sahi, 2022). Internal Marketing is an application of marketing theory and practice to employees within a company before it will be practiced to customers outside the company (Alma, 2014). In this case, the company has two customers, namely internal customers or employees and external customers or customers (Amalia and Sukaris, 2023). However, in internal marketing, the role of being a customer in a company is an employee of the company itself. Service companies are required to always provide the best to their customers (external), of course, companies must have service providers or employees or human resources who are good, motivated, and loyal to work.

Managers have to hire people who serve customers, and they have to do their best. According to Alma (2014), internal marketing means that managers need to pay attention to their employees as customers, pay attention to the quality of their work as products, and try to design services and products as well as possible to meet the wishes of their customers outside the company. Kotler and Armstrong (2012) state that internal marketing is the task of training and recruiting competent

employees who are willing to serve consumers well. A good marketer realizes that marketing activities inside the company can be as important and even more important than marketing activities directed outside the company. It is not uncommon to promise the best service before the company staff is ready to provide it. This definition shows how important it is in meeting the needs of employees in order to improve and obtain high quality employees to serve their customers (Sigit and Muafi, 2022). Internal marketing was considered to be constituted by formal communication and training (Kadic-Maglajlic et al., 2018). However, from a more holistic view, Kim, Song, and Lee (2016) measured internal marketing via five functional activities, arguing that organizations communicate not only their cultures and values explicitly (i.e. direct communication) but also implicitly through various support systems (i.e. training, management support, compensation and welfare).

Various authors suggested that psychological rewards are antecedents of employee satisfaction (Hofmans, De Gieter, and Pepermans, 2013; Mainardes, Rodrigues, and Teixeira, 2019; Almaslukh, Kalid, and Sahi, 2022). Consequently, the following hypothesis is proposed:

**H₁:** Psychological rewards have a positive influence on employee satisfaction.

In turn, empirical results from a study conducted by Acuna, Gomez and Juristo (2009) reveal that working in a team is closely associated with the possibility to learn new things as well as job enlargement elements which have been found to be positively associated with job satisfaction. Having friendly and helpful colleagues also contributes towards increased satisfaction on the job (Kreitner, Kinicki, and Cole, 2003). A study, conducted by Viswesvaran, Deshpande and Joseph (1998), further corroborates previous findings in suggesting that there is a positive correlation between job satisfaction and teamwork. Based on the foregoing discussion, it appears that the existence of a positive association between teamwork and job satisfaction may not be contestable. In turn, several studies have shown that teamwork is determinant of employee satisfaction (Malik, Malik, and Zia-ur-Rehman, 2013; Mafini and Dlodlo, 2014; Arunachalam and Palanicham, 2017; Alvi, Kayani, and Mir, 2020, Glaveli, Vouzas, and Roumeliotou, 2022). Therefore, the following hypothesis is proposed:

**H₂:** Teamwork has a positive influence on employee satisfaction.

Satisfying employees can be easily achieved through internal marketing (Sarker and Ashrafi, 2018). Some studies have shown that internal marketing has a positive influence on job satisfaction (Du, Preez and Bendixen, 2015; Bailey, Albassami, and Al-Meshal, 2016; Kanyurhi and Akonkwa, 2016; Sarangal and Nargotra, 2017; Sohail and Jang, 2017; Mainardes, Rodrigues, and Teixeira, 2019; Al-Hazmi, 2020, Taştan and Davoudi, 2020; Chen et al., 2021; Helmi et al., 2022; Sriphong et al., 2022, Thai et al., 2023). The research on the relationship between internal marketing and job satisfaction states that to deliver effective service to external customers, the organization should first serve their

employees which are an internal customer in order to enhance their job satisfaction (Chen et al., 2015). The abovementioned works highlight the finding that the greater the investment in internal marketing practices, the higher the job satisfaction of employees. Based on such relationships, the following hypothesis is developed:

**H₃:** Internal Marketing has a positive influence on employee satisfaction.

Employee loyalty will be more easily built when employees feel empowered by the organization, one of which is through internal marketing, which is the company's effort to provide skills and stimulate employees to provide the best services that are aimed at developing employees as internal consumers (Helmi et al., 2022). Based on the explanation, the hypothesis is as follows:

**H₄:** Internal Marketing has a positive influence on employee loyalty.

Employees with a high level of managerial satisfaction have a higher work ethic and are more likely to stay in the organization for a longer period of time, whereas dissatisfied employees are less productive and are more likely to leave the organization. In the realm of private universities, if lecturers are satisfied and willing to be highly committed to the work and management of the agency, lecturers' loyalty is also high (Hemi et al., 2022). Several authors have shown thar employee satisfaction is a determinant of employee loyalty (Chen, Tsui, and Lee, 2017; Frempong, Agbenyo, and Darko, 2018; Chao and Cheng, 2019; Goujani et al., 2019; Hung, Cheng, and Chiu, 2019; Strenitzerová and Achimský, 2019; Dhir, Dutta, and Ghosh, 2020; Khuong and Linh, 2020; Kim and Vinh, 2020; Veloso et al., 2021; Vuong et al., 2021; Aristana, Arsawan, and Rustiarini, 2022; Shehawy, 2022). Based on the explanation, the following hypothesis is developed:

**H₄:** Employee satisfaction has a positive influence on employee loyalty.

## 3. RESEARCH METHODOLOGY

Thus, the research model, presented in Figure 1, was proposed, in which psychological rewards, teamwork, and internal marketing influence employee satisfaction, and internal marketing influences employee loyalty. Finally, employee satisfaction positively impacts employee loyalty.
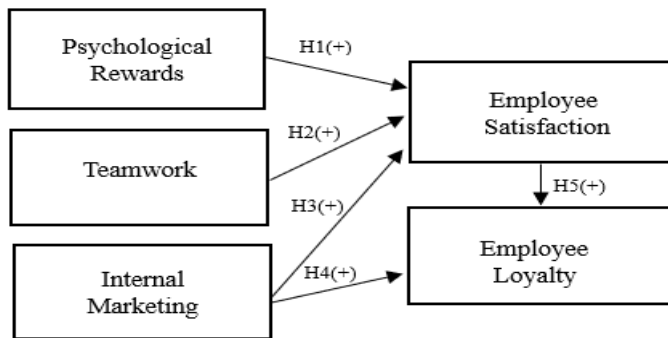
Figure 1. Proposed Conceptual Model

### 3.1. Sample selection and data collection

This research study used a structured and self-administered questionnaire that addressed all the information needed. A sample of convenient elements was obtained by using a non-probabilistic convenience sample. Data was collected through a survey of a human resources company, which was developed in an online format, and 149 valid responses were obtained. As for the gender of the respondents, we obtained 97 female and 52 male responses, which represents a percentage of 65.1% and 34.9%, respectively. Analysing the age of the respondents, 14,8% represents ages smaller than 25 years old, 44.3% of the sample represents ages between 25 and 34 years old, 30,2% represents ages between 35 and 44 years old, and 10,7% equal to or larger than 45 years old. Regarding occupation, 117 of the respondents are only working, which corresponds to 78.5% of the population, while the rest are working students, which corresponds to 21.5% of the population. With regard to the level of education, it can be seen that the majority of respondents have a university degree, which corresponds 55,7%. Then, 23,5% of the population, referring to 35 of the respondents, holds a Master's degree and 10,7% completed secondary education.

### 3.2. Measurement scales

The measurement scales of the constructs were based on the literature. All variables were measured on a seven-point Likert scale, ranging from 1- strongly disagree to 7- strongly agree.

The measurement scales of the constructs were based on the literature. All variables, presented in Table 2, were measured on a seven-point Likert scale, ranging from 1- strongly disagree to 7- strongly agree. The psychological rewards measures were adapted from Mainardes, Rodrigues, and Teixeira (2019). The teamwork measures were adapted from Vuong et al. (2021). The internal marketing was adapted from Mainardes, Rodrigues, and Teixeira (2019). The employee satisfaction was measured using the scales of Mainardes, Rodrigues, and Teixeira (2019) and Vuong et al. (2021). The employee loyalty measures were adapted from Book, Gatling, and Kim (2019).

## 4. ANALYSIS AND RESULTS

*4.1. Measurement Model*

An initial screening of each scale was conducted using item-total correlations, and exploratory factor analysis (EFA) using SPSS 26.0. Following Anderson and Gerbing's (1988) two-step approach, a measurement model was estimated before testing the hypotheses, using a structural model. The analysis of data was realized through confirmatory factor analysis (CFA) and structural equation modeling (SEM) using the statistical software AMOS (Analysis of Moment Structures) version 26.0. Maximum likelihood estimation procedures were used since these afford more security in samples that might not present multivariate normality.

The measurement model fits the data well. To test a model's fit, the chi-square (X2) test statistic concerning degrees of freedom (df) can be used. If the X2 /df value is less than 3, the model is considered a good fit. The chi-square (X2) was 345.587 with 220 degrees of freedom at p<0.001 (X2/df=1.571). Because the chi-square is sensitive to sample size, we also assessed additional fit indices: (1) incremental fit index (IFI), (2) Tucker–Lewis coefficient (TLI) and (3) comparative fit index (CFI). All of these fit indices are higher than 0.9 (IFI=0.96, TLI=0.95 and CFI=0.99). Because fit indices can be improved by allowing more terms to be freely estimated, we also assessed the RMSEA, which is 0.062.

CFA enables the performance of tests regarding the convergent validity, discriminant validity and reliability of the study constructs. A commonly used method for estimating convergent validity examines the factor loadings of the measured variables (Anderson and Gerbing, 1988). Following the recommendations by Hair et al. (2014), factor loadings greater than 0.5 are considered very significant. Also, we used the AVE to contrast convergent validity. Fornell and Larcker (1981) suggested adequately convergent valid measures should contain less than 50% error variance (AVE should be 0.5 or above). Convergent validity was achieved in this study because all the factor loadings exceeded 0.5 and all AVEs were greater than 0.5. Next, CFA was used to assess discriminant validity. If the AVE is larger than the squared correlation between any two constructs, the discriminant validity of the constructs is supported (Fornell and Larcker, 1981).

To assess reliability, the composite reliability (CR) for each construct was generated from the CFA. The CR of each scale must exceed the 0.7 thresholds (Bagozzi, 1981). As Table 1 shows, the composite reliability coefficients of all the constructs are very good or excellent, being larger than 0.8 and 0.9, except for the variable lost benefits costs (0.87). Cronbach's alpha indicator was also used to assess the initial reliability of the scales, considering a minimum value of 0.7 (Cronbach, 1970; Nunnaly, 1978). As shown in Table 1, coefficient alpha values are all over 0.8 and 0.9, exhibiting

high reliability. Table 1 also shows the AVE for each construct, and a correlation matrix of constructs is also shown. In Table 2, we can also see the standardized loadings and t-value of all scale items.

Table 1– Factor Correlation matrix and measurement information

| Construct | CR | AVE | X 1 | X2 | X 3 | X 4 | X 5 |
|---|---|---|---|---|---|---|---|
| Psychological Rewards (X1) | .87 | .70 | .87 | | | | |
| Teamwork (X2) | .83 | .77 | .54 | .83 | | | |
| Internal Marketing (X3) | .92 | .66 | .79 | .57 | .91 | | |
| Employee Satisfaction (X4) | .94 | .73 | .70 | .57 | .77 | .94 | |
| Employee Loyalty (X5) | .95 | .77 | .73 | .58 | .81 | .84 | .95 |

Note: In diagonal entries (italic) are Cronbach's alpha coefficients; AVE, average variance extracted; CR, composite reliability.

Table 2 - Measures, standardized parameter estimates results and measurement model t values

| Measures | Standardized Loadings | t-Value |
|---|---|---|
| Psychological Rewards | | |
| I am satisfied with the recognition I receive from my immediate superior for doing my job (PR1) | 0.873 | 12.959 |
| I am satisfied with the compliments my immediate superior says about my work (PR2) | 0.888 | 13.305 |
| I am satisfied with the incentives of my immediate superior while doing my job (PR3) | 0.736 | 10.085 |
| | 0.766 | 10.239 |
| Teamwork | 0.744 | 9.843 |
| My work mates help me whenever I need them (TW1) | 0.698 | 9.037 |
| I work in harmony with my colleagues (TW2) | 0.760 | 10.122 |
| I have no difficulty in sharing work with my colleagues (TW3) | | |
| It is easy to share work with my colleagues (TW4) | | |
| | 0.797 | 11.434 |
| Internal Marketing | 0.784 | 11.156 |
| | 0.844 | 12.482 |
| My company encourages me to take initiative (IM1) | 0.778 | 11.032 |
| My company improves my perception of self-efficacy (IM2) | 0.845 | 12.506 |
| My company's internal communications are effective (IM3) | | |
| Employees in company bank are constantly trained (IM4) | | |
| Employees in my bank are motivated to remain employed there (IM5) | 0.870 | 13.200 |
| | 0.890 | 13.703 |
| | 0.867 | 13.127 |
| Employee Satisfaction | 0.842 | 12.540 |
| | 0.785 | 11.250 |
| I find real joy in my job (EJ1) | | |
| I like my job more than people in general like their jobs (EJ2) | | |
| On most days, I am excited about my job (EJ3) | 0.891 | 13.838 |
| I feel very satisfied with my job (EJ4) | 0.887 | 13.742 |
| I consider my company as a second home (EJ5) | 0.919 | 14.583 |
| | 0.897 | 13.998 |
| Employee Loyalty | 0.789 | 11.429 |
| | 0.883 | 13.631 |

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I plan to work at my present job for as long as possible (EL1)
I will not most certainly look for a new job in the near future (EL2)
I plan to stay in this job for at least two to three years (EL3)
I intend to stay with my company for the foreseeable future (EL4)
I would hate to quit this job (EL5)
All things considered; it is likely that I will make a serious effort to stay in my current job for years to come (EL6)

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### 4.2. Structural Model

The structural model, depicted in figure 2, fits the data well (X2=348.572, df=222, p<0.001; X2/df=1.570; IFI=0.96; TLI=0.95; CFI=0.96; RMSEA=0.062).
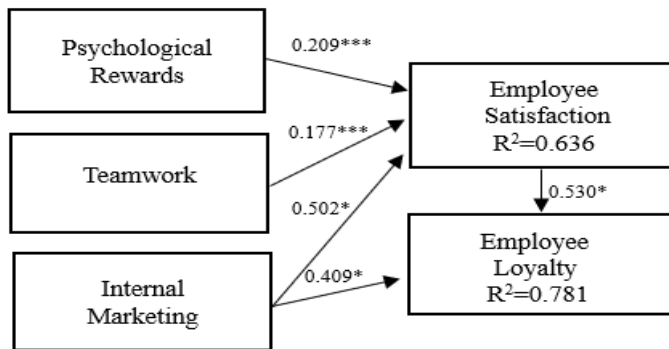


R²=squared multiple correlations; *p<0.001; **p<0.005.
Figure 2. Structural model

The results in Table 3 show the five hypotheses proposed in the structural model, where all were supported.

Table 3 – Estimation results of the structural model

| Paths | Standardized Loadings | t-Value | Hypotheses |
|---|---|---|---|
| | 0.209*** | 1.813 | H1 (+): S |
| Psychological Rewards ◎ Employe Satisfaction | 0.177*** | 2.127 | H2 (+): S |
| Teamwork ◎ Employee Satisfaction | 0.502* | 4.016 | H3 (+): S |
| Internal Marketing ◎ Employee Satisfaction | 0.409* | 4.652 | H4 (+): S |
| Internal Marketing ◎ Employee Loyalty | 0.530* | 6.045 | H5 (+): S |
| Employee Satisfaction ◎ Employee Loyalty | | | |

Note: * p<0.001; ** p<0.01; *** p<0.01 (one-tail tests).

The variable which exerts a stronger impact on employee satisfaction is internal marketing. As for employee loyalty, internal marketing also has a very strong influence. Teamwork is also important to satisfy employees. Psychological rewards, on the other hand, have a very weak effect on employee satisfaction. In employee loyalty to a company, employee satisfaction is the variable that assumes the most important role, followed by internal marketing.

However, the analysis of the total effects, direct and indirect, becomes very important, since the analysis of the direct effects may not be revealing. As shown in Table 4, the Boostrapping technique was used with a sample of 2,000 random observations generated from the original sample and a 95% confidence interval.

Table 4 – Standardized direct, indirect and total effects

| Paths | Direct Effects | Indirect Effects | Total Effects |
|---|---|---|---|
| Psychological Rewards ◎ Employe Satisfaction | 0.209ns | - | 0.209ns |
| Teamwork ◎ Employee Satisfaction | 0.177**** | - | 0.177**** |
| Internal Marketing ◎ Employee Satisfaction | 0.502** | - | 0.502** |
| Psychological Rewards ◎Employee Loyalty | - | 0.111ns | 0.111ns |
| Teamwork ◎ Employee Loyalty | - | 0.094**** | 0.094**** |
| Internal Marketing ◎ Employee Loyalty | 0.409* | 0.266** | 0.675** |
| Employee Satisfaction ◎ Employee Loyalty | 0.530** | - | 0.530** |

Note: * $p<0.001$; ** $p<0.01$; ***; $p<0.05$; ****$p<0.1$.

In employee loyalty, the strongest total effect (direct and indirect) comes from internal marketing, followed by employee satisfaction, whose impact is only direct. Teamwork has a weak indirect effect on employee loyalty and psychological rewards have no effect on employee loyalty. It can thus be concluded that internal marketing plays an important role in both employee satisfaction and employee loyalty to a company.

# 5. CONCLUSIONS

In a human resource company, we can conclude that internal marketing plays a decisive role in both employee satisfaction and employee loyalty to this type of company. Finally, employee satisfaction is very important for employees to become loyal to this type of company. The effects of psychological rewards and teamwork on employee satisfaction are weaker. Also on employee loyalty, psychological rewards have no indirect effect and teamwork has a very weak indirect influence.

# REFERENCES

Abdullah, R., Musa, M., Zahari, H., Rahman, R. and Khalid, K. (2011), "The study of employee satisfaction and its effects towards loyalty in hotel industry in Klang Valley, Malaysia", International Journal of Business and Social Science, Vol. 2, No. 3, pp. 147-155.

Aboobaker, N., Eduard, M., and Zakkariya, K.A. (2020), "Workplace spirituality and employee loyalty: an empirical investigation among millennials in India", Journal of Asia Business Studies, Vol. 14, No. 2, pp. 211-225.

Abu-Shamaa, R., Al-Rabayah, W.A., and Khasawneh, R.T. (2015), "The Effect of Job Satisfaction and Work Engagement on Organizational Commitment", The IUP Journal of Organizational Behavior, Vol. XIV, No. 4, pp. 7-27.

Abdul, R. (2013), Impact of Working Environment on Job Satisfaction, 2nd Global Conference on Business, Economics, Management and Tourism, Czech Republic.

Al-Hazmi, N. (2020), "Internal marketing policies and procedures at Prince Sattam Bin Abdulaziz University and the extent of workers' satisfaction", Management Science Letters, Vol. 10, No. 7, pp. 1427-1436.

Albrecht, S. and Andreetta, M. (2011), "The influence of empowering leadership, empowerment and engagement on affective commitment and turnover intentions in community health service workers. Test of a model", Leadership in Health Services, Vol. 24, No. 3, pp. 228-237.

Alma, B. (2014), Manajemen Pemasaran dan Pemasaran Jasa, Bandung: CV Alfabeta.

Almaslukh, F.M., Kalid, H., and Sahi, A.M. (2022), "The Impact of Internal Marketing Practices on Employees' Job Satisfaction during the COVID-19 Pandemic: The Case of the Saudi Arabian Banking Sector", Sustainability, Vol. 14, pp.1-15, https://doi.org/10.3390/su14159301.

Arunachalam, T. and Palanicham, Y. (2017), "Does the soft aspects of TQM influence JS and commitment? An empirical analysis", The TQM Journal, Vol. 29, No. 2, pp. 385-402.

Alvi, A.K., Dr. Kayani, U.S., and Mir, G.M. (2020). "Relationship of Employee Training, Employee Empowerment, Teamwork with Job Satisfaction", Journal of Arts and Social Sciences, Vol. 7, No. 2, pp. 185-198.

Amalia, S.R. and Sukaris (2023), "Internal Marketing Analysis as a Means to Satisfy Internal Customers", Proceeding Universitas Muhammadiyah Gresik Social Science and Humanities International Conference (UMGCINMATIC), Vol. 2, No 1, pp. 41-45.

Antoncic, J.A. and Antoncic, B. (2011), "Employee loyalty and its impact on firm growth", International Journal of Management & Information Systems, Vol. 15, No. 1, pp. 81-88.

Aristana, I.N., Arsawan, I.W.E., and Rustiarini, N.W. (2022), "Employee loyalty during slowdown of Covid-19: Do satisfaction and trust matter?", International Journal of Tourism Cities, Vol. 8, No. 1, pp. 223-243.

Bailey, A.A., Albassami, F., and Al-Meshal, S. (2016), "The roles of employee job satisfaction and organizational commitment in the internal marketing-employee bank identification relationship", International Journal of Bank Marketing, Vol. 34, No. 6, pp. 821-840.

Bak, C.A., Vogt, L.H., George, W.R., and Greentree, I.R. (1994), "Management by team: An innovative tool for running a service organization through internal marketing", Journal of Services Marketing, Vol. 8, No. 1, pp. 37-47.

Berry, L.L. (1981), "The employee as customer", Journal of Retail Banking, Vol. 3, No. 1, pp. 33-40.

Berry, L.L. and Parasuraman, A. (1991), Marketing services, New York, NY: The Free Press.

Book, L., Gatling, A., and Kim, J. (S.) (2019), "The effects of leadership satisfaction on employee engagement, loyalty, and retention in the hospitality industry", Journal of Human Resources in Hospitality & Tourism, Vol. 18, No. 3, pp. 368-393.

Braimah, M. (2016), "Internal marketing and employee commitment in the hospitality industry", African Journal of Hospitality, Tourism and Leisure, Vol. 5, No. 2, pp. 1-21.

Cahill, J.D. (1995), "The managerial implications of the learning organization: A new tool for internal marketing", Journal of Services Marketing, Vol. 9, No. 4, pp. 43-51.

Carraher, S. (2011), "Turnover prediction using attitudes towards benefits, pay and pay satisfaction among employees and entrepreneurs in Estonia, Latvia, and Lithuania", Baltic Journal of Management, Vol. 6, No. 1, pp. 25-52.

Chao, C-M. and Cheng, B-W. (2019), "Does service recovery affect satisfaction and loyalty? An empirical study of medical device suppliers", Total Quality Management & Business Excellence, Vol. 30. Nos 11/12, pp. 1350-1366.

Chen, Q., Huang, R., Pak, K.Y., and Hou, B. (2021), "Internal marketing, employee satisfaction and cultural congruence of Gulf airlines", Tourism Review, Vol. 76, No. 6, pp. 1214-1227.

Chen, S-Y., Wu, W-C., Chang, C-S., and Lin, C-T. (2015), "Job rotation and internal marketing for increased job satisfaction and organisational commitment in hospital nursing staff", Journal of Nursing Management, Vol. 23, pp. 297-306.

Chen, Y.C., Tsui, P.L., and Lee, C.S. (2017), "The effect of international hotel employee loyalty on customer behavioral intention in Taiwan", International Journal of Managerial Studies and Research, Vol. 5, No. 2, pp. 76-81.

Dhir, s., Dutta, T., and Ghosh, P. (2020), "Linking employee loyalty with job satisfaction using PLS–SEM modelling", Personnel Review, Vol. 49, No. 8, pp. 1695-1711.

Du Preez, R. and Bendixen, M.T. (2015), "The impact of internal brand management on employee job satisfaction, brand commitment and intention to stay", International Journal of Bank Marketing, Vol. 33 No. 1, pp. 78-91.

Duari P. and Sia, S.K. (2013), "Importance of happiness at workplace", Indian Journal of Positive Psychology, Vol. 4, pp. 453-456.

Eskildsen, J.K. and Dahlgaard, J.J. (2000), "A causal model for employee satisfaction", Total Quality Management, Vol. 11, No. 8, pp. 1081-1094.

Frempong, L.N., Agbenyo, W., and Darko, P.A. (2018), "The Impact of Job Satisfaction on Employees' Loyalty and Commitment: A Comparative Study Among Some Selected Sectors in Ghana", European Journal of Business and Management, Vol.10, No.12, pp. 95-105.

Giao, H.N.K., Vuong, B.N., and Tung, D.D. (2020), "A model of organizational culture for enhancing organizational commitment in telecom industry: Evidence from Vietnam", Wseas Transactions on Business and Economics, Vol. 17, pp. 215-224.

Glaveli, N., Vouzas, F., and Roumeliotou, M. (2022), "The soft side of TQM and teachers job satisfaction: an empirical investigation in primary and secondary education", The TQM Journal, Vol. 34, No. 5, pp. 922-938.

Goujani, A.J., Shahin, A., Isfahani, A.N., and Safari, A. (2019), "Analyzing the influence of job satisfaction on hostage employee loyalty in Isfahan Province Gas Company", Benchmarking: An International Journal, Vol. 26, No. 6, pp. 1728-1748.

Grönroos, C. (1981), "Internal marketing: An integral part of marketing theory", in J. Donnelly & W. George (Eds.), Marketing of services, American Marketing Association Proceedings Series (pp. 236-238). Chicago, IL: American Marketing Association.

Hackman, J.R. and Oldham, G.R. (1980), Work Redesign, Addison-Wesley, Reading, MA.

Helmi, S., Suyanto, M., Effendi, M.I., Hidayat, A., Mustafa, Z., Istanto, Y., and Susanto (2022), "The influence of internal marketing on internal service quality mediated by job satisfaction and employee loyalty", Journal of Economics and Sustainable Development, Vol.13, No.6, pp. 63-69.

Hofmans, J., De Gieter, S., and Pepermans, R. (2013), "Individual differences in the relationship between satisfaction with job rewards and job satisfaction", Journal of Vocational Behavior, Vol. 82 No. 1, pp. 1-9.

Huang, S-P. (2016), "A study on the effects of emotional intelligence and workplace friendship on job satisfaction and performance of employees in micro-enterprises", Journal of Interdisciplinary Mathematics, Vol. 19, No. 3, pp. 567-583.

Huang, Y. T., Rundle-Thiele, S., and Chen, Y. H. (2019), "Extending understanding of the internal marketing practice and employee satisfaction relationship: A budget Chinese airline empirical examination", Journal of Vacation Marketing, Vol. 25, No. 1, pp. 88-98.

Hung, S-W., Cheng, M-J. and Chiu, P-C. (2019), "Do antecedents of trust and satisfaction promote consumer loyalty in physical and virtual stores? A multi-channel view", Service Business, Vol. 13, No. 1, pp. 1-23.

Ibrahim, M. and Al Falasi, S. (2014), "Employee loyalty and engagement in UAE public sector", Employee Relations, Vol. 36, No. 5, pp. 562-582.

Ineson, E.M., Benke, E., and László, J. (2013), "Employee loyalty in Hungarian hotels", International Journal of Hospitality Management, Vol. 32, pp. 31-39.

Jiang, X. (2010), "How to motivate people working in teams", International Journal of Business and Management, Vol. 5, No. 10, pp. 223-229.

Johnson, K. (1986), "Labor turnover in hotels - an update", Service Industries Journal, Vol. 6, No. 3, pp. 362-380.

Kadic-Maglajlic, S., Boso, N., and Micevski, M. (2018), "How internal marketing drive customer satisfaction in matured and maturing European markets?", Journal of Business Research, Vol. 86, pp. 291-299.

Kanyurhi, E.B. and Akonkwa, D.B.M. (2016), "Internal marketing, employee job satisfaction, and perceived organizational performance in microfinance institutions", International Journal of Bank Marketing, Vol. 34, No. 5, pp. 773-796.

Kaurav, R.P.S., Chowdhary, N., Prakash, M., and Briggs, A.D. (2016), "Internal marketing: review for next generation businesses", Journal of Services Research, Vol. 16, No. 1, pp. 81-95.

Khuong, M.N. and Linh, U.D.T. (2020), "Influence of work-related stress on employee motivation, job satisfaction and employee loyalty in hospitality industry", Management Science Letters, Vol. 10, pp. 3279-3290.

Kim, J.S., Song, H.J., and Lee, C.K. (2016), "Effects of corporate social responsibility and internal marketing on organizational commitment and turnover intentions", International Journal of Hospitality Management, Vol. 55, pp. 25-32.

Kim, T.T. and Vinh, P.T.T. (2020), "job satisfaction, employee loyalty and job performance in the hospitality industry: A moderated model", Asian Economic and Financial Review, Vol. 10, No. 6, pp. 698-713.

Knippen, J.T. and Green, T.B. (1996), "Coping with one's boss: showing loyalty to your boss", Managerial Auditing Journal, Vol. 11, No. 6, pp. 42-44.

Kotler, P. and Armstrong, G. (2012). Principles of Marketing, 14th Edition, Boston: Pearson Prentice Hall.

Kumar, D.N.S. and Shekhar, N. (2012), "Perspectives envisaging employee loyalty: a case analysis", Journal of Management Research, Vol. 12, No. 2, p. 100.

Mafini, C. and Dlodlo, N. (2014), "The relationship between extrinsic motivation, job satisfaction and life satisfaction amongst employees in a public organisation", SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde, Vol. 40, No. 1, pp. 1-13.

Mainardes, E.W., Rodrigues, L.S., and Teixeira, A. (2019), "Effects of internal marketing on job satisfaction in the banking sector", International Journal of Bank Marketing, Vol. 37, No. 5, pp. 1313-1333.

Malik, N.A., Malik, M.N., & Zia-ur-Rehman, M. (2013), "Investigating the role of HR focused TQM practices in employee satisfaction and loyalty: Financial sector of Pakistan", Academic Research International, Vol. 4, No. 5, pp. 418-429.

Matzler, K. and Renzl, B. (2006), "The relationship between interpersonal trust, employee satisfaction, and employee loyalty", Total Quality Management & Business Excellence, Vol. 17, No. 10, pp. 1261-1271.

Milman, A. (2003), "Hourly employee retention in small and medium attractions: the Central Florida example", Hospitality Management, Vol. 22, pp. 17-35.

Mohsan, F., Nawaz, M., Khan, M., Shaukat, Z. and Aslam, N. (2011), "Are employee motivation, commitment, and job involvement inter-related: evidence from banking sector of Pakistan", International Journal of Business and Social Science, Vol. 2, No. 17, pp. 226-233.

Muhammad, R., Muhammad, J., Mustajab, K., and Maqsood, A. (2012), "Effect of rewards on job satisfaction evidence from Pakistan", Interdisciplinary Journal of Contemporary Research in Business, Vol. 4, No. 1, pp. 379-396.

Papoutsis, D., Labiris, G., and Niakas, D. (2014), "Midwives' Job satisfaction and its main determinants: A survey of midwifery practice in Greece", British Journal of Midwifery, Vol. 22, No. 7, pp. 480-486.

Phuong, T.T.K. and Vinh, T.T. (2020), "Job satisfaction, employee loyalty and job performance in the hospitality industry: a moderated model", Asian Economic and Financial Review, Vol. 10, No. 6, pp. 698-713.

Rahimpour, K., Shirouyehzad, H., Asadpour, M., and Karbasian, M. (2020), "A PCA-DEA method for organizational performance evaluation based on intellectual capital and employee loyalty", Journal of Modelling in Management, DOI 10.1108/JM2-03-2019-0060.

Sarangal and Nargotra, 2017;

Sarangal, R.K. and Nargotra, M. (2017), "nternal Marketing, Employee Job Satisfaction and Employee Engagement: A Case of J&K Bank", Pacific Business Review International, Vol. 10, No. 4, pp. 80-89.

Scarnati, J.T (2001), "On becoming a team player", Team Performance Management: An International Journal, Vol. 7, No. 1-2, pp. 5-10.

Shehawy, Y.M. (2022), "Current workplace issues and behaviours in tourism and hospitality: moderating role of empowering leadership", Current Issues in Tourism, Vol. 25, No. 10, pp. 1627-1648.

Sigit, H. and Muafi, M. (2022), "The influence of internal marketing and organizational commitment on employee performance mediated by psychological capital", International Journal of Research in Business and Social Science, Vol. 11, No. 8, pp. 177-190.

Sohail, M.S. and Jang, J. (2017), "Understanding the relationships among internal marketing practices, job satisfaction, service quality and customer satisfaction: an empirical investigation of Saudi Arabia's service employees", International Journal of Tourism Sciences, Vol. 17, No. 2, pp. 67-85,

Sriphong, C., Raden-Ahmad, M., Kachonkittiya, N., and Suksawang, P. (2022), "The organizational commitment and its relationship with internal marketing, organizational culture, and job satisfaction", Journal of Positive School Psychology, Vol. 6, No. 6, pp. 1803-1822.

Strenitzerová, M. and Achimský, K. (2019), "Employee Satisfaction and Loyalty as a Part of Sustainable Human Resource Management in Postal Sector", Sustainability, Vol. 11, pp. 2-30.

Taştan, S.B. and Davoudi, S.M.M. (2020), "Investigating the mediating role of job satisfaction on the relationship between internal marketing and job performance: a research within services industry", Middle East J. Management, Vol. 7, No. 5, pp. 492-517.

Tausif, M. (2012), "Relationship between intrinsic rewards and job satisfaction: a comparative study of public and private organization", International Journal of Research in Commerce, IT and Management, Vol. 2, No. 6, pp. 33-41.

Thai, T.D-H., Nguyen, T.T., Chen, W-K., and Tang, A.D. (2023), "The roles of internal marketing and person-organization fit in hospitality employees' life satisfaction: an integration of work and nonwork domains", Baltic Journal of Management, Vol. 18, No. 2, pp. 173-189.

Veloso, C.M., Sousa, B., Au-Yong-Oliveira, M., and Walter, C.E. (2021), "Boosters of satisfaction, performance and employee loyalty: application to a recruitment and outsourcing information technology organization", Journal of Organizational Change Management, Vol. 34, No. 5, pp. 1036-1046.

Vuong, B., Tung, D., Tushar, H., Quan, T., and Giao, H. (2021), "Determinates of factors influencing job satisfaction and organizational loyalty", Management Science Letters, Vol. 11 No. 1, pp. 203-212.

# TRANSPARENCY AND ACCOUNTABILITY IN PORTUGUESE PUBLIC UNIVERSITIES

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## ABSTRACT

Universities are one of the most important institutions in our society. They are knowledge-creating organizations that contribute to the social and economic development of society through new concepts, ideas, applications, and inventions. They play a key role in social criticism, identifying key issues and contributing to informed public debates.

Governance is a relatively new concept in the approach to the literature on public management. It is related to the way in which a society or organization is governed or to the creation of conditions for the existence of a social order, triggered by collective actions. In this article we will study the models of university governance and analyze the problem of accountability in its context, with a view to assessing the transparency with which financial information is currently disseminated in Portugal, by public Higher Education Institutions (HEIs).

*Keywords: Governance; university; higher education; accountability; performance*

## INTRODUCTION

Universities are considered one of the most important institutions in our society. They are knowledge-creating organizations that contribute to the social and economic development of society through new concepts, ideas, applications and inventions. They play a key role in social critique, identification of key issues and contributions to informed public debates.

Universities, by the breadth of their goals and missions, have evolved to become one of the most complex organizational forms that human nature has ever created. Given the enormous importance and complexity of the university, the question of how universities should be governed is a recurring issue in Higher Education (HE).

Governance is a relatively new concept in the approach to public management literature. It is linked to the way in which a society or organization is governed or to the creation of conditions for the existence of social order, caused by collective actions (Jessop, 1998; Bouckaert and van de Walle, 2003; Rhodes, 1996 and Stoker, 1998).

Governance has always been an important issue in the context of higher education, but in recent times it has become more prominent as public universities increasingly receive public scrutiny. At the end of the 20th century, universities had a relatively protected existence, in an environment in which they served markets and guaranteed financial support from governments (Parker, 2011).

For the European Commission, governance refers to the rules, processes and behaviors through which interests are articulated, resources are managed, and power is exercised in society (European Commission on Governance and Development, COM, 2003).

Governance is therefore crucial for HE, although it may still be an abstract concept for many people. The importance of governance has significantly increased due to the various scandals that have taken place in the private sector in recent decades. Hence, corporate governance reform has come to be seen as an important mechanism for rebuilding trust between the company and its shareholders, strengthening and supervising financial decisions and improving performance.

Governance is essential for the role of HE at all levels, from the basic academic unit of the department (micro level) to the organizational level (meso level) as well as at the HE level (macro level). It is in this way that order is created in the academic world with a view to achieving the goals of educating, researching, and satisfying multiple audiences. At the micro and meso levels, governance is related to the daily functioning of universities and the way they organize their activities with management tools that facilitate decision-making and the desired organizational performance. At the macro level, through governance mechanisms, the State seeks to ensure that the higher education system achieves the desired goals.

That is, governance structures must be designed to help a university fulfill its mission. In general, it is considered that the better the governance, the greater the benefits arising from it and the greater the possibility of the organization achieving its mission.

In all European countries, overall responsibility for higher education rests with the relevant ministry, ie a government department headed by a minister. In Portugal, the Ministry of Science, Technology and Higher Education is responsible for HE.

In this article, we will study university governance models and analyze the issue of accountability in their context, to assess the transparency with which financial information is currently disclosed in Portugal by public Higher Education Institutions (HEIs).

## PROBLEM CHARACTERIZATION AND WORK OBJECTIVES

In the Middle Ages, the concept of "university" was associated with the enormous prestige given to education by society at the time. The emergence of universities occurs when Europe re-emerges, in the 11th and 12th centuries. The origin of universities dates to the end of the 11th century, in Italy, more

specifically in the city of Bologna, where there was already a center of culture thanks to the "School of Liberal Arts". Later, other episcopal, monastic, and private schools emerged, in which law was taught, and the University of Bologna later emerged (1088) (Simões, 2013). Later, at the end of the 11th century (1096), the University of Oxford emerged. In the twelfth century, schools in Paris already reached an extraordinary development and, in the centuries that followed, there was an expansion of universities. In 1920, and in subsequent years, Europe was covered with universities, which were organized based on a model that included courses in law, medicine and philosophy. Universities came to specialize in the teaching of classic subjects, useful to society, which, according to Caraça (1999), is the simultaneous root of their strength and weakness.

Currently, universities are involved in changes that can affect their identity and institutional structure. The purposes of the university, its organization and governance, the financial base, work processes and its role in modern society are at stake (Magro, 2011).

In the 21st century, universities will be under strong pressure and facing challenges (internal and external) (Coulson et al, 2018; Curaj et al., 2018), such as: the need to boost postgraduate studies, the internationalization of research, changes in the form of state financing, greater productivity, greater relationship with the market and university-industry interaction. Thus, in this century, we will see universities not only in a process of change and adaptation, but also as an organization different from others, endowed with characteristics that make it a particular type of organization.

For Baldridge (1980), Baldridge et al. (1977) and Scott (1992), universities and their faculties are complex institutions with fragmented professional teams that use a wide range of skills to deal with routine problems. In general, members of academia and academic staff have extensive knowledge and experience in a specific domain or subject and are empowered to make decisions within an institution. Sporn (1998) and Jenks and Riesman (2002), explain this complexity with problems of slowness in the decision-making process, internal bureaucracy, corporatism, and unprofessional management, conducted by people not necessarily endowed with the capabilities for such purposes.

In the same line of thought, Lockwood (1985) defines the university as a complex organization, with complex objectives, limited ability to measure results, autonomy of professionals who form the core of the organization, as well as a diffuse structure of authority and internal fragmentation.

Some fundamental characteristics of universities are defined by Van Vught and Maassen (1992), such as: (a) their main activities are knowledge-based; (b) they have a highly fragmented departmental structure, due to the division by area of knowledge, organization of knowledge and research methodologies; (c) Decision-making processes are highly diffuse, with different subunits tied to their own goals and objectives and not aligned with organizational strategy; (d) Within each specific academic area, universities can be innovative and adaptable, even when most innovation is

incremental. But in structural terms, the university is highly resistant to change; (e) Organizational characteristics cannot be separated from the environmental conditions that affect universities.

It can be said that universities have weaknesses in terms of the importance given to the definition of goals and objectives, problems related to the exercise of authority, lack of coordination of decision-making power, excess of personal styles, lack of precision in communication and interaction. in their internal and external environments (Cohen and March, 1974; Becher and Kogan, 1992). Therefore, there is an inherent complexity in the organizational structure of universities, with different processes and independent activities that are interrelated.

Austin and Jones (2016, p. 22) argue that "(...) an organization's mission defines its purpose. For a university, this mission helps create meaning. It helps people answer questions like: Who do we serve? What is our job? And how do we do our work? (Kezar and Lester, 2009), all micro and meso level issues. At the macro level, there is also philosophical guidance to guide a higher education system and its educational achievements. Fenske (1980) offers a useful definition of mission in higher education:

> "Mission is often used to express the often-undeclared efforts that society has for higher education institutions. These aspirations are consensual and represent the general level of hopes and expectations that people generally have in colleges and universities."

## HIGHER EDUCATION IN PORTUGAL

In Portugal, the current reference framework for the governance of higher education institutions is supported by the Constitution, the Basic Law of the Educational System and the Legal Regime for Higher Education Institutions (RJIES), created in 2007. This legislation introduced changes significant changes in the governance and management model of institutions, which until now was characterized by collegiate options, with the academic community being responsible for electing the rector. The coordination of Higher Education policy is the responsibility of the Ministry of Science, Technology and Higher Education.

In the area of higher education governance, the RJIES contains changes in relation to the model adopted previously. The process of transforming the university's governance model after the approval of the diploma required profound changes, such as the restructuring of the university's organic structure and internal power. The governing bodies are now the rector, the general council, which is a restricted body and composed of representatives of professors, students and external personalities, and the management council. The Senate, a crucial body broadly representative of faculty, students, and staff, is now optional and merely advisory. In turn, the Scientific Council, which included all PhD

holders, now includes only elected representatives. With the RJIES, the dean's powers are reinforced (Marques, 2012).

The main transformations introduced by the RJIES, which went from an internally based collegiate model, with multiple seats of institutional governance, to a model in which responsibilities for strategic governance are assigned to a general council, of mixed constitution, with elected internal members and external parties co-opted by them. The dean now assumes the role of promoting a vision for the institution and leads the implementation of policies, strategies and action plans approved by the general council. This body is also responsible for monitoring and critically analyzing the dean's work, which must be based on guiding tools, strategies, plans, and budgets approved by the general council (Pedrosa et al, 2012).

However, more than ten years have passed since the RJIES was approved. The objective of this important reform was to modernize higher education institutions, making them more autonomous, qualified, open, transparent, and accountable. In a very innovative way, the RJIES, in article 185, introduced the need to evaluate its application five years after its entry into force.

In this regard, expressions of interest in the revision of the RJIES, in the extinction of the foundational regime, in the alteration of the binary system of organization of higher education, among other issues, have emerged in the public debate. However, moving towards an amendment to the diploma without a formal and substantive preliminary assessment, which should contain a reflection on what needs to be changed or what, without changing the law, simply needs to be regulated.

As a result of the application of the RJIES, it is known, through studies that have been published, that there are positive results, but it is also known that some issues related to the functioning of the organs have arisen. The general council, which includes elements external to the university, was defined as the institution's strategic guidance and general supervisory body. Among other things, it is responsible for appreciating the actions of the rector and the management board. However, as Rodrigues (2017) points out, in practice, in many universities, the dean plays an active role in the creation and composition of the Council, making it an extension of its power and making the balance and separation of powers provided by law difficult.

In the RJIES, the accountability mechanisms of the external members of the governing bodies of the universities are insufficient. The governmental powers of intervention and guardianship were greatly diminished. Without inspection and appeal mechanisms, the only way to solve problems is to resort to administrative courts, with everything that is negative and ineffective (Rodrigues, 2017). On the other hand, the mechanisms to protect or guarantee the principles of separation of powers and autonomy of the internal governing bodies of universities are insufficient. The author further states that it may not

be necessary to change the law, but it will require a rigorous and transparent assessment exercise and an effective complementary regulatory effort.

## GOVERNANCE MODELS

The concept of governance, being a social and human concept, does not yet have, like many other social concepts, a general definition that is accepted by all researchers or specialists in the field. Recently, governance has gained an increasing space within the scope of Cooperation and Development policies, with the World Bank in 1992 defining governance as one of the mechanisms through which the management of public resources is implemented and whose ultimate objective is to influence economic development and growth. In the understanding of this organization, good governance is seen as a fundamental component in development processes. It refers to the way decisions are made and implemented, consisting of a set of 6 indicators (Rowlands, 2017; Wilkins, 2017; Rymarzak and Alexi Marmot, 2018, OECD, 2020):

• Citizen participation.

• Respect for the law.

• Transparency.

• Consensus orientation.

• Equity and inclusion of all groups.

• Effectiveness and efficiency and accountability.

For the European Union (2000), governance reproduces an environment in a political and institutional context that preserves human rights and is governed by democratic principles and the rule of law. According to this organization, the main governance indicators are the following:

• Transparency.

• Responsible management of human, natural and economic resources.

EU indicators must lead to balanced and sustainable development.

For IFAC (2009) governance is the set of responsibilities and practices exercised by the Board of Directors and executive body ("the governing body") to: (a) ensure strategic direction; (b) ensuring that objectives are achieved, (c) ensuring that risks are properly managed, and (d) verifying that the organization's resources are used responsibly. In their view, this definition reflects both the performance and compliance aspects of governance.

Governance is essential for the functioning of higher education at all levels, from the basic academic unit of the department (microlevel) to the organizational level (mesolevel) and to the level of the higher education system (macro level). It is the means by which order in academia is created to achieve the goals of educating, researching, and providing services to wider audiences. At the micro

and meso levels, governance is related to the day-to-day functioning of universities and the way they organize their affairs through management tools that facilitate decision-making authority to achieve desired organizational performance outcomes. At the macro level, it is through governance mechanisms that the state seeks to ensure that its higher education system achieves the goals set by the state.

Governance has always been an important issue in the study of higher education, but in recent times it has gained more prominence as public universities receive more public scrutiny (Farazmand, 2013; Hénard and Mitterle, 2010; Magalhaes et al, 2013).

The interest of theorists in the management of universities as a research question was investigated until the 1960s in the USA. Until then, the prevailing view in the academic world focused on its members rather than its institutions and was dominated by the Mertonian approach (Musselin, C., 2016).

Kast and Rosenzweig (1985), to explain university management, presented a structure based on four main areas:

• Academic management – for the exercise of academic functions (teaching and research).

• Management of educational services – which includes the acceptance and maintenance of students, as well as the implementation of their academic records.

• Business Management – which includes activities ranging from financing, accounting, purchases and management of support services to maintenance operations for university facilities, etc.; and

• Public Relations - integrate institutional relations with the media, alumni, companies, government entities and other interested parties.

Considering this type of organizational structure, and with a view to university management, management models were developed for this type of organization, based on management models for complex organizations.

The first model is the academic bureaucracy, derived from Max Weber's bureaucratic model and adapted by Henry Mintzberg to other professional organizations. It is based on research carried out by sociologists such as R. Merton (1940), A. Gouldner (1935) or P. Selznick (1949), who discussed the Weberian theory of bureaucratization. Following a similar line of investigation, P. Blau (1973) inserted such an approach in universities. He showed that it is a kind of decentralized bureaucracy, more directed to the teaching organization itself than to research. Mintzberg (1979) took up this concept in higher education institutions, considered as places where bureaucratic characteristics and rational logics can also be found, having defined them as professional bureaucracies.

An example of this model in universities is the management of peripheral services (management of bars, libraries, dormitories, among others) and administrative management (purchasing, registration,

financial decisions, accounting, etc.).

Another model of university governance is the collegiate model. This is based on ideological assumptions of democratic management, which took hold after the democratic transformations (and some of their excesses) in post-war Italy and, recently, in Portugal, Spain and Greece. Similar reasons lead to the use of this model in eastern countries, although offset by their current fascination with American society. It is the most widely adopted framework by academic organizations around the world, in which community participation is effective. As examples, we can mention the members of the Senate and the Administrative Council that are present in most traditional universities, especially public universities.

In the original version (Goodman 1962; Millett 1962), they considered the existence of an academic (scientific) community that share the same norms and values and, therefore, capable of making consensual decisions and overcoming individualisms and private antagonisms. Clark (1971, 1972), on the other hand, expanded this conception and, in his opinion, collegiality does not refer only to academic professional norms and values, but more broadly to those that are participated by all actors involved in the same community, that is: faculty members, administrators, students, directors, etc., of the institution.

This consensual view, based on university values, was strongly contested by G. Baldridge (1971), who emphasized the political nature of decision-making processes and concluded that neither academic nor institutional values were able to reduce the divergent interests in question. For this author, universities are full of conflicts and power relations that must be considered, in order to better understand the negotiations and political exchanges that structure decision-making. Pfeffer and Salancik (1974) and Salancik and Pfeffer (1974) adopted a similar perspective and further praised the role of power in these organizations, concluding that the more a department was able to obtain support from the environment, the stronger it was in negotiation. of resources. This investigation of universities became the starting point for a theory called resource dependence theory that they later developed (Pfeffer and Salancik, 1978), in which they extended their earlier work on universities to other organizations.

Following a different logic from most texts dealing with corporate governance, the theory of resource dependence places the manager in the position of an active agent, so that, instead of acting (monitoring), he uses the so-called governance mechanisms to guarantee efficiency: the indispensable resources for organizational survival. All this was theoretically supported by the resource dependence perspective.

In the political model, the university is a political system in which interest groups use their power for their own benefit. A good example is the university budget process which often results in the highest

levels of funding for those who have the most power and are not the most relevant in terms of size or even reputation (Mainardes, Alves and Raposo, 2011).

Thus, for this theory, organizational behavior is directly related to resource constraints and resource interdependencies, depending on organizational management (Pfeffer; Salancik, 1976). According to these authors, discretionary action would conveniently manage environmental restrictions and the environment itself by organizational interests. Some changes in the environment are partly due to the determination of organizational managers, as they consider the characteristics of the environment compatible with the specific interests of their organizations (Rossetto, 1999). The function of management is to direct the organization to a more favorable environment, manage and establish negotiated environments, which are advantageous for the organization (Pfeffer; Salancik, 1976).

The rational and political essence of decision making in universities was strongly contested by M. Cohen, J. March and J. Olsen (1972), who developed the anarchic model (or garbage can model) and described universities as organizations. characterized by multiple goals, unclear technology and fluid participation (Cohen and March, 1974). In this model, organizations are not coherent in the face of situations experienced, because problems and decision solutions are triggered and decisions result from the gathering of independent flows of problems, solutions, participants, and situations. by choice. Choo (2003) explains that: the anarchic decision model can be compared to a garbage can, where different types of problems and solutions are thrown by individuals as they are generated. The decision is made when problems and solutions come together. We note that this is a model that does not follow any structure and/or sequence because it is governed by chance and luck. In the anarchic model, decisions are made in three ways: a) Resolution: it is the decision that occurs after thinking about the problem for a certain time; b) Inadvertence: a choice is quickly adopted and, incidentally, to find other choices; c) Escape: occurs when problems leave the choice, when there is no resolution of the problem (Choo, 2003). Such a model can be applied in non-academic situations, as Padgett (1980) advocates for an extension of hierarchies and bureaucracy, for an application in a Department of Education, or the well-known adaptation of this thesis to public policies conducted by Kingdon (1984); Mintzberg (2003).

Some dynamic hypotheses were proposed by McNay (1995) who suggested that collegiality and bureaucracy are two successive stages of universities before moving, more recently, to social and business models.

This last perspective already refers to the change that developed in the 1980s. Previously, sociologists used universities as extreme case studies, which allowed the identification of organizational models developed in some cases and adapted to other organizational situations. The last decades were

marked by a refusal of university specificity and the importation of non-academic models (corporate model, entrepreneurial model, management model, etc.) to universities.

Mano and Marques (2012) argue that the European model of shared governance is recent (except for the United Kingdom and Ireland), with some countries, notably the Scandinavians, the Netherlands and Switzerland, which a few years ago proposed some values and ways to get around the American model.

This model aims to correct the deficiencies of traditional European governance systems and, to that end, will seek organizational and functional solutions for the modern theory of organization and institutional management or for the functioning of American universities of excellence. However, due to the variety of these solutions and the different ways in which they have been adapted to national realities, the model cannot be descriptively defined by its principles and criteria alone.

Hardy and Fachin (1996) argue that it is rare to find universities with just one model. What is found in higher education institutions is a mixture of all models, with a tendency for one to prevail over the others.

The new model that Portugal adopted in 2007, with the approval of the new legal regime for higher education institutions (RJIES), somehow defends this perspective in the context of a revised autonomy.

On this issue, Amaral and Teixeira (2000) refer that the market has emerged as an important figure in political discourse, both at the state and institutional levels, noting that, although it has gained autonomy, the State maintains a firm hand in the regulation of education. This results in what is called a hybrid regulatory model. Van Vught (2009), on the other hand, argue that state regulation policies, via market mechanisms, are still not clear and that, according to Dill (2014), the superiority of these mechanisms over traditional mechanisms of public regulation has not yet been proven. .

Thus, the figure of stakeholders - representatives of the various interests that coexist with the university - is formed in its governance structure, to provide adequate responses to the outside world and to make institutions more relevant. The participation of representatives of social interests outside higher education institutions in government bodies of public universities can be seen in the RJIES through the participation of external entities in the General Council.

## ACCOUNTABILITY AND PERFORMANCE IN UNIVERSITIES

The movement of reforms and restructuring of higher education systems in Europe since the 1990s, occurred with the aim of better adapting to the new needs of societies, differentiating the offer to meet the growing demand for higher education. More recently, especially in the 2000s, there have been changes to respond to inadequate public resources dedicated to this sector, while, at the same time,

autonomy has been strengthened to respond to growing concerns about the independence of public higher education institutions and their inherent academic freedom (Eurydice 2020). In fact, institutional leaders face greater demands for effectiveness in results, efficiency in the management processes of financial resources allocated by governments, and for public accountability (Pedrosa, 2014).

Accountability is a difficult term to define (Sinclair, 1995) because it can mean many different things to different people (Bovens, 2007). In its simplest sense, accountability refers to a relationship in which people explain their actions and take responsibility for them (Roberts and Scapens, 1985). In this sense, Edwards and Hulme (1996, p. 967) define accountability as "the means by which individuals and organizations report to a recognized authority (or authorities) and are responsible for their actions". This view assumes that a party has certain "rights" to make requests regarding another person's behavior and to know the reasons for the actions taken (Goddard, 2004). This implies certain expectations about what this person or organization should be able and required to explain, justify, and take responsibility for (Cooper and Owen, 2007).

The concept of accountability is still not consensual and is treated in a varied and comprehensive manner. Accountability is an English term, difficult to translate into a single word for Portuguese. The term accountability can have reciprocal references with responsibility and answerability. Pinho and Sacramento (2009), seek to understand the meaning of the term through extensive research in English-language dictionaries and characterize that it "encloses the responsibility, obligation and accountability of those who hold a position to render accounts according to the parameters of the law, being involved the possibility of burden, which would be the penalty for non-compliance with this directive" Generally used with reference to the supervision and control of the public agent, it is not clear in the delimitation of objects, subjects, means and purpose.

In ethics, accountability and answerability are the same... that is, if someone is responsible, then that someone is answerable, but the main difference is between responsibility and accountability, in that responsibility can be shared while accountability cannot.

## HEI ACCOUNTING INFORMATION SYSTEM

The accounting system of universities and HEIs in general, until 31 December 2017, was based on the POC – Educação (approved by Ordinance 794/2000, of 20 September) which follows the approval of the Official Public Accounting Plan (POCP) (Approved by Decree-Law nº 232/97, of 3 September), whose model serves as its basis. The POC-Education contemplates the adaptations to this plan understood as necessary, to be applied by the entities of the education sector.

Currently, these entities are obliged to adopt the Accounting Standardization System for Public Administrations (SNC-AP), approved in 2015 by Decree-Law 192/2015, of 11 September.

In 2015, public accounting was reformed, and the SNC-AP was approved through Decree-Law No. 192/2015, of 11 September. Its approval, in addition to helping to resolve the fragmentation of the information that existed until then, based either on the POCP or on the sectoral plans, was a way of filling the existing accounting instability. In addition to the above benefits, there was the implementation of accounting harmonization, the alignment of public accounting with national accounting, contributing to the satisfaction of the information needs of the various stakeholders of the Public Administration, about accounting and financial reporting. The expansion of the SNC into the public domain brought the rigor and transparency that public management lacked. The following figure gives an overview of the current public accounting system, based on the SNC-AP:
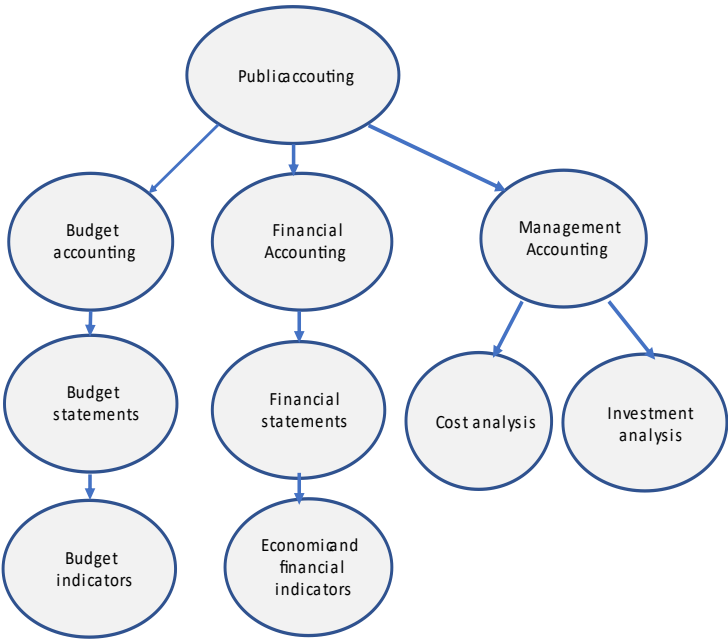


Figure 1 - Composition of the Public Accounting System
Source: Prepared by the author

However, public accounting in general has a more complex character than private sector accounting, consisting of three accounting subsystems: budget accounting, supported by Public Accounting Standard (NCP) 26 – budget accounting and reporting, financial accounting composed of 25 Standards (NCP) based on IPSAS and management accounting – NCP 27. The obligation to maintain three accounting systems emerged from the Accounting Standardization Commission for Public Administration (CNCAP), now integrated into the Standardization Committee Accounting – (CNC) which, at the time, determined that management accounting would be essential to obtain information about costs by activities, functions, goods or services; financial accounting to obtain information about

changes in assets, liabilities, equity, income, expenses and cash flows; and, finally, budget accounting would be essential for recording the budget of revenue and expenditure and their execution.

In addition to the NCPs, the SNC-AP includes a Conceptual Framework (EC) for public financial information, models of Financial Statements (FD), Budget Statements (OD), Annexes and a Multidimensional Chart of Accounts (PCM). It also includes a simplified regime and a regime for micro-entities. Budget accounting is on a cash basis, while financial and management accounting are on an accrual basis.

## METHODOLOGY

For this study, a qualitative investigation was chosen, using observation as data collection techniques. The observational data collection method is a method in which the researcher observes participants in their natural environment or in "artificial" contexts created for that purpose. Qualitative observation is a more exploratory approach that is open when the investigator takes field notes, hence an unstructured observation. In this case, the researcher can assume different roles, depending on the objectives he intends to achieve, participating in this context.

Thus, the methodology followed to assess the accountability of public universities about the dissemination of management documents was based on the institutions' web pages and the information placed there, with a view to assessing their transparency.

In Portugal, in terms of university institutions, we find 13 public universities and one distance learning university. The SNC-AP, through NCP 1 - Structure and Content of Financial Statements, defines as a complete set of individual or consolidated financial statements: (a) A balance sheet; (b) An income statement in nature; (c) A statement of changes in equity; (d) A statement of cash flows; and (e) Notes to the financial statements (notes comprising a summary of significant accounting policies and other explanatory notes).

Certain disclosures are required in the financial statements, and the term "disclosure" is used in a broad sense, encompassing both items presented in the balance sheet, the income statement, the statement of changes in equity and the statement of cash flows, and in the annex (point 6 of NCP 1). On the other hand, it is mentioned that any opinions or disclosures made must be transparent (point 6 of Decree-Law No. 192/2015).

The universities mentioned here report to the Court of Auditors (TC), the Ministry of Finance and the National Institute of Statistics, and information may be required by other entities such as the General Inspectorate of Finance.

Following the adoption of the SNC-AP, the TC published Instruction no. 1/2019-PG those required by the SNC-AP, which universities (as well as other entities to which they apply) must satisfy. Here, too, several disclosures are required.

To answer the question posed in this article about university governance models and accountability, to assess the transparency with which financial information is currently disclosed in Portugal by public Higher Education Institutions (HEIs), a collection was carried out of data from various sources, including annual reports and websites of all public universities for the present study. Data on the status of the HEIs in question were collected from their websites and from the annual reports of all 14 universities.

Section 14 of Public Accounting Standard (NCP) 1 defines what a complete set of financial statements (individual and consolidated) is. Instruction nº 1/2019-PG of the Court of Auditors, of February 13, is a single instruction, intended for all entities that report to the Court and that apply one of the following accounting systems:

• Accounting Standardization System for Public Administrations (SNC-AP).

• Accounting Standardization System (SNC).

• Accounting and Financial Reporting Standard for Non-Profit Sector Entities (SNC-ESNL).

• International Accounting Standards (IAS/IFRS).

To ensure the principle of transparency in financial, budgetary and asset management, and without prejudice to what is legally established, the Court of Auditors encourages entities subject to accountability to disclose the respective accounting documents on their website, as well as other relevant documents for greater clarity and transparency of its activity.

As universities are subject to the SNC-AP, they must present their accounts in accordance with the principles indicated above.

Since this is a wide range of documentation to be presented to superior Organs and supervisory bodies, the items identified below for the year 2018 were selected for analysis, as they are understood to be those that, in general, meet the information needs of the users about the assessment of accountability and transparency in the management of the entity. Therefore, the following documents were selected: Activity Report, Individual Accounts Report, Consolidated Report and Accounts, Financial Statements, Budget Statements, Single Auditor's Report and Opinion, Single Auditor's Report and Opinion (Consolidated Accounts), Legal Certification of Accounts, Legal Certification of Accounts (Consolidated Accounts), General Council Resolution, Plan for the Prevention of Corruption Risks and Related Infractions and Adoption of the SNC-AP.

The data obtained are shown in Table 1 below.

| Accountability | ISCTE - Instituto Universitário de Lisboa (FUNDAÇÃO) | Universidade Aberta | Universidade dos Açores | Universidade do Algarve | Universidade de Aveiro (FUNDAÇÃO) | Universidade da Beira Interior | Universidade de Coimbra | Universidade de Évora | Universidade de Lisboa | Universidade da Madeira | Universidade do Minho (FUNDAÇÃO) | Universidade Nova de Lisboa (FUNDAÇÃO) | Universidade do Porto (FUNDAÇÃO) | Universidade de Trás-os-Montes | Obs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year 2018** | | | | | | | | | | | | | | | |
| Activity Report | X | X | X | X | X | X | X | X | X | n/a | n/a | X | X | X | |
| Individual Accounts Report | X | X | X | X | X | X | X | n/a | n/a | n/a | n/a | X | X | n/a | (a) |
| Consolidated Report and Accounts | X | X | X | X | n/a | X | X | n/a | X | n/a | n/a | X | X | n/a | |
| Financial Statements | X | X | X | X | X | X | X | n/a | X | n/a | n/a | X | X | n/a | |
| Budget Statements | X | X | X | X | X | X | X | n/a | X | n/a | n/a | X | X | n/a | |
| Single Auditor's Report and Opinion | n/a | X | X | n/a | X | X | n/a | n/a | n/a | n/a | n/a | X | X | n/a | |
| Single Auditor's Report and Opinion (Consolidated Accounts) | n/a | X | X | n/a | n/a | X | n/a | n/a | n/a | n/a | n/a | X | X | n/a | |
| Legal Certification of Accounts | n/a | X | X | n/a | X | X | n/a | n/a | n/a | n/a | n/a | X | X | n/a | |
| Legal Certification of Accounts (Consolidated Accounts) | n/a | X | X | n/a | n/a | X | n/a | n/a | n/a | n/a | n/a | X | X | n/a | |
| General Council Resolution | n/a | X | X | n/a | X | X | n/a | n/a | n/a | n/a | X | n/a | n/a | n/a | |
| Plan for the Prevention of Corruption Risks and Related Infractions | X | X | X | X | X | X | X | X | X | n/a | X | X | X | X | b) |
| Adoption of the SNC-AP | X | Não | X | X | X | X | X | n/a | X | n/a | n/a | Não | n/a | n/a | |

(a)- Fundação Universidade de Aveiro presents two accounts for 2018: one on May 7, 2018 and another on December 31, 2018.

b) At the University of Lisbon there are corruption plans by Organic Unit

n/a - Information not available on the University website for the year 2018

Table 1 - The university accounts
Source: Prepared by the author

## DISCUSSION OF RESULTS

Regarding the legal status, it was observed that of the 14 universities analyzed, 9 are legal entities governed by public law, while 5 universities are public foundations under private law.

Regarding the documents that make up the financial report, it appears that the documents disclosed by each of the institutions (Management report, activity report, etc.) are quite different, with no uniformity in the information disclosed. The location of the HEI web page where the information is placed is different from university to university, and in none of them is the information easy to locate. It can also be seen that the information provided is more complete in some than in others.

ISCTE - Instituto Universitário de Lisboa, made the disclosure of the elements subject to study, except for the Report and Opinion of the Single Auditor, Report and Opinion of the Single Auditor (Consolidated Accounts), Legal Certification of Accounts, Legal Certification of Accounts (Accounts Consolidated) and the General Council Resolution. The University of the Azores and the University of Beira Interior released all documents selected for analysis. Universidade Aberta and Universidade Nova did not adopt the SNC-AP in 2018, thus not complying with the legally required accounting information system. The University of Algarve did not disclose the Report and Opinion of the Single Auditor, Report and Opinion of the Single Auditor (Consolidated Accounts), Legal Certification of Accounts, Legal Certification of Accounts (Consolidated Accounts), Deliberation of the General Council. The University of Aveiro presents two accounts for the year 2018: one on May 7, 2018, and the other on December 31, 2018, however it did not provide the Report and Consolidated Accounts, Report and Opinion of the Single Auditor (Consolidated Accounts) and the Legal Certification of Accounts (Consolidated Accounts). The University of Coimbra did not disclose the Report and Opinion of the Single Auditor, Report and Opinion of the Single Auditor (Consolidated Accounts), Legal Certification of Accounts, Legal Certification of Accounts (Consolidated Accounts) and the General Council's Deliberation. The University of Évora in relation to 2018 did not disclose most of the documents under consideration in this study, having only inserted the Activities Report (which does not include the items under consideration in this study) and the Risk Prevention Plan on the website. of Corruption and Related Offenses.

As for the University of Lisbon, it was found that it did not disclose the Individual Accounts Report, the Single Auditor's Report and Opinion, the Single Auditor's Report and Opinion (Consolidated Accounts), Legal Certification of Accounts, Legal Certification of Accounts (Consolidated Accounts) and Deliberation of the General Council. The University of Madeira did not disclose any of the items provided for in this study, relating to the year 2018. The University of Minho, for the year 2018, only released the General Council Deliberation in which the accounts and the Risk Prevention Plan were approved. Corruption and Related Offenses. Universidade Nova de Lisboa released all the items under study, except for the General Council Decision. Likewise, the University of Porto released all

the elements contained in the analysis, only missing the General Council Resolution and information on the adoption of the SNC-AP. On the other hand, the University of Trás-os-Montes and Alto Douro, did not disclose the elements referring to the year 2018 under study, having only disclosed the activities report (which does not contain the information recommended here) and the Plan of Prevention of Risks of Corruption and Related Infractions.

## CONCLUSIONS AND LIMITATIONS OF THE STUDY

In terms of governance, universities around the world are moving towards "commercial" governance structures (Lokuwaduge and Armstrong, 2015). The current funding system, which covers most of the costs of universities, requires an appropriate public accountability framework to ensure that governments and the community can have confidence in higher education and in the efficient and effective use of public money, hence the good governance is important.

Taking into account the elements of the 2018 financial report selected for analysis, we can conclude that there are universities that have a higher level of transparency and accountability than others. In the present study, it can be said that the Universidade Aberta, the Universidade dos Açores, the Universidade da Beira Interior, the Universidade Nova de Lisboa and the Universidade do Porto released more information about the management and accounts for the year 2018 than the remaining universities. Even so, ISCTE - Instituto Universitário de Lisboa, the University of Algarve, the University of Aveiro, the University of Coimbra, and the University of Lisbon, proceeded to disclose relevant information to users, such as the budget and financial statements, among others. However, the University of Évora, the University of Madeira, the University of Minho and the University of Trás-os-Montes and Alto Douro did not publish relevant documents for the assessment of accountability.

As for the fact that there are universities with the status of foundation, there were no significant differences in relation to the other universities, as regards the presentation and disclosure of the financial report and other decision-making and accountability items.

This study has, however, some limitations. Much of the information obtained was only obtained after several searches and with the selection of different keywords. In this sense, we understand to refer as a limitation the fact that there may potentially be information on the websites of the HEIs in question that was not obtained because it is difficult to access.

## GENERAL CONCLUSIONS

In recent years, there have been considerable developments in the areas of corporate law and corporate governance.

The governance of universities and the role of their governing bodies are unique and regulators should exercise caution when drawing parallels with the business sector. The governing bodies of universities are different from the Board of Directors of any other private sector organization.

Changes in university management have highlighted the importance of financial resources, the need for operational efficiency and strong internal governance, as well as requiring increased responsibility for accountability, decision-making and transparency.

Concerns about sustainability, efficiency, effectiveness and competitiveness, lead to greater disclosure, so the disclosure of annual reports constitutes a mechanism of external accountability and transparency. University governance structures play an important role in increasing accountability.

As universities become more entrepreneurial, future studies should explore the implications of the private governance model for the "business" activities of universities, which they develop beyond traditional teaching and research performance.

The practical contribution of the study aims to present the current level of transparency practices in the dissemination of annual management reports of public universities, encourage the introduction of improvements in the provision of public information on management reports and encourage full compliance with disclosure practices mandatory, a condition for proper accountability of managers.

## REFERENCES

AMARAL A., e TEIXEIRA, P., The rise and fall of the private sector in Portuguese higher education. Higher Education Policy, 13(3), 245–266, 2000.

AUSTIN, Ian e JONES, Glen A., Governance of Higher Education Global Perspectives, Theories, and Practices. Routledge, New York, 2016.

BALDRIDGE, J. V., Organizational characteristics of colleges and universities. In: Baldridge, J. V.; T. Deal, Dynamics of organizational change in education. Berkeley: McCutchan Publishing Corporation, Bevir, Mark e David O" Brien. 2001. "New Labor and the Public Sector in Britain" Public Administration Review Vol. 61, pp. 535 – 547, 2001.

BALDRIDGE, J.V., 'Organizational Characteristics of Colleges and Universities', in Baldridge, J.V. and Deal, T. (eds.), The Dynamics of Organizational Change in Education, Berkeley CA: McCutchan Publishing, 1980, p. 38-59.

BARNETT, R., e PETERS, M. A., The idea of the university: contemporary perspectives. New York, NY: Peter Lang, 2018.

BOVENS, M., Analysing and Assessing Accountability: A Conceptual Framework, European Law Journal, Volume13, Issue4, Pages 447-468, https://doi.org/10.1111/j.1468-0386.2007.00378, 2007

CARAÇA, J., O Futuro das Universidades: Aprender ou Ensinar? Boletim Universidade do Porto, Ano IX, n. 34, 1999.

CHOO, C. W. A organização do conhecimento: como as organizações usam a informação para criar significado, construir conhecimento e tomar decisões. São Paulo: SENAC, 2003. 425p.

COHEN, M. D.; MARCH, J. G.; OLSEN. A garbage can model of organizational choice. Administrative Science Quarterly, Ithaca (NY), v.17, n. 1, p. 1-25, 1972.

COHEN, M. D.; MARCH, J. G., Leadership and Ambiguity. The American College President. New York: McGraw-Hill, 1974.

COOPER, S., OWEN, D., Corporate social reporting and stakeholder accountability: The missing link. Accounting, Organizations and Society, 32, 649-667, 2007.

COULSON, Jonathan, ROBERTS, Paul e TAYLOR, Isabelle. University Trends: Contemporary Campus Design. 2nd Edition, New York: Routledge, 2018.

CURAJ, A., DECA, L. e PRICOPIE, R. (Editors). European Higher Education Area: The Impact of Past and Future Policies, Bucharest, Romania: Springer Open, Library of Congress

DECRETO-LEI 192/2015, de 11 de setembro – aprova o Sistema de Normalização Contabilística para as Administrações Públicas, 2015, http://www.cnc.min-financas.pt/sncap2017.html

DILL, D., Higher Education Markets and Public Policy. Higher Education Policy, 10(3), 167–185, 1997.

DILL, D., Public Policy Design and University Reform: Insights into Academic Change. In C. Musselin e P. Teixeira (Eds.), Reforming Higher Education. Higher Education Dynamics, vol 41 (p. 21–38). Dordrecht: Springer Science Netherlands, 2014.

EDWARDS, M. e HULME, D.  (1996). Introduction. NGO Performance and Accountability. In M. Edwards e D. Hulme (Eds.), Beyond the Magic Bullet. Ngo Performance and Accountability in the Post-Cold War World (p. 1-20).  West Hartford: Kumarian Press.

EURYDICE REPORT, European Commission, 2020, disponível em https://www.cnedu.pt/content/noticias/internacional/equity_2020_0.pdf

FARAZMAND, A., Governance in the Age of Globalization: Challenges and Opportunities for South and Southeast Asia, Public Organization Review. Vol. 13(4), pp. 349-363, 2013.

GODDARD, A., Accounting and NPM in UK local government - contributions towards governance and accountability, Financial, Accountability and Management, Vol. 21 No. 2, pp. 191-218, 2005.

HARDY, C.; FACHIN, R. Gestão estratégica na universidade brasileira: teoria e casos. Porto Alegre: UFRGS, 1996.

HÉNARD, F. e MITTERLE, A., Governance and quality guidelines in Higher Education: a review of governance arrangements and quality assurance guidelines. OECD, 2010.

KINGDON, John W., Agendas, alternatives and public policies, Boston: Little, Brown & Co., 1984

LOKUWADUGE, C. S. e ARMSTRONG, H. A., The impact of governance on the performance of the higher education sector in Australia.  Educational Management Administration & Leadership, Vol. 43(5) 811–827, 2015.

LOKUWADUGE, C. S. e ARMSTRONG, H. A., An evaluation of governance mechanisms as determinants of performance: A case study of Australian universities, Research Article https://doi.org/10.1177/1035719X150150020, 2015a.

MAGALHAES, A., VEIGA, A., RIBEIRO, F.M., SOUSA, S., SANTIAGO, R., Creating a common grammar for European higher education governance. Higher Education, Nº 65, pp. 95-112, 2013.

MAGRO, D., New Public Management, Managerialismo e Ensino Superior: Uma Análise das Transformações na UDESC. Tese de Doutoramento em Ciências Empresariais, FEP, 2011.

MAINARDES, E. W., ALVES, H. e RAPOSO, M., The Process of Change in University Management: From the Ivory Tower to Entrepreneurialism. Transylvanian Review of Administrative Sciences, Vol. 124 No. 33 E/2011, pp. 124-149, 2011.

MCNAY, Ian, Universities going international: choices, cautions and conditions, in P. Blok (ed.), Policy and Policy Implementation in Internationalisation of Higher Education, Amsterdam: EAIE, 1995.

MINTZBERG, H. Criando organizações eficazes: estruturas em cinco configurações. Tradução: Ailton Bomfim Brandão, 2ª ed., São Paulo: Atlas, 2003.

MUSSELIN C.: Are Universities specific organisations? in Krücken G., Kosmützky A. et Torka M. (eds.): Towards a Multiversity? Universities between Global Trends and national Traditions, Bielefeld, Transcript Verlag, p. 63-84, 2006.

NEAVE, G., e VAN VUGHT, F., Prometheus Bound: The Changing Relationship Between Government and Higher Education in Western Europe Relationships. Oxford: Pergamon Press, 1991.

OECD, Education at a Glance: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/69096873-en, 2020.

OSBORNE, S., The New Public Governance: Emerging Perspectives on the Theory and Practice of Public Governance. London: Taylor & Francis, 2010.

PADGETT, J. F. Bounded rationality in budgetary research. The American Political Science Review, V. 74, N. 2. 1980.

PEDROSA, J., SANTOS, H., MANO, M., e GASPAR, T., Novo Modelo de Governança e Gestão das Instituições de Ensino Superior em Portugal: Análise dos Usos do Modelo em Instituições Públicas. Aveiro, 2012.

PEDROSA, J., SANTOS, H. C., MANO, M. E GASPAR, T., Governança da Educação Superior – contextos e processos de mudança em Portugal, Revista Forges, - Fórum da Gestão do Ensino Superior nos Países e Regiões de Língua Portuguesa, v. 1, n. 1, Anual - 2014, p. 87-107.

PFEFFER, J., e SALANCIK, G. R. Organizational decision-making as a political process: The case of a university budget. Administrative Science Quarterly, 1974, 19, 135-151.

Pfeffer, J., Salancik, G. R., e Leblebici, H., The effect of uncertainty on the use of social influence in organizational decision making. Administrative Science Quarterly, 21(2), 227–245. https://doi.org/10.2307/2392044, 1976.

PFEFFER, J. e SALANCIK, G. R., The External Control of Organizations: A Resource Dependence Perspective, Harper e Row, Organizational Behavior (1978).

PFEFFER, J.; SALANCIK, G. R., The External Control of Organizations: a resource dependence perspective. Stanford, CA: Stanford University Press, 1978, reprinted 2003. Disponível em: http://books.google.com.br/books?id=iZv79yE-_AC&printsec=frontcover.

PINHO, J. e SACRAMENTO, R., Accountability: já podemos traduzi-la para o português? RAP - Rio de Janeiro 43(6):1343-1368, Nov./Dez. 2009 ISSN0034-7612

POLLITT, C., Managerialism and the Public Services: the Anglo-American Experience. Oxford: Basic Blackwell, 1990.

POLLITT, C., Managerialism Revisited. In G. Peters e D. Savoie (Eds.), Taking Stock: Assessing Public Sector Reforms (pp. 45–77). Canada: Canadian Centre for Management Development, 1998.

POLLITT, C., e BOUCKAERT, G., Public Management Reform: a Comparative Analysis (3th ed.). Oxford: Oxford University Press, 2004.

POLLITT, C., e BOUCKAERT, G., Public Management Reform: a Comparative Analysis - New Public Management, Governance, and the Neo-Weberian State (3th ed.). Croydon: Oxford University Press, 2011.

ROBERTS, J.; SCAPENS, R., Accounting systems and systems of accountability - understanding accounting practices in their organisational contexts, Accounting, Organizations and Society, Volume 10, Issue 4, 1985, Pages 443-456, https://doi.org/10.1016/0361-3682(85)90005-4

ROSSETTO, C., e ROSSETTO, A., A Combinação das Perspectivas Institucional e da Dependência de Recursos no Estudo da Adaptação Estratégica Organizacional. Revista Teoria e Evidência Econômica, 7(12). https://doi.org/10.5335/rtee.v7i12.4801, 1999.

ROWLANDS, J., Academic Governance in Contemporary Universities: Perspectives from Anglophone Nations. DOI: 10.1007/978-981-10-2688-1 Edition: 1st Publisher: Springer ISBN: 978-981-10-2688-1, 2017.

RYMARZAK, Małgorzata e ALEXI Marmot. Higher Education Estate Data Accountability: The Contrasting Experience of UK and Poland. Higher Education Policy. doi:10.1057/s41307-018-0109-5, 2018.

SALANCIK, G. R., e PFEFFER, J. The bases and use of power in organizational decision-making: The case of a university. Administrative Science Quarterly, 1974, 19, 453-473.

SIMÕES, M. L., O surgimento das universidades no mundo e sua importância para o contexto da formação docente. Revista Temas em Educação, João Pessoa, v.22, n.2, p. 136-152, jul.-dez. 2013.

SINCLAIR, A. The Chameleon of Accountability: Forms and Discourses, Accounting Organizations and Society 20(2):219-237, DOI: 10.1016/0361-3682(93)E0003-Y, 1995.

SCOTT, W., Organizations: Rational, Natural and Open Systems, 3rd edition, Englewood Cliffs, New Jersey: Prentice Hall, 1992.

VAN VUGHT, F., Diversity and Differentiation in Higher Education. In F. van Vught (Ed.), Mapping the Higher Education Landscape. Higher Education Dynamics, vol 28. (pp. 1–16). Dordrecht: Springer Netherlands, 2009.

VAN VUGHT, F., e DE BOER, H., Governance Models and Policy Instruments. In J. Huisman, H. de Boer, D. Dill, e M. Souto-Otero (Eds.), The Palgrave International Handbook of Higher Education Policy and Governance (p. 38–56). London: Palgrave Macmillan UK, 2015.

WILKINS, Andrew, Modernising School Governance: Corporate Planning and Expert Handling in State Education. London and New York: Routledge, 2017.

YUNG-CHI HOU, Angela, CHRISTOPHER Hill, KAREN Hui Jung Chen, and SANDY Tsai. A Comparative Study of International Branch Campuses in Malaysia, Singapore, China, and South Korea: Regulation, Governance and Quality Assurance. Asia Pacific Education Review. doi:10.1007/s12564-018-9550-9, 2018.

# GREEN MRKETING AND SMES PERFORMANCE: A META-ANALYSIS

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## ABSTRACT

Drawing on the resource-based theory of the firm and contingency theory, we investigate the extent to which Green Marketing (GM) - green product, green price, green distribution, and green promotion - influences different SMEs' performance indicators, using contextual factors (e.g., sector, economic development, country global sustainable competitiveness & culture) as moderators. To this end, we developed an analysis of 133 studies with 47661 observations and 195 study effect sizes across 124 countries. Our results reveal that GM has a positive, *medium* effect on overall firm performance and that the most important antecedent is green promotion, with green distribution exerting the lowest impact. In addition, among the performance indicators, innovation performance is the most largely influenced by GM, while economic performance is the least. Moreover, our moderator analysis demonstrates that contextual factors (sector, economic development, country global sustainability competitive index, and culture) significantly moderate the GM — firm performance relationships. The implications of these findings from both theoretical and managerial viewpoints are systematically delineated.

Keywords: SMEs, green marketing, greenwashing, firm performance, meta-analysis.

## 1. RESEARCH BACKGROUND AND OBJECTIVES

In recent years, green economy has been gaining a growing currency in the national and international agendas and policy initiatives of governments and international organizations because of its potential to grow economies and improve the well-being of people while at the same time safeguarding the environment. Green economy policies and initiatives can create green jobs, enhance the well-being and livelihood of the world's poor, promote investment and innovation, and create business opportunities (Gelderman et al., 2021). To this end, most companies are also implementing green marketing strategies in their strategic orientations and corporate strategies. Green marketing (GM, hereafter) is defined as the "holistic management process responsible for identifying, anticipating and satisfying the needs of customers and society, in a profitable and sustainable way" (Leal-Filho, Finisterra-Do Paco & Raposo, 2009, p.2). Companies mainly use eco-friendly, ecological marketing messages via advertising to persuade ecologically conscious consumers to increase their

sales and profits, corporate image, and competitive advantage, thereby enhancing their wide enterprise performance (Mukonza & Swarts, 2020). The problem, however, is that not all GM claims are considered a true reflection of a firm's environmental conduct and can be deemed as 'greenwashing,' defined as "the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound. Greenwashing is considered an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly." Research shows that perceived greenwashing can adversely affect the profitability and reputation of firms (Szabo & Webster, 2020) since this 'perceived greenwashing' can weaken consumers' confidence in GM promotions, which, in turn, can affect their patronage and buying behaviours.

Besides the issue of greenwashing, the empirical findings on the relationship between GM and firm performance are inconclusive and contradictory, with some studies reporting positive relationships (e.g., Roh, Noh & Park, 2022; Martins, 2021), others no significant relationship (e.g., Khan et al., 2019; Mwaura, 2021) and some negative relationships (e.g., Amero, 2011; Gelderman et al., 2021). Furthermore, the empirical studies are fragmented across contexts, cultures, countries, and disciplines, making it difficult to understand in a comprehensive fashion how and to what extent GM influences diverse performance indicators of SMEs and the boundary-spanning conditions (moderators) that facilitate or impede the success of GM strategies by SMEs. Although there is little consensus among academics about the true nature of the impact of GM on firm performance, no meta-analysis has ever examined the GM—firm performance relationships in this research stream to clarify the anecdotal results.

To this end, we adopt meta-analysis, which is "a quantitative, formal, and epidemiological study design that is used to systematically combine and assess the results of previous scientific studies to derive conclusions about that body of research" (Haidich, 2010, p.12) to quantify and summarize the disparities and commonalities of the extant literature on the GM—firm performance relationships while exploring the contingencies that may account for between-study variance. Our intended contribution is twofold. First, we contribute to recent literature on sustainable marketing by examining the extent to which GM—green product, green price, green distribution, and green promotion impact various firm performance indicators of SMEs across the extant literature. Second, we test boundary spanning conditions, namely contextual moderators (i.e., sector, (*agriculture, manufacturing vs service*), economic development (*developing vs developed*), country global sustainable competitiveness (*high GSCI vs low GSCI*), culture (*high vs low individualism*).

## 2. META-ANALYTIC MODEL AND HYPOTHESES

The GM—enterprise performance focal relationship is driven by the RBV of the firm, which considers resources and capabilities that are rare, valuable, inimitable, and organizable as the basis of sustainable competitive advantage (Barney, 2001). Green capabilities involve "the ability of a company to exploit its existing resources and knowledge to renew and develop its green organizational capabilities to react to the dynamic market" (Teece et al., 1997, p.34). Thus, SMEs possessing green resources and capabilities are expected to enhance their firm performance. Figure 1 demonstrates the meta-analytic conceptual framework of the study graphically. The model shows that the four most frequently investigated GM strategies (i.e., green price, green distribution, and green promotion) synchronously influence firm performance—overall and disaggregate (competitive advantage, innovation performance, environmental performance, social performance, economic performance, profitability, corporate reputation, customer performance). Firm performance highlights organizational effectiveness in terms of its operational, economic, and financial performance (Saraf et al., 2007).

*Green product* includes recyclable, reusable, biodegradable, eco-friendly products and packaging that are known to have a low adverse environmental impact (OECD, 2011, p.19). Empirical results on the impact of green product on firm performance are mixed, with some showing positive effects on environmental performance and economic performance (Roh, Noh & Park, 2022; Mwaura, 2021) and others negative impact on customer performance (performance (Khan et al., 2019) and corporate reputation (Amero, 2011). *Green pricing* involves both the economic and environmental costs of production and marketing while providing value for customers (Tripathi & Pandey, 2018). The literature presents contradictory findings on green price and firm performance. For instance, while Mahmoud et al. (2017) and Al-Murad (2022) found a positive relationship, Amero (2011) found a negative relationship between corporate reputation, economic performance and customer performance. *Green distribution* deals with the selection of channels that ensures that there is minimal environmental damage, ensuring that there is environmental innovation in the value chain in the control and monitoring programmes of the enterprise with the intermediaries and channel partners. Braik (2021) found that green distribution positively influences social, environmental, and economic performance, but Setyawatia et al. (2020) found no significant impact on customer performance and economic performance (Eneizan et al., 2016). Lastly, *green promotion* involves an effective awareness tool by which a firm communicates, informs, and reminds stakeholders about its commitment and achievements toward environmental preservation efforts (Belz & Peattie, 2009) using green marketing messages. Like the other green marketing mix, empirical results on green promotion and firm performance are mixed. Studies (e.g., Braik 2021; Martins, 2022) observed that green promotion

positively influences social, competitive advantage, environmental, profitability, and economic performance, but others (e.g., Eneizan et al., 2019; Memon et al., 2019) found that it is negatively related to profitability and corporate reputation.

Despite the mixed results presented in the literature, we expect that GM will have a positive, *medium* effect on overall firm performance and that green product, green price, green distribution, and green promotion will have a positive, *medium* effect on firm performance, such that the impact of green product is stronger than green price, green promotion, and green distribution, in that order. Our assumption is based on the fact that it is mostly the products of the firms that consumers tangibly get in touch with to be able to attest whether the firm's products are eco-sustainable or not, hence wielding the greatest influencing factor; however, the price of green products is sometimes high as well as green distribution channels. Moreover, green promotion may not be necessarily accepted or believed by the consumer (remember, perceived greenwashing), so we expect its impact may not be as strong as green product. Moreover, drawing on the contingency theory, which indicates that different contexts or environments mostly have diverse needs, therefore demanding differentiated approaches to operations management (Romero-Silva et al., 2018), we explored sector, economic development, country global sustainable competitiveness (GSCI), and culture as context-dependency moderators.
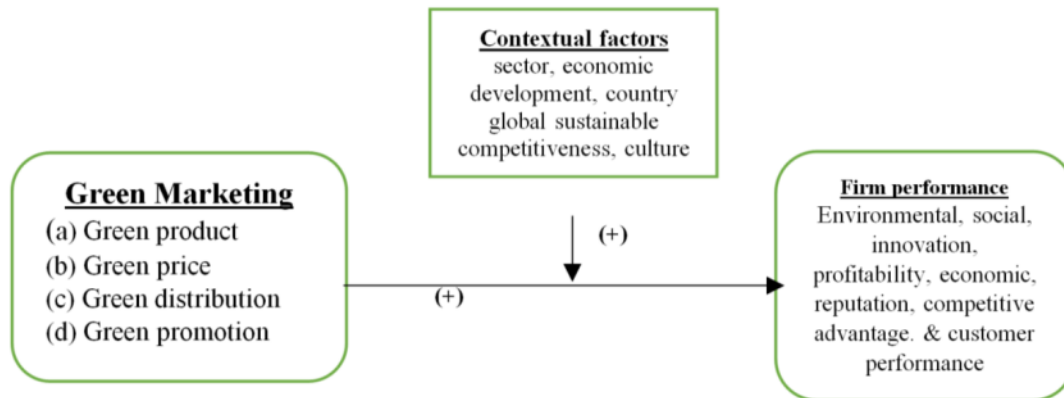


Fig.1: Meta-analytic framework

## 3. METHODOLOGY

Following the conventional methods of secondary data analysis, we conducted a bibliographic keyword search to select articles that examined the relationship between GM and firm performance from 1980 to 2022 (March) in well-known internationally recognized business and management databases: Web of Science, Scopus, EBSCO, Google Scholar, ABI Proquest, and Emerald Insight. We searched by entering the undermentioned keywords in the title, abstract, and keywords field in the

databases by using the Boolean operations such as "OR, AND, NOT: GM (e.g., "ecological marketing," sustainable marketing," "green marketing," "environmental marketing," "green product," "green price," "green distribution" "green distribution,"): enterprise performance: (e.g., "SMEs performance," innovation performance, "customer performance," "environmental performance," "firm performance," "competitive advantage," "financial performance," marketing performance," "non-financial performance). Articles were included in the analysis based on the following criteria: (1) English language, full-text online scholarly articles that examined at least one type of GM (e.g., green product, green price, green distribution, green promotion) in relation to enterprise performance of SMEs; (2) the study had to be quantitatively manipulated; that is, the study provides coefficient metric or enough statistical information to facilitate the computation of correlation coefficients; and (3) studies without correlation coefficients provided r-variants (F-test, T-test, regression, etc.) that can be converted to r-coefficients.

A total of 5186 articles were generated from the initial search, but we filtered these papers against different elements such as scholarly articles, year, and English language. We also removed the duplicate papers and non-quantitatively analyzed papers. After the inclusion and exclusion phases, 133 studies in 119 independent scholarly articles were identified, with 47661 observations and 195 effect sizes. The meta-analysis metric that has been employed is the Pearson correlation coefficient metric. The correlation coefficients were either picked directly from the study or computed through the r-variants (Hunter & Schmidt, 2004). Subsequently, we adjusted the effect sizes for reliability to correct for attenuation arising from random measurement error (Hunter & Schmidt, 2004). Using a random effects model, we tested publication bias, which indicates that positive results are easier to publish when compared to negative ones using the conventional method known as the funnel plot and Fail-safe N, but we found no publication bias issues. Finally, the significance of the moderator analysis was examined via subgroup analysis using QB. Our results are shown in the next section.

## 4. RESULTS

Our first analysis provides the findings of GM's overall or aggregate effect on overall firm performance and the relative effects of the dimensions of GM. First, our results show that the average strength of the aggregate effect sizes is significantly small-moderate (medium) (.19—0.51), based on the criteria suggested by Cohen (1988), where an effect size of .20 is interpreted as small; .50 equates to a medium effect, and effect size larger than 0.80 is are deemed as large effects.

In particular, we found that the overall impact of GM on the overall enterprise performance of SMEs is positively and significantly moderate ($r$= .33) since the confidence interval does not include zero. The Fail-safe N discloses that 5769 primary studies are required to render this finding non-

significant. Concerning the aggregate impact of the sub-dimensions of GM, our results demonstrate that green promotion has the largest impact on enterprise performance (*r=.28*), followed by green product (r=.*26*), green price (r=.23), and green distribution (r=.19), in that order (*QB = 15.49; p=.001, meaning the mean difference is significant*). Moreover, vis-à-vis the disaggregate firm performance indicators, our findings show that the impact of GM (all dimensions) on innovation performance is the largest (*r=.47*), followed by environmental performance (*r=.37*), corporate reputation (*r=.36*), competitive advantage (*r=.35*), customer performance/marketing performance (*r=.35*), social performance (*r=.31*), profitability (*r=.30*), and economic performance (*r=.27*), in that order (***QB = 54.63; p=.001***, hence the mean differences are significant).

## 5. STUDY MODERATORS

The moderator analysis of the contextual factors reveals that sector significantly influences GM performance, such that it is larger in the SMEs involved in agri-business (*r=.54*) than those in the service (*r=.44)* and manufacturing sector (*r=.25*). Moreover, the GSCI of a country (i.e., natural capital, resource efficiency & intensity, intellectual capital, governance efficiency, and social cohesion) also plays a significant moderating role, indicating that SMEs in countries with high GSCI perform better (*r=.43)* than those in low GSCI (*r=.26)*, a finding that highlights that integrated social, environmental, and economic dynamics of a country facilitate sustainable growth and ecological marketing innovations. Also, culture (individualism) has a significant moderating effect on GM performance, such that SMEs operating in low individualistic cultures perform better in GM (*r=.34)* than those in a high individualistic culture (*r=.23)*, which could be partly due to the fact that companies in collectivist cultures are more prone to the adoption of ecological marketing and that people in collectivist cultures tend to care about others and the well-being of the society, thereby assuming responsibility for other members of the society. Interestingly, our analysis reveals no significant difference in the performance of SMEs operating in countries with high human development index (HDI) and those with low HDI (*QB=1.47; p-value =489*). Vis-à-vis the methodological moderators, only the type of performance measure, such that non-financial indicators like innovation performance, social performance, productivity, and reputation yield larger effects sizes (*r=.45)* than financial performance indicators like ROE, ROA, and profitability (*r=.23)*. This finding also means that the impact of GM on non-financial performance is larger than on financial performance.

## 6. CONCLUSION

Empirical studies on the GM—firm performance relationships have been at the forefront of scientific research in the marketing literature in the past few decades. Our meta-analysis makes the

first attempt to integrate the findings across the extant literature to establish the extent to which GM influences firm performance. First, our results that GM—green product, green price, green distribution, and green promotion—have a positive and significant impact on overall and disaggregate firm performance—defy all odds to highlight the potency of GM on firm competitiveness and superior performance (Amero, 2011; Setyawatia et al. 2020). It is also interesting to note that GM positively relates to corporate reputation, customer performance, and profitability (Braik, 2021; Martins, 2022). These findings demonstrate that although GM campaigns may sometimes suffer from perceived greenwashing, their performance gains far exceed the cost associated with greenwashing, demonstrating that a firm's ethical and faithful environmental conduct can garner consumers' trust and patronage of its products and services, which in turn, can enhance performance over time.

Second, findings impliedly show, in addition to the expected mean effect ($r=.33$), that the relative strength of GM on enterprise performance varies (e.g., green promotion > green product > green price>green distribution)—a finding that has key implications for SMEs in terms of their strategic orientation and resource allocations. Lastly, SME managers will also need to take into consideration the moderating factors like sector, culture, and GSCI of their countries. For instance, those in the agri-business can strongly implement GM strategies more as well those in the low individualistic cultures because consumers in these cultures seek the general well-being of the environment, leading them to support companies with green economy orientations. SMEs can also invest more in green promotion in their marketing mix since it has the greatest impact on enterprise performance. For future research, our meta-analysis was based only on bi-variate analysis without examining causal effects. Future studies can employ meta-structural equation modelling to account for mediators. Also, we limited our analysis to a particular context, SMEs, which opens the avenue for future researchers to include large enterprises to allow for cross-context comparative analysis.

## REFERENCES

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. Journal of management, 27(6), 643-650.

Gelderman, C. J., Schijns, J., Lambrechts, W., & Vijgen, S. (2021). Green marketing as an environmental practice: The impact on green satisfaction and green loyalty in a business-to-business context. Business Strategy and the Environment, 30(4), 2061-2076.

Haidich, A. B. (2010). Meta-analysis in medical research. Hippokratia, 14(Suppl 1), 29.

Hunter, J. E., & Schmidt, F. L. (2004). Methods of meta-analysis: Correcting error and bias in research findings. Sage.

Khan, E. A., Royhan, P., Rahman, M. A., Rahman, M. M., & Mostafa, A. (2019). The impact of enviropreneurial orientation on small firms' business performance: The mediation of green marketing mix and eco-labeling strategies. Sustainability, 12(1), 221.

Leal-Filho, W., Finisterra Do Paco, A., & Raposo, M. L. B. (2009). Identifying the green consumer: A segmentation study. marketing, 3, 4.

Martins, A. (2021). Green marketing and perceived SME profitability: the meditating effect of green purchase behaviour. Management of Environmental Quality: An International Journal, 33(2), 281-299.

Mukonza, C., & Swarts, I. (2020). The influence of green marketing strategies on business performance and corporate image in the retail sector. Business strategy and the Environment, 29(3), 838-845.

Mwaura, E. N. (2021). Adoption of Ecological Marketing Mix on Consumer Purchase Decision: A Case of the Textile and Apparel Industry in Kenya (Doctoral dissertation, United States International University-Africa).

Roh, T., Noh, J., Oh, Y., & Park, K. S. (2022). Structural relationships of a firm's green strategies for environmental performance: The roles of green supply chain management and green marketing innovation. Journal of Cleaner Production, 356, 131877.

Romero-Silva, R., Santos, J., & Hurtado, M. (2018). A note on defining organizational systems for contingency theory in OM. Production Planning & Control, 29(16), 1343-1348.

Sawilowsky, S. S. (2009). New effect size rules of thumb. Journal of modern applied statistical methods, 8(2), 26.

Szabo, S., & Webster, J. (2021). Perceived greenwashing: the effects of green marketing on environmental and product perceptions. Journal of Business Ethics, 171(4), 719-739.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic management journal, 18(7), 509-533.

# MARKET ENTRY FORM CHOICES OF MULTI-SIDED PLATFORMS IN THE EVENT MANAGEMENT AND TICKETING INDUSTRY

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## ABSTRACT

This study investigates market entry choices of MSP business model firms in the event management and ticketing industry. In the contemporary digital era, with 4.95 billion internet users and e-commerce sales surpassing 5.7 trillion USD, multi-sided platforms (MSPs) termed as 'Born Digitals', have become critical in the digital transformation through exploiting digitalization, network effects, and scalability. Nonetheless, discrepancies in MSPs' market entry choices have been noted. Employing a qualitative multiple-case study approach, the research analyzes five MSP business model firms in the event management and ticketing industry, highlighting the importance of interactive communication and network externalities in their internationalization, which is often expedited by direct engagement, automation, and flexibility. The study uncovers five central themes in internationalization strategies which suggest that MSP business model firms in the event management and ticketing industry prefer to use high control market entry forms to be able to adapt their networking strategies and match-making algorithms to local consumer preferences. By cross analyzing these findings with existing literature, this study establishes that the observed market entry choices of the case study firms in this sample confirm existing research results. The research thus bridges the gap between theory and practice, suggesting further insights for understanding MSPs' market entry choices. Future research may explore market entry selection strategies employed by MSP firms of other sectors of the hospitality and tourism industry to better understand if the identified themes of this study can be replicated.

*Keywords: Internationalization, International New Ventures (INVs), Multi-sided markets, Born Digitals, Multi-sided platforms (MSPs), Network effects.*

## INTRODUCTION

In this new era of digitalization, marked by an impressive 4.95 billion internet users worldwide (Datareportal, 2022), a vast spectrum of business operations have migrated to digital platforms. Recent figures suggest that about 91% of smartphone owners make online purchases using their devices

(Forbes, 2022). This digital shift is even more striking in the realm of e-commerce sales, which exceeded 5.7 trillion U.S. dollars worldwide in 2022, with expectations of continuous growth in the years ahead (Statista, 2022).

One specific category of firms emblematic of this digital transformation are digital-based international new ventures (INVs), particularly multi-sided platforms (MSPs), often referred to as "Born Digitals", "digital New Ventures", or "digital International New Ventures" (Stallkamp et al., 2022; Monaghan et al., 2019; Ojala et al., 2018). These entities have harnessed the potential of digitalization, network effects, and the scalability of their business models to rapidly internationalize, developing competitive advantages across borders.

However, in practice, we have noticed entry choices have deviated from theory. Although MSPs are theoretically expected to enter new foreign markets virtually, many, like Uber and Airbnb, have adopted high-commitment foreign direct investment (FDI) or market entry forms like wholly-owned subsidiaries or acquisitions to better understand legal requirements, customer preferences and to gain access to local networks (Stallkamp and Schotter, 2021; Picqueras, 2020).

It's apparent that our understanding of how these MSPs expand internationally is limited, prompting scholars like Stallkamp et al. (2022), Picqueras (2020), and Stallkamp and Schotter (2021) to call for further research. The current study aims to address the identified gap in the literature, focusing on a pressing problem managers face: the lack of understanding of how multi-sided platform business models select their market entry forms (Stallkamp and Schotter, 2021; Picqueras, 2020).

Therefore, the purpose of this study is to explore how multi-sided platform business model firms of the event management and ticketing industry select their market entry forms, specifically aiming to answer the research question: "How do multi-sided platform business model firms of the event management and ticketing industry select their market entry forms?" It is anticipated that this research will contribute to bridging the gap between theoretical expectations and practical implementation in the internationalization process of MSPs.

The organization of this paper is as follows: The upcoming chapter will delve into a review of relevant literature and establish the conceptual framework. Following this, the third segment will detail the research methodology, encompassing elements like the selected research and sampling methods, research queries, methods of data gathering, and the approach to data analysis. The subsequent fourth chapter will reveal the results and findings. This will be succeeded by an interpretative discussion in the fifth section. The paper will ultimately wrap up with a recapitulation of significant findings, the influence of the study, and recommendations for future research.

## LITERATURE REVIEW

*Conceptual Framework for Market Entry Form Selection*

The conceptual framework proposed in this literature borrows from Svend Hollensen's book Global Marketing chapter 9. In this chapter Hollensen (2020) explains that there are four factors that influence the entry form decision in a specific country: 1. Internal factors 2. External factors 3. Desired mode characteristics 4. Transaction-specific behavior" (Hollensen, 2020). Given the special nature of MSP firms, the model proposed in this study involves the consideration of two main categories of factors, internal and external, that influence the entry mode decision-making process:

• Internal Factors:

  • Firm size reflects resource availability, and more resources can bolster international engagement. SMEs, despite aspiring for control in international operations, often use export forms due to resource constraints (Neubert, 2023). These forms, requiring fewer resources, are realistic for SMEs (Lin and Ho, 2019). As the firm expands, hierarchical market entry forms becomes increasingly prevalent.

  • International Experience: Dow and Larimo (2009) find a positive link between experience in culturally similar countries and opting for a high-control market entry form, such as creating a wholly owned subsidiary. They suggest a sequential approach to entering geographic regions to optimize the utilization of clustered experience (Dow and Larimo, 2009).

• External Factors:

  • Sociocultural Distance: Firms tend to shy away from foreign direct investments when there's a significant sociocultural distance between the home and host country. Instead, they might favor joint ventures or lower-risk entry forms like hiring distributors or franchisees to cover cultural distances (Guidice et al., 2017; Neubert, 2018).

  • Country Risk/Demand Uncertainty: High country risk tends to make firms limit their resource commitments, favoring entry modes that involve low resource commitments such as export modes (Obadia and Bello, 2019).

  • Market Size and Growth: The greater the size and rate of growth in a market, the higher the probability that a company will allocate resources towards its expansion by establishing a wholly owned sales subsidiary or a joint venture with a majority ownership (Obadia and Bello, 2019).

  • Direct and Indirect Trade Barriers: Trade barriers often influence the market entry form and operation decisions. Tariffs, quotas, product or trade regulations, and preferences for local suppliers can impact a firm's decision, potentially favoring market entry forms involving

local companies or establishment of local production facilities such as contract manufacturing (Hollensen, 2020).

- Intensity of Competition: High competition in a host market can make firms favor market entry forms that involve low resource commitments, as such markets may not justify heavy resource commitments (Hollensen, 2020).
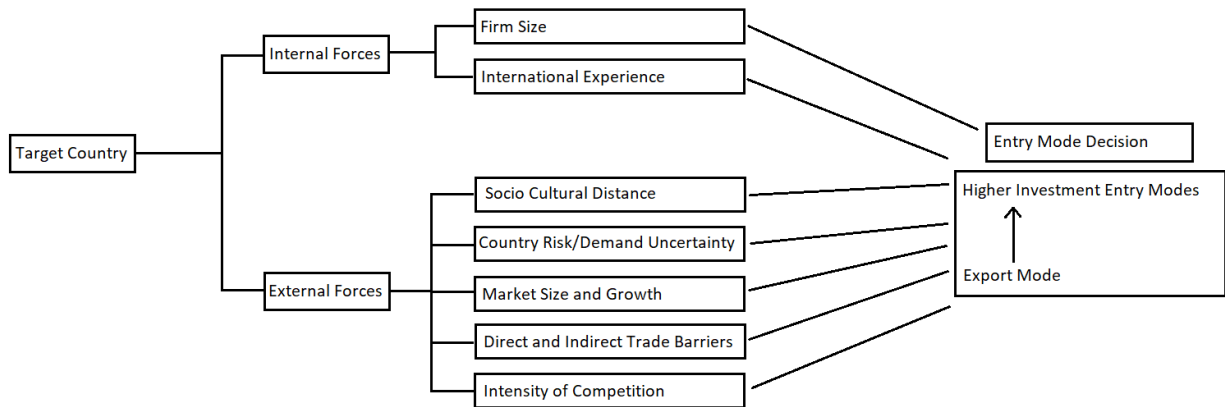


Figure 1. Conceptual Framework Source: Author inspired by Hollensen, 2020

*Multisided platforms (MSP) and Network Effects*

According to Zeng (2019) and Stallkamp (2021), the emergence of multisided platforms has introduced a fresh organizational paradigm that generates value for a broader array of stakeholders, enabling remarkable scalability and swift international market penetration. Instead of exclusively relying on internal resources, MSPs primarily rely on the exchange of information and active participation among their users to generate value (Brouthers et al., 2016; Zeng, 2019).

A key feature of MSPs is that their value is significantly shaped by the number of participants due to the network externality effect (Cennamo and Santalo, 2013; Edelmann, 2015; Zhu and Iansiti, 2012; McIntyre and Srinivasan, 2017; Zeng, 2019). Network effects, both direct and indirect, play a crucial role. Direct (same-side) network effects take place when the benefit of a member that participates on a network relies on the amount of other network participants they can interact with (McIntyre & Srinivasan, 2017: 143; Katz and Shapiro, 1985; Zeng, 2019). Conversely, indirect (cross-side) network effects occur as a platform attracts more users of one kind, leading to increased value for another complementary product or service (Boudreau and Jeppesen, 2015; Cennamo and Santalo, 2013; Zhu and Iansiti, 2012; Zeng, 2019). These indirect network effects operate similarly to demand-side economies of scale, amplifying the potential benefits that economic actors can extract from the platform (Zeng, 2019).

*Market Entry Choices - Traditional versus Digital Firms*

The rise of digitalization necessitates a revisit of traditional international business theory (Autio and Zander, 2016). In their research about born digitals, Monaghan et al. (2020) identify four areas that help digital firms internationalize faster than traditional firms.

- Direct Engagement with Stakeholders

  Technological affordances permit direct engagement with global end-users (Chandra and Coviello, 2010). This direct engagement accelerates the recognition of opportunities, prompting rapid market penetration (Monaghan et al., 2020).

- Automation and Digitalization

  Automation enables born digital firms to take advantage of productivity and efficiency gains, significantly lowering spatial transaction costs (Hennart, 2014; Legner et al., 2017, Neubert, 2018). This changes trust building, opportunity recognition, and relationship development (Autio and Zander, 2016; Monaghan et al., 2020).

- Network Effects

  Digital platform firms, a prominent type of born digital, accrue advantages from network effects. They rapidly create and coordinate large user networks, which effectively internationalizes the firm (Monaghan et al., 2020).

- Flexibility

  Born digitals are flexible in their international activity systems (Autio and Zander, 2016), exhibiting agility and responsiveness in internationalization decisions (Monaghan et al., 2020). However, proprietary operating systems and differing investor expectations may impede this flexibility (Monaghan et al., 2020).

- Scalability

  Born digital firms leverage scalability and build economies of scale in core business processes allowing them to scale their user base and transactions rapidly and internationally (Monaghan et al., 2020; Neubert, 2022).

*Market Entry Barriers*

Born digital firms, although they possess distinct advantages, are not immune to international barriers. Disparities among nations in cultural, administrative, geographic, and economic (CAGE) aspects serve as obstacles to user adoption, hindering the process of virtual internationalization (Shaheer and Li, 2017; Piqueras, 2020). Furthermore, such firms face significant challenges, including technological flaws, lack of complementary asset providers, and domestic regulations (Parente et al., 2018; Piqueras, 2020). Empirical research reveals that critical factors influencing the pace of internationalization include the balance between an online and offline presence, dubbed the "online-offline interval" (Wentrup, 2016; Piqueras, 2020). Therefore, the relatively low entry barriers for online

entry must be evaluated in relation to offline context barriers, such as legal compliance, cultural differences, and market-specific requirements (Piqueras, 2020).

*Foreign Market Entry Forms*

MSP firms employ diverse strategies to internationalize, which are largely determined by their industry's characteristics and the presence or absence of network externalities. In markets driven by within-country network externalities such as food delivery or ride-hailing, the network advantage of the home country doesn't readily translate to international markets (Piqueras, S. 2020). However, when cross-country network externalities are available, as in the case of mobile operating systems or online travel booking platforms, the existing user base becomes a firm-specific advantage (FSA) that can facilitate foreign market entry and aid global scaling (Piqueras, S. 2020).

FSAs are company strengths relative to their rivals, enabling them to compete despite liability of foreignness (Piqueras, S. 2020). For MSP business model firms, user networks are a critical FSA, as platforms with larger user bases can produce more added value than competitors with less extensive networks (Shankar & Bayus, 2003; Sun & Tse, 2009; Piqueras, S. 2020).

MSP business model firms may utilize their FSAs worldwide through various market entry forms, including exporting to foreign markets, entering licensing agreements, or internalizing their international activities through the establishment of overseas branches (Buckley & Casson, 1976; Rugman, 1981; Grogaard & Verbeke, 2012; Piqueras, 2020). Notably, MSP business model firms coordinate external resources without internalizing them but still internalize essential activities vital for generating value, such as managing the platform interface, R&D, data analysis, customer support services, and stakeholders relations (Autio and Zander 2016; Boudreau, 2017; Teece, 2017; Piqueras, 2020).

To cater to foreign markets, firms might have to establish domestic-language user interfaces, establish sales and customer support capabilities, tailor their product and marketing strategies to meet local demands, set up an appropriate payment system, and secure regulatory approvals, and set up a physical infrastructure in the target market (Stallkamp, 2021; Piqueras, 2020). This can manifest as conventional Foreign Direct Investment (FDI) such as wholly-owned subsidiaries or by catering to international markets through online channels, occasionally bolstered by short-term assignments of executives or a modest physical footprint in the desired market (Autio and Zander, 2016; Coviello et al., 2017; Stallkamp, 2021; Piqueras, 2020).

However, a distinct dynamic exists for companies in industries characterized by cross-country and within-country network externalities. As such, Stallkamp (2021) provides the following propositions:

1.  Platform firms in sectors characterized by cross-country network externalities are more inclined to venture into foreign markets on their own, in contrast to platform companies in sectors with primarily within-country network externalities,

2.  Companies in industries with within-country network externalities have a higher tendency to enter international markets via acquisitions or alliances, compared to firms in industries with cross-country network characteristics,

3.  Platform companies in sectors that exhibit cross-country network effects tend to focus on expanding to countries with cultural similarities to their home country, and

4.  Businesses in industries marked by cross-country network externalities are more inclined to favor expanding to host countries that have robust economic and social ties with their home country, compared to platform firms in industries that lack such cross-country network effects (Stallkamp, 2021).

## METHODOLOGY

The research methodology employed in this study aligns with its purpose, which is to explore how multi-sided platform business model firms of the event management and ticketing industry select their market entry forms. A qualitative, multiple-case study research method will be utilized to facilitate a comprehensive analysis of the phenomenon of interest, drawing on diverse sources of evidence including qualitative and quantitative data (Halkias et al., 2023; Yin, 2017).

To ensure the selection of relevant cases, purposeful sampling will be employed (Palinkas et al., 2015). This approach allows for the identification and inclusion of cases that offer significant insights into the researched phenomenon. Due to the inherent nature of case-study research, non-random sampling is appropriate, as it recognizes that no single sample can fully represent a larger population (Halkias & Neubert, 2020). The methodology involved the selection of five businesses employing multi-sided platform (MSP) business models. The selection criteria included the following: 1) The companies had to possess internationalization experience to enable the study of various market entry forms. There was no specification for the number of countries entered, as the focus was on understanding the strategies employed by companies for international market entry. 2) While the least operational time in the sample is 11 years, a specific requirement for the number of years in operation was not set. This was due to the rapid expansion phenomena of MSPs and the intent to explore all possible market entry choices. The sample chosen are detailed in Table 1 below.

| Company Name | Eventbrite | Ticketmaster | Stubhub | Ticketswap | TodayTix |
|---|---|---|---|---|---|
| Year Established | 2008 | 1976 | 2000 | 2012 | 2013 |
| Home Market Country | US | US | US | Netherlands | US |
| Home Continent | North America | North America | North America | Europe | North America |
| Internationalization | yes | yes | yes | yes | yes |
| Number of countries it serves | 180 | 42 | 90 | 36 | 4 |

Table 1. Case Study Sample

The research question, derived from the study's purpose and identified problem, and research methodology.

*Research Question*

How do multi-sided platform business model firms of the event management and ticketing industry select their market entry forms?

*Subsequent Questions*

Which market entry form was used to enter similar cultures/languages markets?

*Data collection and analysis*

Data were gathered in May and June of 2023 from a multitude of resources, including but not limited to, news articles, business strategies, corporate websites, and online databases and triangulated as a first step of data analysis. Employing a replication logic method, as outlined by Yin (2017) and Halkias et al. (2022), facilitated the identification of pertinent themes across cases. Replication logic entails the analysis of each case on an individual basis, followed by the replication of results from each case across others to identify themes or phenomena under study (Halkias and Neubert, 2020; Yin, 2017). The amassed data is subjected to meticulous analysis through replication logic as a method of data analysis (Halkias et al., 2022; Yazan, 2015). The following chapter will feature the presentation of the interpreted data.

## FINDINGS

Through data analysis, five themes have been identified that address the central research question about how do MSP business model firms of the event management and ticketing industry select their market entry forms?.

*Theme 1: All MSP firms of the event management and ticketing industry in this sample use hierarchical market entry forms.*

Data shows that all five companies have engaged in establishing local wholly-owned subsidiaries to launch their services directly in multiple countries. Eventbrite launched its service directly and made direct investments by establishing local offices in various countries such as the United Kingdom, Ireland, Germany, Australia, and Singapore (Lawler, 2012; Hall, 2014; Grace, 2019). Ticketmaster expanded into European countries such as Norway, Denmark, New Zealand, and

Germany in the 2000s (Marketing Week, 1998; Ticketmaster. n.d.). It continued its expansion by opening a new office in Vienna, Austria, and another in Russia (Music Business Worldwide, 2014; CelebrityAccess MediaWire, 2012). In addition, Stubhub expanded to Canada, UK and Europe (Loeb, 2016). TicketSwap utilized the direct investment approach aggressively, opening offices in several European countries such as Ireland, the UK, France and its first Latin American launch in Brazil (Chapple, 2019; IQ, 2022). This was enabled by a US$10 million investment from Million Monkeys. TodayTix's direct investment included establishing operations in Canada (Toronto), the UK (London) in 2015, and Australia (Melbourne and Sydney) in 2019 (Business Wire, 2015; TheTicketingBusiness News Editor, 2019).

| Company Name | Eventbrite | Ticketmaster | Stubhub | Ticketswap | TodayTix |
|---|---|---|---|---|---|
| Year Established | 2008 | 1976 | 2000 | 2012 | 2013 |
| Home Market Country | US | US | US | Netherlands | US |
| Home Continent | North America | North America | North America | Europe | North America |
| Greenfield investment as a tool of internationalization | United Kingdom Ireland Germany Australia Singapore | United Kingdom Norway Denmark New Zealand Germany Vienna Russia | Canada United Kingdom Europe | Ireland United Kingdom France Brazil | Canada United Kingdom Australia |

Table 2. Internationalization through direct launch or greenfield investment by the companies studied in this research.

*Theme 2: MSP firms of the event management and ticketing industry use acquisitions of competitors as a buy market entry form.*

In terms of acquisitions as a market entry form, only three out of the five firms employed that strategy. Eventbrite, Ticketmaster, and StubHub, pursued internationalization strategies through acquisitions. Eventbrite focused on gaining local expertise and diversifying its market reach by acquiring Ticketea in Spain in 2019 (Lomas, 2018), Ticketscript in Amsterdam (Lunden, 2017), as well as Lanyrd in London and Eventioz in Latin America (Ha, 2013). These acquisitions helped Eventbrite to understand and meet the unique needs of event organizers and attendees in various regions. On the other hand, Ticketmaster, through a series of acquisitions, aimed for both expansion and integration across different markets. By acquiring GET ME IN! in Europe, Ticketmaster expanded its ticket resale business (Waddell, 2008). Furthermore, while acquiring ONE Production in Singapore through its parent company, Live Nation Entertainment (Live Nation, 2019), it helped in establishing a prominent presence in the concert promotion business. Moreover, Ticketmaster acquired Tick Tack Ticket in Spain (CelebrityAccess, 2006), Ticket hour in Greece (IQ, 2017), and Ticketpro in the Czech Republic (Johnson, 2017), to expand its footprint in Europe, Tixcraft in Taiwan (Live Nation, 2020) and Thai Ticket Major in Thailand, for its Asian expansion (Lewis, 2022). The third company, StubHub, executed a massive international expansion through a single strategic acquisition of Ticketbis in Spain

in 2016 (Loeb, 2016), which had a presence in 47 markets including Argentina, Australia, Colombia, Hong Kong, India, Ireland, Israel, New Zealand, South Africa, and Turkey. This allowed StubHub to establish its presence in a wide range of international markets in one stroke.

| Company Name | Eventbrite | Ticketmaster | Stubhub | Ticketswap | TodayTix |
|---|---|---|---|---|---|
| Year Established | 2008 | 1976 | 2000 | 2012 | 2013 |
| Home Market Country | US | US | US | Netherlands | US |
| Acquisition as a tool of internationalization | Ticketea (Spain) Ticketscript (Amsterdam) Lanyrd (London) Eventioz (Latin America) | GET ME IN! (Europe) ONE Production (Singapore) Tick Tack Ticket (Spain) Ticket hour (Greece) Ticketpro (Czech Republic) Tixcraft (Taiwan) Thai Ticket Major (Thailand) | Ticketbis (Spain) Enabled presence in 47 markets including Argentina, Australia, Colombia, Hong Kong, India, Ireland, Israel, New Zealand, South Africa, Turkey. | n/a | n/a |

Table 3. Internationalization through Acquisition by the companies studied in this research.

*Theme 3: MSP firms of the event management and ticketing industry use strategic partnerships as intermediary market entry forms*

Research shows that three out of the five companies analyzed in this study used partnerships at least once to enter a new market. Ticketmaster made its Singaporean entry prominent by aligning with the Sports Hub, Singapore's notable sports and entertainment complex (Live Nation, 2020). Meanwhile, TicketSwap announced partnerships with London's LWE upon entering the UK market, leveraging the collaborations for prominent events like Junction 2 and Elrow Town London (IQ, 2017). Lastly, TodayTix combines localization and partnerships, exemplified in their collaboration with the Harry Potter and the Cursed Child event during their Melbourne, Australia entry, and their continued work with numerous venues in global cities like London and Toronto (TheTicketingBusiness News Editor, 2019).

*Theme 4: MSP firms of the event management and ticketing industry use localization strategies for foreign market integration and growth*

Every single case study firm of this sample employed localization as a pivotal approach to penetrate diverse international markets. Four out of five companies Eventbrite, Ticketmaster, StubHub, and TicketSwap proactively adapted their websites to offer localized versions in the native languages of their respective target markets. For instance, Eventbrite established dedicated websites like www.eventbrite.de for Germany and www.eventbrite.nl for the Netherlands. Similarly, Ticketmaster catered to the French market through https://www.ticketmaster.fr/ and targeted Singapore with https://www.ticketmaster.sg. Moreover, Ticketswap extended its services to the United Kingdom with https://www.ticketswap.uk/, while StubHub addressed the Canadian market with https://www.stubhub.ca/. Conversely, TodayTix focused primarily on internationalizing its operations in English-speaking countries. Furthermore, all the companies in this research seamlessly integrated with local payment systems to enhance their market presence.

*Theme 5: MSP firms of the event management and ticketing industry entered foreign markets with a similar culture/language using hierarchical market entry forms*

Research shows that every company's first internationalization effort started with a country that shared a similar culture, language or that it is in a near geographical region. Eventbrite opened an office in London, England in 2011. In the same year, they extended their localization program to Ireland and Canada by launching eventbrite.ie and eventbrite.ca, respectively (Wong, 2012). Ticketmaster launched a website in the UK in May 1998, eighteen months after creating their website in the US (Marketing Week, 2014). Similarly, Stubhub operated in four countries outside of the United States. It had a presence in Canada, UK in 2012, Germany in 2015; and it launched in Mexico in 2016 (Loeb, 2016). In Europe, Ticketswap followed a similar strategy by expanding in countries in the European region Hungary and Spain in 2016 (TicketSwapBlog, 2018). Finally, TodayTix has focused its internationalization efforts only in English speaking countries, Canada (Toronto), UK (London) 2015 (Business Wire, 2015), and Australia (Melbourne and Sydney) 2019 (TheTicketingBusiness News Editor, 2019).

| Company Name | Eventbrite | Ticketmaster | Stubhub | Ticketswap | TodayTix |
|---|---|---|---|---|---|
| Year Established | 2008 | 1976 | 2000 | 2014 | 2013 |
| Home Market Country | US | US | US | Iceland | US |
| Home Continent | North America | North America | North America | Europe | North America |
| First Internationalization in similar countries/culture? | yes | yes | yes | yes | yes |
| | United Kingdom Canada | United Kingdom | Canada United Kingdom Germany | Hungary Spain | Canada United Kingdom Australia |

Table 4. Case Studies first internationalization efforts.

The findings of this study demonstrate the importance of high control market entry forms such as foreign direct investments like acquisitions and wholly-owned subsidiaries to allow MSP business model firms of the event management and ticketing industry to better understand cultural differences and to adapt networking strategies and match-making algorithms successfully to local customer needs.

## DISCUSSION

The findings show five themes regarding the strategies employed in the market entry choices by MSP firms in the event management and ticketing industry. Below is a cross-analysis of these themes with the relevant literature from the previous review:

*Theme 1: All MSP firms of the event management and ticketing industry in this sample use hierarchical market entry forms*

The research illustrates that all MSPs firms of the event management and ticketing industry in this sample such as Eventbrite, Ticketmaster, and TicketSwap employ foreign direct investment as a

hierarchical market entry form, which is in line with Autio and Zander (2016), Boudreau (2017), Teece (2017), and Piqueras (2020) who mention direct investment as one of the preferred market entry forms. Establishing local offices and hiring local staff resonates with the insights of Piqueras (2020) that highlight the importance of firm-specific advantages (FSAs), as mentioned by Grogaard & Verbeke (2012) and others, in internationalization.

*Theme 2: MSP firms of the event management and ticketing industry use acquisitions of competitors as a buy market entry form*

This study reflects what the literature review mentions about acquisitions as a market entry form. Eventbrite, Ticketmaster, and StubHub engage in acquisitions as a market entry form, which confirms Piqueras' (2020) findings. The acquisition strategy for gaining local expertise and to facilitate further growth, as illustrated by Eventbrite's acquisitions (e.g., Ticketea, Ticketscript, Lanyrd, Eventioz), is aligned with insights by Parente et al. (2018) and Piqueras (2020), which point towards the significance of understanding local markets and regulations.

*Theme 3: MSP firms of the event management and ticketing industry use strategic partnerships as intermediary market entry forms*

The finding that Ticketmaster, TicketSwap, and TodayTix employ partnerships aligns with Autio and Zander (2016) and Piqueras (2020) who discuss that strategic partnerships as market entry form can be a part of the MSP's internationalization strategy. The examples of partnerships such as Ticketmaster with Sports Hub and TicketSwap with LWE, and how they leverage these partnerships to gain entry into new markets, relate to the strategies used by firms as described by Autio and Zander (2016).

*Theme 4: MSP firms of the event management and ticketing industry use localization strategies for foreign market integration and growth*

Companies like Eventbrite, Ticketmaster, StubHub, and TicketSwap adapt their websites and services to local languages and payment systems are consistent with Shaheer & Li (2017) and Piqueras (2020) who mention cultural, administrative, and economic differences as market entry barriers that need to be addressed. The localization approach aligns with the mention of the "online-offline interval" by Wentrup (2016) and Piqueras (2020), which emphasizes the importance of considering offline barriers, including cultural and linguistic adaptations.

*Theme 5: MSP firms of the event management and ticketing industry entered foreign markets with a similar culture/language using hierarchical market entry form*

The findings suggest that all five case study firms started with their internationalization in countries with similar cultures, languages, or geographic proximity correlates with the literature where Stallkamp (2021) and Piqueras (2020) who emphasize the importance of cultural and economic connections between home and host countries, especially in industries with cross-country network

externalities. The decision by TodayTix to focus on English-speaking countries underlines the cultural and language similarities mentioned by Parente et al. (2018) and Piqueras (2020) as vital aspects in international market entry.

In summary, the research on MSP business model firms in the event management and ticketing industry is aligned with the broader literature on MSP market entry choices. The findings also suggest It offers practical examples and illustrates how MSP firms use various market entry forms to overcome market entry barriers and maximize firm-specific advantages in international markets.

## CONCLUSION

The purpose of this study was to explore how MSP business model firms of the event management and ticketing industry select their market entry forms. Five pertinent themes were identified about hierarchical market entry forms as well as acquisitions and strategic partnerships, localization strategies, and the internationalization to culturally and linguistically similar countries.

Foreign direct investment in the form of hierarchical market entry forms emerged as a favored approach, consistent with Autio and Zander (2016), and Piqueras (2020), as the case study firms of this sample established local wholly-owned subsidiaries to exert control over their operations to adapt their networking strategies and match-making algorithms. Acquisitions as buy market entry form of successful competitors were also a notable strategy used for rapid expansion and gaining of local market expertise (Piqueras, 2020). Strategic partnerships, such as those pursued by Ticketmaster and TicketSwap, echoed the insights by Autio and Zander (2016), highlighting the importance of local intermediaries. Localization was utilized by the researched firms, aligning with Shaheer and Li (2017) and Piqueras (2020), who emphasized addressing cultural and economic differences. Finally, the preference for initial expansion into culturally or linguistically similar countries resonated with Stallkamp (2021) and Piqueras (2020), emphasizing the importance of cultural and economic connections.

This study contributes to the literature on market entry choices of MSPs, especially in the event management and ticketing industry. By integrating themes from primary data with existing literature, it provides empirical support to the established theories and models, such as the significance of firm-specific advantages, market entry form selection, and the role of localization.

This study, while insightful, has several limitations, including the sample size and focus on a specific industry. Future research may explore market entry selection strategies employed by MSP firms of other sectors of the hospitality and tourism industry to better understand if the identified themes of this study can be replicated.

## REFERENCES

Autio, A. and Zander, I. (2016). Lean internationalization. Academy of Management Proceedings (pp. 1754–1758).

Baluch, A. (2023). 38 e-commerce statistics of 2023. Forbes. https://www.forbes.com/advisor/business/ecommerce-statistics/

Brouthers, K. D., Geisser, K. D., and Rothlauf, F. (2016). Explaining the internationalization of ibusiness firms. Journal of International Business Studies, 47(5), 513–5

Business Wire. (2015). Theater ticketing app TodayTix launches in London's west end. Business Wire. https://www.businesswire.com/news/home/20150601005218/en/Theater-Ticketing-App-TodayTix-Launches-in-London%E2%80%99s-West-End

CelebrityAccess. (2006). Ticketmaster to acquire Tick Tack Ticket. CelebrityAccess. https://celebrityaccess.com/caarchive/ticketmaster-to-acquire-tick-tack-ticket/

CelebrityAccess MediaWire. (2012). Live nation expands into Russia. CelebrityAccess. https://celebrityaccess.com/caarchive/live-nation-expands-into-russia/

Chapple, J. (2019). TicketSwap to launch in Ireland. IQ Magazine. https://www.iq-mag.net/2018/02/ticketswap-launch-ireland/

Chen, L., Li, S., Shaheer, N., & Stallkamp, M. (2022). 3 obstacles to globalizing a digital platform. Harvard Business Review.

Cennamo, C., and Santalo, J. (2013). Platform competition: Strategic trade-offs in platform markets. Strategic Management Journal, 34(11), 1331–1350.

Dow, D., Larimo, J. (2009). Challenging the conceptualization and measurement of distance and international experience in entry mode choice research. Journal of International Marketing, 17(2), 74–98.

Grace, A. (2019). Eventbrite expands into Asia with Singapore launch. IQ Magazine. https://www.iq-mag.net/2019/02/eventbrite-expands-asia-singapore-launch/

Giudice, M.D., Arslan, A., Scuotto, V. and Caputo, F. (2017). Influences of cognitive dimensions on the collaborative 331 entry mode choice of small- and medium-sized enterprises. International Marketing Review, 34(5), 652–673.

Halkias, D., Neubert, M., Thurman, P. W., & Harkiolakis, N. (2022). The Multiple case study design: Methodology and application for management education. Routledge. https://doi.org/10.4324/9781003244936

Halkias, D., Neubert, M., & Harkiolakis, N. (2023). Multiple Case Study Data Analysis for Doctoral Researchers in Management and Leadership. https://doi.org/10.2139/ssrn.4423757

Halkias, D. and Neubert, M. (2020). Extension of theory in leadership and management studies using the multiple case study design. International Leadership Journal, 12(2), pp.48–73. https://doi.org/10.2139/ssrn.3586256.

Hall, M. (2014). Eventbrite buys ticket to success in Australia. The Sydney Morning Herald. https://www.smh.com.au/technology/eventbrite-buys-ticket-to-success-in-australia-20140317-hvjsx.html

Hollensen, S. (2020). Global marketing. 8th edition. Pearson Education.

Ha, A. (2013). Making its first acquisitions, Eventbrite buys ticketing service Eventioz and event data company Lanyrd. TechCrunch. https://techcrunch.com/2013/09/03/eventbrite-acquires-eventioz-and-lanyrd/

IQ. (2017). Ticketmaster enters Greece with Tickethour buy. IQ Magazine. https://www.iq-mag.net/2016/07/ticketmaster-boosts-sporting-reach-tickethour-buyout/

IQ. (2022). TicketSwap continues to expand with UK launch. IQ Magazine. https://www.iq-mag.net/2022/11/ticketswap-european-expansion-uk-launch/

Johnson, L. (2017). Ticketmaster continues European expansion. Ticketmaster Sport. https://www.ticketmastersport.com/news/ticketmaster-continues-european-expansion

Katz, M. L., and Shapiro, C. (1985). Network externalities, competition, and compatibility. The American Economic Review, 75, 424–440.

Kemp, S. (2022). Digital 2022: Global Overview Report - DataReportal – Global Digital Insights. DataReportal. https://datareportal.com/reports/digital-2022-global-overview-report

Lawler, R. (2012). Eventbrite expands in Europe, with localized online ticket sales for Germany and the Netherlands. TechCrunch. https://techcrunch.com/2012/06/20/eventbrite-germany-the-netherlands/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAD6qUNmuK7zNli_ZXRoUU0i4DYn1dcdPzCUyG-DVzIcPYx84y2YFyZY0m7T1dREPgUPhLrlYcX6QVvxk76t_F-kHZOCJK8pMrRtCTWRUM1ATYUf_UKRpZjxa5T5kT3FvNqvLc7nmDTx-0IS4-zlRBpyCmmfsA0K6N8GUDPKht4qEY

Lewis, G. (2022). Ticketmaster acquires Thai ticket major. TheTicketingBusiness News. https://www.theticketingbusiness.com/2022/07/22/ticketmaster-acquires-thai-ticket-major/

Lin, F.-J. and Ho, C.-H. (2019). The knowledge of entry mode decision for small and medium enterprises. Journal of Innovation & Knowledge, 4, 32–37.

Live Nation. (2019). Live nation expands presence in Singapore through acquisition of leading promoter one production. Live Nation Entertainment. https://www.livenationentertainment.com/2019/01/live-nation-expands-presence-in-singapore-through-acquisition-of-leading-promoter-one-production/

Live Nation. (2020). Ticketmaster expands to Asia with launch in Taiwan and Singapore. Live Nation Entertainment. https://www.livenationentertainment.com/2020/02/ticketmaster-expands-to-asia-with-launch-in-taiwan-and-singapore/

Loeb , S. (2016). EBay acquires Ticketbis to expand StubHub internationally. VatorNews. https://vator.tv/news/2016-05-24-ebay-acquires-ticketbis-to-expand-stubhub-internationally

Lomas, N. (2018). Eventbrite acquires Spanish ticketing platform Ticketea. TechCrunch. https://techcrunch.com/2018/04/19/eventbrite-acquires-spanish-ticketing-platform-ticketea/

Lunden, I. (2017). Eventbrite buys Ticketscript, a self-service ticket platform for music events. TechCrunch. https://techcrunch.com/2017/01/31/eventbrite-buys-ticketscript-a-self-service-ticket-platform-for-music-events/

Marketing Week. (1998). Ticketmaster launches website. Marketing Week. https://www.marketingweek.com/ticketmaster-launches-website/

McIntyre, D. P. and Srinivasan, A. 2017. Networks, platforms, and strategy: Emerging views and next steps. Strategic Management Journal, 38(1), 141–160.

Monaghan, S., Tippmann, E., and Coviello, N. (2020). Born digitals: Thoughts on their internationalization and a research agenda. Journal of International Business Studies, 51, 11-22.

Music Business Worldwide. (2014). Ticketmaster opens HQ in Austria. Music Business Worldwide. https://www.musicbusinessworldwide.com/ticketmaster-opens-hq-in-austria/

Neubert, M. (2023). Post Pandemic Internationalization Behavior. International Business Research, 16(6), 25-36. https://doi.org/10.5539/ibr.v16n6p25

Neubert, M. (2022). A Systematic Literature Review about the Speed of Internationalization. International Journal of Business and Management, 17(2), 80-111. https://doi.org/10.5539/ijbm.v17n2p80

Neubert, M. (2018). Internationalization behaviour of small and medium-sized enterprises from emerging markets: implications for sustainability. Latin American Journal of Management for Sustainable Development, 4(3), 226-238. https://doi.org/10.1504/LAJMSD.2018.096072

Neubert, M. (2018). The impact of digitalization on the speed of internationalization of lean global startups. Technology Innovation Management Review, 8(5), 44-54. https://doi.org/10.22215/timreview/1158

Obadia, C. and Bello, D.C. (2019). How to select an export mode without bias', Business Horizons, 62, 171–183.

Ojala, A., Evers, N., and Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. Journal of World Business, 53(5), 725-739.

Pasquali, M. (2023). Topic: E-commerce worldwide. Statista. https://www.statista.com/topics/871/online-shopping/#topicOverview

Piqueras, S. (2020). Digital internationalizing firms: A systematic literature review and future research agenda. Piccola Impresa/Small Business, (2).

Stallkamp, M., & Schotter, A. P. (2021). Platforms without borders? The international strategies of digital platform firms. Global Strategy Journal, 11(1), 58-80.

Shaheer, N.A., & Li, S. (2018). The CAGE around Cyberspace? How digital innovations internationalize in a virtual world. Journal of Business Venturing, 35 (1)

Ticketmaster. (n.d.). Our History. Ticketmaster Company history. https://www.ticketmaster.com/about/our-history.html?tm_link=abouttm_history

TheTicketingBusiness News Editor. (2019). Todaytix expands into Australia. TheTicketingBusiness News. https://www.theticketingbusiness.com/2019/01/08/todaytix-expands-australia/

Waddell, R. (2008). Ticketmaster buys U.K. Online Ticket Reseller. Billboard. https://www.billboard.com/music/music-news/ticketmaster-buys-uk-online-ticket-reseller-1313597/

Yazan, B., 2015. Three approaches to case study methods in education: Yin, Merriam, and Stake. The qualitative report, 20(2), 134-152. https://doi.org/10.22347/2175-2753v8i22.1038.

Yin, R.K., 2017. Case study research and applications: Design and methods. Sage publications

Zeng, J., Khan, Z., and De Silva, M. (2019). The emergence of multi-sided platform MNEs: Internalization theory and networks. International Business Review, 28(6), 101598.

Zhu, F. and Iansiti, M. (2012). Entry into platform-based markets. Strategic Management Journal, 33(1), 88-106.

# AUDIT REPORT LAG AND FEMALE AUDITORS: EVIDENCE FROM GREECE

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## ABSTRACT

The gender of audit engagement partner can have an effect on the configuration of the audit report lag. In particular, given the documented gender-based differences in the organization of work, risk tolerance, conservatism and audit work, we postulate that female auditors may limit audit report lag. This paper aims to examine the effect of the external auditor's gender on audit report lag in an environment where the responsible external auditors can be identified. Using 100 firm-year observations from Athens Stock Exchange in the period 2017-2020, we run panel regression and find evidence indicating that firms with female external auditors have significantly lower audit report lag. Also, our research confirms the previous researches that studied additional characteristics of the firms, such as the index INVREC and ROA, the loss report and the choice or not of BIG4 audit firms. Although this is an interesting result, it should be interpreted with caution because there is no explicit theoretical interpretation to support it. In general, our results shows that the behavioral differences between men and women may have significant implications for the audit quality and timeliness financial reporting.

*Keywords: Audit Delay, Female Auditor, Gender Diversity, Greece*

## 1. INTRODUCTION

Financial statements should be comprehensible, dependable, comparable and relative to procure a fair and true view for decision-making by stakeholders. The timeliness, a part of coherence, is a main qualitative attribute of financial reports (Ocak and Özden, 2018). The international literature attributes the meaning of audit delay by diversity of words and phrases such as "audit report lag" or "audit lag" or "financial reporting timeliness". The audit report lag (hereafter: ARL), has attracted interest from researchers, business society, standard setters (FASB, 2010; IASB, 2018) and regulatory bodies (SEC, 2002). The ARL is accounted as the difference of the days from the end of financial year to the day when the external auditor signs the financial report of firm (Ashton et al., 1987; Leventis et al., 2005; Cohen and Leventis, 2013).

Research on ARL began approximately 55 years ago (see Beaver, 1968; Davies and Whittered, 1980; Ashton et al., 1987) with the aim of restoring investor confidence and improving the quality of financial reporting. The study of the prior literature shows that there are two streams of research correlated with ARL. The first stream exams firms characteristics (i.e. firm size, leverage, liquidity, performance, elements of internal audit etc.) and the second stream investigates audit related characteristics (i.e. audit process and resources, audit opinion characteristics, auditors characteristics etc) (Abernathy et al., 2014). Also, apart from the client's side, studies have shown that the presence of women plays a special role when she is at the head of the external audit team (Ittonen and Peni, 2012; Hardies et al., 2015). The limited literature referring to female shows that they could have an impact on ARL, while at the same time we find that no similar study has been carried out with a sample of Greek firms. In contrast, research is found (see Ocak and Özden 2018) that shows that Turkish women external auditors, are significantly positively associated with ARL.

Birnberg (2011, p. 6) in his research noted that the presence of women and gender differences are an issue worth studying from the perspective of accounting. According to his research, gender differences are mainly related to perception and risk-taking, which exists in the auditing profession. The aim of this paper is to examine the effect of the external auditor's gender on ARL and also to contribute to the existing limited literature. The research uses 100 firm-year observations from Athens Stock Exchange in the period 2017-2020, a total of 400 observations.

The gender of the external auditor may play a role in the way she makes decisions, in her perception and tolerance of risk (Levin et al., 1988; Schubert, 2006) as well as in the way she conducts audits and her audit work (Eagly and Carli, 2003; Schubert, 2006). These causes may influence and differentiate ARL for firms audited by a female external auditor. The difference in behavior and nature between men and women is subject to increasing interest in the recent literature. The findings of the literature show that women, who hold positions of responsibility, must show special zeal and superior abilities in order to reach top leadership positions (Eagly and Carli, 2003). In addition, the ambition of women and their high expectations (Huse and Solberg, 2006) combined with their organizational spirit and constant vigilance lead them to coordinated and consistent completion of their audit work.

Our results show that firms audited by female external auditors have significantly lower ARL, verifying the initial estimate that external auditor gender has an impact on ARL. Our results are in disagreement with unique research of Ocak and Özden (2018) nevertheless we believe that more research is needed due to the lack of a clear theoretical framework. It is worth noting that our theoretical background was influenced by and is mainly based on the literature of psychology,

management and finance rather than auditing, with the result that the reported findings should be considered to be still at an exploratory level.

The paper is structured as follows. Section 2 addresses the theoretical background, literature review and development of the research hypotheses. Section 3 describes the sample and the followed methodology. The following section includes empirical findings regarding the effect of the gender of the external auditor on ARL. The research concludes with the conclusions, limitations and suggestions for future research.

## 2. THEORETICAL BACKGROUND, LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1. Theoretical background

#### 2.1.1 Female characteristics

The diversity between men and women has been emphasized by the literature of psychology and more broadly of the social sciences. Female, in contrast to male, are conservative, organizational, diligent and distinguished for their thoroughness in information processing and their cautious risk tolerance (Levin et al., 1988; Powell and Anisc, 1997; Huse and Solberg, 2006; Schubert, 2006; Schmitt et al., 2008). Their diversity and the different approach to various issues gives a dynamic to the groups they lead, such as the chartered accountant group. The representation of the female gender in various professions, such as that of the statutory auditor, provides a wider social representation in a group and helps to introduce different ideas, opinions and experiences (Pucheta-Martinez and Fuentes, 2007; Gul et al., 2011 ). At the same time, there are studies showing that women avoid risk while, unlike men, they do not make rash financial decisions (Powell and Ansic, 1997; Barber and Odean, 2001; Dwyer et al., 2002; Watson and McNaughton, 2007). Furthermore, women adapt and comply with rules and legislative frameworks much more easily than men (Barnett et al., 1994; Bernardi and Arnold, 1997), so this gives them a significant advantage in continuous additions and amendments to the tax and accounting frameworks. Another special quality of women is estimated to be the part of communication (Schubert, 2006), an advantage that makes them strong in convincing the audited company to choose them.

The presence of women in the workplace combined with the cited literature show that they are capable, hardworking, stubborn and strong-willed individuals. In addition, the high competition they face from men especially in the audit profession, as well as the glass ceiling effect prevailing in high management positions, forces them to over zeal and constantly perform at their peak in order to rise to the highest levels of the hierarchy, such as becoming partners - certified public accountants in audit offices. This finding is also verified by the studies of Green et al. (2009) and Kumar (2010), who

show that female financial analysts may need to have and thus apply high skills in order to cope in an environment that requires financial expertise. Accordingly, women, in addition to setting high goals, also have high expectations regarding their responsibilities, which push them to put in more effort in order to cope with their tasks.

The difference between men and women may affect the audit process and, by extension, the ARL. This shows that the auditor's gender can affect either positively or negatively the time of publication of the financial statements.

*2.1.2 Audit report lag*

The general notion of "audit delay" or "audit report lag" or "audit lag" was first reported and studied about 55 years ago (Beaver, 1968; Davies and Whittred, 1980). The ARL is measured as the difference of the days from the end firm's financial year to the day when the external auditor signs the audit report (Ashton et al., 1987; Leventis et al., 2005; Cohen and Leventis, 2013). The idea of ARL rest on the view that stakeholders and shareholders choose brief ARL because financial reports comprise the auditors' opinion concerning the reliability of the financial statements (Habib et al., 2019).

*2.2 Literature review*

Gender differences in behavior may inherently affect both the audit process and the judgments of auditors, with a potential impact on ARL. The literature regarding the potential effects of auditor gender is relatively limited. Essentially, a study is identified (Ocak and Özden, 2018) which examine the effect of signing auditor-specific characteristics on the ARL, in Turkey, and finds that the gender and education level of signing auditor have a positive effect on ARL. Also, two key studies are identified (Ittonen and Peni, 2012; Hardies et al., 2015) that examine the role of the external auditor's gender in audit fees. Ittonen and Peni (2012) demonstrated that in the three Nordic countries, firms controlled by female auditors pay significantly higher audit fees. Hardies et al. (2015) found that controlled companies pay approximately 7% higher fees when controlled by a woman.

With regard to gender, other studies have examined the relationship between external auditor gender and audit judgment and found that female auditors are more accurate and thorough in processing information (Chung and Monroe, 2001), while also demonstrating greater effectiveness in their audit judgment (O'Donnell and Johnson, 2001). In addition, studies have shown that gender diversity can also affect the quality of financial reporting, demonstrating that companies with female CFOs are associated with more conservative financial reporting practices (Barua et al., 2010; Peni and Vahamaa, 2010).

Overall, our previous literature shows that auditor gender plays an important role in the audit process, as well as on ARL. Regarding ARL, the limited literature referring to women shows that they

could have an impact on timeliness of financial reporting, while at the same time we find that no similar study has been carried out with a sample of Greek firms.

*2.3 Hypothesis*

According to the management literature, gender diversity in board, in its committees and by extension the top management is seen as an important factor to raise financial performance, and to prevent accounting manipulation (Campell and Minquez-Vera, 2008; Berming and Frick, 2010). The ARL is shaped by the effectiveness of the audit procedures and the dedication of the external auditor to his work. The work of the external auditor is overseen by the audit committee, which is a sub-committee of the board. Considering that the audit phases are planning, risk assessment, conducting the audit and evaluating the exposure results, we observe that the first three steps are important in shaping the ARL and perhaps differ by the gender of the auditor (Francis, 2011; Chi et al., 2016).

At the same time, according to what we have mentioned, we believe that the differences between men and women in the perception and processing of information, diligence, conservatism, meticulousness and risk tolerance can have significant effects on the audit process, on the judgment of auditors', and therefore to ARL. The audit effort can be affected both by the perception and processing of information and by the care and thoroughness that the auditor will show (Ittonen et al., 2013). This means that female auditors are expected to be more efficient, thorough and thorough, leading to limit ARL. In addition, low ARL is also reinforced by the fact that women undertake few jobs to achieve an excellent and short result.

According all the factors given by the prior literature and considering that behavioral differences between men and women may affect the ARL we formulate the following hypothesis.

H1: There is a negative relationship between female external auditor and ARL.

## 3. DATA AND METHODOLOGY

*3.1 Sample Selection and Data Collection*

The final sample used in the empirical analysis consisted of 400 firm-year observations from firms listed in the Athens Stock Exchange. The data used in the analysis cover the fiscal years 2017–2020. Following the methodology of prior related researches (see Ittonen and Peni, 2012; Ittonen et al., 2013), the final sample was formed after first we excluded financial institutions and insurance firms due to their unique features (36 firm-year observations excluded). Next, we excluded firms based outside Greece (12 firm-year observations excluded) and firms which exited the Athens Stock Exchange in the following years (104 firm-year observations excluded). Finally, we excluded observations with insufficient data (124 firm-year observations excluded) or without published audit reports (112 firm-year observations excluded).

We hand collect all the necessary data for the total sample number. The data were collected from the financial reports of the listed companies which were published on the corresponding website of the Athens Stock Exchange. Table 1 refers to the selection of the sample and the distribution of firms by industry.

| Subpanel A: Sample Selection | | |
|---|---|---|
| Number of firms listed on the ASE 2017 | | 197 |
| Excluded: | | |
| Financial institutions | (8) | |
| Insurances | (1) | |
| Firms based outside Greece | (3) | |
| Firms that exited the ASE the following years | (26) | |
| Insufficient data | (31) | |
| Without published audit reports | (28) | |
| Total excluded firms: | | (97) |
| Final sample: | | 100 |
| Subpanel B: The sample by industry | | |
| Industry ASE | | Number of firms |
| Real estate | | 7 |
| Industrial Products and Services | | 13 |
| Trade | | 5 |
| Constructions and Building Materials | | 12 |
| Media | | 3 |
| Oil and Gas | | 3 |
| Personal and Household Items | | 15 |
| Raw materials | | 5 |
| Travel and Leisure | | 8 |
| Technology and Telecommunications | | 12 |
| Food and drinks | | 9 |
| Health | | 4 |
| Chemically | | 4 |
| Total | | 100 |

Table 1: Sample selection and distribution of firms by industry

*3.2 Methodology*

The relationship between ARL and the gender of the external auditor who audits the firm's financial statements is examined using panel data analysis. The dependent variable of the model is the ARL (Ashton et al., 1987; Cohen and Leventis, 2013). The main independent variable is the gender of the external auditor denoted as SEX and takes the value 1 if the auditor is female and 0 male (Ittonen

and Peni, 2012; Ittonen et al., 2013; Hardies et al., 2015). According prior studies, we expect gender to be negatively related to ARL.

At the same time, we use additional control variables, which used from prior studies which examined ARL (Ashton et al., 1987; Sultana et al., 2015; Bhuiyan and D'Costa, 2020). The model we applied, to examine the possible relationship between auditor gender and ARL, is the following:

$$ARL = \alpha + \beta_1 SEX + \beta_2 LNASSETS + \beta_3 INVREC + \beta_4 RISK + \beta_5 LEV + \beta_6 ROA + \beta_7 LOSS + \beta_8 GROWTH + \beta_9 BIG4 + \beta_{10} BUSY + \beta_{11} OPINION + \beta_{12} FIRM\_CHANGE + \beta_{13} PRE\_CHANGE\_BIG4 + e$$

More specifically, the additional variables used are related to firm size, growth, risk and the end of the management year (Abernathy et al., 2014; Harjoto et al., 2015; Hussin et al., 2018; Bhuiyan and D'Costa, 2020). At the same time, we use variables related to the characteristics of the audit firm, the additional services provided as well as the opinion of the auditor (Salleh et al., 2017; Baatwah et al., 2019; Hardies et al., 2015). Finally, we add two variables related to audit firm rotation (Ittonen and Peni, 2012; Harbies et al., 2015).

Specifically, we measure the size of the firm through the assets symbolized by the natural logarithm the LNASSETS (Abernathy et al., 2014; Hassan, 2016; Hussin et al., 2018; Bhuiyan and D'Costa, 2020). According the relevant studies (see Abernathy et al., 2014; Sultana et al, 2015; Hassan, 2016; Hussin et al., 2018; Bhuiyan and D'Costa, 2020), we estimate that variable will be negatively related to ARL. About complexity, we used INVREC is a proxy which measured as the sum of the firm's receivables and inventory divided by its total assets (Salleh et al., 2017; Ghafran and Yasmin, 2018. Following the prior studies, we estimate that variable will be positively related to ARL.

Regarding risk, we use two variables. The first is the RISK (Whittred, 1980; Nehme et al., 2015; Sultana et al., 2015) which is measured as the ratio of short-term liabilities to the firm's current assets and is estimated to be positively related to ARL. The second variable is a binary referred to as LOSS and takes 1 if the company reports losses and 0 not (Hassan, 2016; Baatwah et al., 2019; Bhuiyan and D'Costa, 2020) and is expected to be related positive with ARL.

At the same time, high leverage encourages auditors to conduct extensive audits that may contribute to higher ARL. The leverage variable, referred to as LEV, is the ratio of total liabilities to total assets of the firm (Abdullah, 2006; Khlif and Samaha, 2014; Harjoto et al., 2015; Bhuiyan and D'Costa 2020). Conversely, lower ARL, i.e. negative coefficients, are expected for more profitable and liquid firms. This is examined through the ROA indices (Abernathy et al., 2014; Khlif and Samaha, 2014; Harjoto et al., 2015; Nehme et al., 2015), which is the ratio of net income to total assets, and the GROWTH index (Sultana et al. 2015) which refers to market-to-book ratio of firm for time period t measured as a ratio of market value of equity and book value of equity. According to prior research findings (see Abernathy et al., 2014; Harjoto et al., 2015; Nehme et al., 2015), related to ARL, ROA

variable is expected to correlate negative with ARL. Also, the variable GROWTH is expected to be mixed correlated with ARL, according to the meta-analysis of Habib et al. (2019).

Also, we include in our model two more binary variables, the first refers to the end of the management use, denoted as BUSY (Harjoto et al., 2015; Habib et al., 2019) which takes the value 1 when the end of management year is on 30/6 and 0 when it is 31/12. The second refers to the opinion of the external auditor, denoted as OPINION (Salleh et al., 2017; Baatwah et al., 2019; Bhuiyan and D'Costa, 2020) and takes the value of 1 if the firm received a modified audit opinion and 0 for a positive opinion. We expect both the BUSY and OPINION variables to be positively correlated with our dependent variable (see Salleh et al., 2017; Habib et al., 2019; Baatwah et al., 2019; Bhuiyan and D'Costa, 2020).

Also, Palmrose (1986) and Wright and Ashton (1989), report that larger audit firms in the market have more resources and specialized personnel, which may negatively relate them to ARL. We use a binary variable referred to as BIG4 (Shukeri and Islam, 2012; Schmidt and Wilkins, 2013; Ghafran and Yasmin, 2018; Bhuiyan and D'Costa, 2020), which takes a value of 1 when the appointed external auditor belongs to one of the auditing firms (EY, PWC, KPMG, Deloitte) and 0 when it belongs to a different one. This variable is expected to be negatively related to ARL (see Shukeri and Islam, 2012; Schmidt and Wilkins, 2013; Ghafran and Yasmin, 2018; Bhuiyan and D'Costa, 2020).

Finally, in our model, we add two more binary variables, one refers to the change of audit firm from the previous year to the current year under consideration, denoted as FIRM_CHANGE (Ittonen and Peni, 2012; Hardies et al., 2015), takes a value of 1 in case of change of audit firm to next year and 0 when it remains the same. Accordingly, we also use the variable PRE_CHANGE_BIG4 (Hardies et al., 2015) which refers to the case of changing audit firm and selecting a new one from the BIG4. This variable takes a value of 1 in case of a change of audit firm to BIG4 in next year and 0 – no. We estimate that these two variables will be negatively related to ARL because switching audits may possibly mean seeking lower ARL. The model variables are summarized in Table 2.

| Variable | Symbol | Measurement of variable | Literature |
|---|---|---|---|
| Dependent variable | | | |
| Number of days ARL | ARL | Number of days from the end of the financial year to the publication of the financial statements | Ashton et al., 1987; Cohen and Leventis, 2013 |
| Independent variables | | | |
| Gender of external auditor | SEX | 1 – woman external auditor, 0 - man | Ittonen and Peni, 2012; Ittonen et al., 2013; Hardies et al., 2015 |
| Natural logarithm of firm's size | LNASSETS | The natural logarithm of assets | Abernathy et al., 2014; Hassan, 2016; Hussin et al., 2018; Bhuiyan and |

| | | | |
|---|---|---|---|
| | | | D'Costa, 2020 |
| INVREC | INVREC | The proportion of the inventory and receivable accounting to total assets | Salleh et al., 2017; Ghafran and Yasmin, 2018 |
| Risk | RISK | Ratio of current liabilities to current assets of firm | Nehme et al., 2015; Sultana et al., 2015 |
| Leverage | LEV | Total liabilities to total firm's assets | Abdullah, 2006; Bhuiyan and D'Costa 2020 |
| ROA | ROA | Return-on-equity defined as net income divided by total shareholders' equity | Khlif and Samaha, 2014; Harjoto et al., 2015; |
| Loss | LOSS | 1 –if the firm's net income before extraordinary items is negative, 0 otherwise | Hassan, 2016; Baatwah et al., 2019; Bhuiyan and D'Costa, 2020 |
| Growth | GROWTH | Market-to-book ratio of firm for time period t measured as a ratio of market value of equity and book value of equity | Sultana et al. 2015 |
| If the audit firm belongs to the BIG4 | BIG4 | 1 – belongs to Big4 (PWC, EY, KPMG, Deloitte), 0 - otherwise | Schmidt and Wilkins, 2013; Ghafran and Yasmin, 2018; Bhuiyan and D'Costa, 2020 |
| End of fiscal year | BUSY | 1 - if the end of financial year for firm for period t is 30/6, 0 – otherwise (31/12) | Harjoto et al., 2015; Habib et al., 2019 |
| Audit opinion | OPINION | 1 - in case the firm received a modified audit opinion, 0 – positive opinion | Salleh et al., 2017; Baatwah et al., 2019; |
| Audit firm change | FIRM_CHANGE | 1 - Yes, 0 - No | Ittonen and Peni, 2012; Hardies et al., 2015 |
| Change of audit and selection of BIG4 audit firm | CHANGE_BIG4 | 1 -Yes, 0 - No | Hardies et al., 2015 |

Table 2: Summary of model variables


## 4. RESULTS

*4.1 Descriptive Statistics*

Table 3 presents the descriptive statistics of our sample for the dependent variable, the main independent variable as well as all control variables. Specifically, the table shows the descriptive statistics (mean, standard deviation, minimum, maximum), for the entire sample of 400 observations.

In more detail, we observe that 4% of the observations are audited by a female external auditor (SEX). This percentage is quite small compared to previous research percentages that exceed

10% (see Ittonen and Peni, 2012; Hardies et al., 2015). The variable examining loss reporting by firms (LOSS) shows that 37% of firms report losses on average, a relatively small percentage and comparable to prior researches (see Abernathy et al., 2014; Bhuiyan and D'Costa, 2020; Fredriksson et al., 2020).

The BIG4 variable shows that Greek firms are basically audited by audit firms that are not on the BIG4 list with a rate of 73%, which is in contrast with the corresponding surveys reported in the U.S. and Europe (see Schmidt and Wilkins, 2013). The majority of firms, according to the corresponding variable (BUSY) have an end of fiscal year on 31/12 with a rate of 76%, which contrasts with Australian firms (see Sultana et al., 2015) that have an end of fiscal year on 30/6.

Also, according to the results of table 3, the audit opinion (OPINION) given based on the audit of the financial statements is generally clean and unmodified, with a percentage of 98% in agreement with the corresponding percentage of the research by Migrani and Ahmed (2019) . The variables that examined the change of audit firm (FIRM_CHANGE) and the choice or not of a partner from the Big4 (CHANGE_BIG4) show that 15% of the firms in the sample changed the audit firm at least once during the considered period, while only 3% of them chose the new partner comes from the BIG4.

Following the variables that examine the financial data of the sample, we observe that the average size of the firms in the sample (LNASSETS) reaches approximately €116,000,000. The INVREC index ranges from 0.00 to 0.78 while the LEV index ranges from 0.00 to 6.14, limits tolerable and comparable to those of other studies (see Aldamen et al., 2018) with a mean value of 0.73, far from the equivalent of US companies which is 0.59 (see Abernathy et al., 2014). The maximum value of our leverage ratio shows that some firms rely heavily on long-term liabilities to finance their assets, which exposes them to significant financial risk, especially in difficult economic conditions. Finally, the average return on assets (ROA) is 0% and is difficult to compare with the corresponding indicator of previous research (see Abernathy et al., 2014; Ghafran and Yasmin, 2018).

| Variables | Mean | SD | Minimum | Maximum |
|---|---|---|---|---|
| Dependent variable | | | | |
| ARL | 112.78 | 24.41 | 47.75 | 164.50 |
| Independent Dummy Variables | | | | |
| | 0 | 1 | | |
| SEX | 0.96 | 0.04 | | |
| LOSS | 0.63 | 0.37 | | |
| BIG4 | 0.73 | 0.27 | | |
| BUSY | 0.24 | 0.76 | | |
| OPINION | 0.98 | 0.02 | | |
| FIRM_CHANGE | 0.85 | 0.15 | | |
| PRE_CHANGE_BIG4 | 0.97 | 0.03 | | |

| Independent Variables | | | | |
|---|---|---|---|---|
| LNASSETS | 18.57 | 1.83 | 14.35 | 23.39 |
| INVREC | 0.35 | 0.19 | 0.00 | 0.78 |
| RISK | 1,25 | 2,01 | 0.00 | 15,02 |
| LEV | 0.73 | 0.72 | 0.00 | 6.14 |
| ROA | 0.00 | 0.16 | -1.38 | 0.50 |
| GROWTH | 2.55 | 17.52 | -43.24 | 162,81 |

Table 3: Descriptive Statistics

*4.2. Regression Results*

The regression is performed with the panel data estimation method, using a combination of stratified data and time series and applying a fixed effect in the time dimension. Table 4 presents the results of the panel data for our model, that is, how the gender of the external auditor is related to ARL. Given that $R^2 = 0.61$, the independent variables examined account for 61.0% of the variance in ARL. Also, the high F = 57.21 confirms the validity of the model at the 5% level and shows the good fit of the model.

At the same time, the research calculates the variance factors (VIF). The variance factor (VIF) values in all cases were significantly less than 10 (considered the level of concern), as Gujarati (2003, p. 339) states that a VIF value of less than 10 is acceptable. In particular, the VIF values for all variables are below 3, with most being close to 1.75, indicating that there is no multicollinearity problem in the model.

The main hypothesis tested predicts that there is a negative relationship between female external auditor and ARL. According to Table 4, the results show that indeed, when the firm is audited by a woman, then it is significantly and negatively associated with the ARL (b= -0.06, $P < 0.05$).

Regarding the control variables, we observe that four of them are equally important for ARL. First, the index INVREC variable is significantly and positively associated (b= 0.03, $P < 0.1$), agreeing with the researches of Salleh et al., (2017,) Ghafran and Yasmin, (2018) and Habib et al., (2019). Also, the ROA significantly and negatively associated with ARL (b= -0.04, $P < 0.01$). The third control variable significantly and positively related to ARL is the variable LOSS (b = 0.08, $P < 0.01$), something that is also verified by the researches of Abdullah (2006) and Nelson and Shukeri (2011). These studies show that when firms report earnings, this is negatively associated with ARL, indicating that reporting earnings requires fewer audit days.

Finally, the variable, which examines whether or not the audit firm belongs to the BIG4, is significantly and negatively correlated with ARL at the 1% significance level (b = -0.08, $P < 0.01$). These results agree with the researches of Leventis et al., (2005), Owusu-Ansah and Leventis, (2006), Schmidt

and Wilkins (2013) and Nerantzidis et al. (2023). Essentially, this result shows that BIG4 audit firms, unlike local audit firms, complete the required audit work in a timely manner, using more efficient audit technology (Leventis et al., 2005; Sultana et al., 2015).

| Variable | Coefficient | Standard error | VIF |
|---|---|---|---|
| Intercept | 4.63 | 0.16 | |
| SEX | -0.06** | 0.03 | 1.28 |
| LNASSETS | 0.01 | 0.02 | 2.73 |
| INVREC | 0.03* | 0.03 | 2.10 |
| RISK | 0.02 | 0.01 | 1.43 |
| LEV | -0.01 | 0.02 | 1.65 |
| ROA | -0.04*** | 0.03 | 1.50 |
| LOSS | 0.08*** | 0.02 | 1.32 |
| GROWTH | 0.00 | 0.04 | 1.78 |
| BIG4 | -0.08*** | 0.02 | 1.58 |
| BUSY | 0.00 | 0.06 | 1.25 |
| OPINION | 0.05 | 0.03 | 1.38 |
| FIRM_CHANGE | 0.01 | 0.04 | 1.88 |
| PRE_CHANGE_BIG4 | 0.00 | 0.05 | 2.00 |
| Adjusted R2 = 0,61 | | | |
| F statistic (sig.) = 57,21** | | | |
| Observations = 400 | | | |

Significant at the *10, **5 and ***1% levels, respectively. One-tailed tests are used when coefficients have predicted signs
Table 4: Regression Results

## 5. CONCLUSIONS, IMPLICATIONS AND FUTURE RESEARCH

Gender diversity in behavior, communication, decision-making, thoroughness, perception of information's and risk have an impact on the accounting industry as well. This research examines whether the gender of the external auditor, specifically female, affects ARL. The results show that the woman is negatively and significantly correlated with ARL. This result refers to a sample of Greek firms listed on the ASE for the period 2017 to 2020. Also, our research confirms the previous researches that studied additional characteristics of the firms, such as the index INVREC and ROA, the loss report and the choice or not of BIG4 audit firms.

Our result that female external auditors command fewer ARL, although an interesting finding, creates interpretations that need careful consideration due to the lack of obvious and convincing theoretical explanations. Our theoretical background is not only based on studies of accounting but also of psychology and management. Therefore, we consider that our results are still in an exploratory stage and more research is needed as well as additional variables, referring to particular characteristics of women. At the same time, another limitation is that we cannot rule out the

impact of supply and demand affecting the time of ARL. Therefore, the results of all studies analyzing ARL should be interpreted with caution.

This study has implications for auditing firms, audited firms, and researchers of several subjects beyond accounting. Also, it is the first study with a sample of Greek companies that measures the impact of female auditors on ARL, while at the same time adding to the scarce relevant literature. Furthermore, it demonstrates that the gender diversity is capable to provide the resources necessary to limit ARL.

This research aims to provide the opportunity for a reflection on this important issue, so that future research can examine more characteristics of women such as experience, expertise, etc. as well as to focus on a longer period of time. Finally, future research can focus on the interaction of the external auditor with the audit committee and their effect on reducing ARL.

## REFERENCES

Abdullah, S. N. (2006), "Board composition, audit committee and timeliness of corporate financial reports in Malaysia", Corporate ownership and control, Vol. 4 No. 2, pp. 33-45.

Abernathy, J. L., Beyer, B., Masli, A., and Stefaniak, C. (2014), "The association between characteristics of audit committee accounting experts, audit committee chairs, and financial reporting timeliness", Advances in Accounting, Vol. 30 No. 2, pp. 283-297.

Aldamen, H., Hollindale, J., and Ziegelmayer, J. L. (2018), "Female audit committee members and their influence on audit fees", Accounting and Finance, Vol. 58 No. 1, pp. 57-89.

Ashton, R. H., Willingham, J. J., and Elliott, R. K. (1987), "An empirical analysis of audit delay", Journal of accounting research, Vol. 25 No. 3, pp. 275-292.

Baatwah, S. R., Salleh, Z., and Stewart, J. (2019), "Audit committee chair accounting expertise and audit report timeliness: The moderating effect of chair characteristics", Asian Review of Accounting, Vol. 27 No. 2, pp. 273-306.

Barber, B. M., and Odean, T. (2001), "Boys will be boys: Gender, overconfidence, and common stock investment", The quarterly journal of economics, Vol. 116 No.1, pp. 261-292.

Barnett, T., Brown, G., and Bass, K. (1994), "The ethical judgments of college students regarding business issues", Journal of Education for Business, Vol. 69 No. 6, pp. 333-338.

Barua, A., Davidson, L. F., Rama, D. V., and Thiruvadi, S. (2010), "CFO gender and accruals quality", Accounting Horizons, Vol. 24 No. 1, pp. 25-39.

Beaver, W. H. (1968), "The information content of annual earnings announcements", Journal of accounting research, Vol. 6, pp. 67-92.

Bernardi, R. A., and Arnold Sr, D. F. (1997), "An examination of moral development within public accounting by gender, staff level, and firm", Contemporary Accounting Research, Vol. 14 No. 4, pp. 653-668.

Bhuiyan, M. B. U., and D'Costa, M. (2020), "Audit committee ownership and audit report lag: evidence from Australia", International Journal of Accounting and Information Management, Vol. 28 No. 1, pp. 96-125.

Birnberg, J. G. (2011), "A proposed framework for behavioral accounting research", Behavioral Research in Accounting, Vol. 23 No, 1, pp. 1-43.

Campbell, K., and Mínguez-Vera, A. (2008), "Gender diversity in the boardroom and firm financial performance", Journal of business ethics, Vol. 83, pp. 435-451.

Chi, W., Myers, L. A., Omer, T. C., and Xie, H. (2017), "The effects of audit partner pre-client and client-specific experience on audit quality and on perceptions of audit quality", Review of Accounting Studies, Vol. 22, pp. 361-391.

Chung, J., and Monroe, G. S. (2001), "A research note on the effects of gender and task complexity on an audit judgment", Behavioral Research in Accounting, Vol. 13 No. 1, pp. 111-125.

Cohen, S., and Leventis, S. (2013, March), "Effects of municipal, auditing and political factors on audit delay", In Accounting Forum, Vol. 37 No.1, pp. 40-53. Taylor and Francis.

Davies, B., and Whittred, G. P. (1980), "The association between selected corporate: attributes and timeliness in corporate: reporting: further analysis", Abacus, Vol. 16 No.1, pp. 48-60.

Dwyer, P. D., Gilkeson, J. H., and List, J. A. (2002), "Gender differences in revealed risk taking: evidence from mutual fund investors", Economics Letters, Vol. 76 No. 2, pp. 151-158.

Eagly, A. H., and Carli, L. L. (2003), "The female leadership advantage: An evaluation of the evidence", The leadership quarterly, Vol. 14 No. 6, pp. 807-834.

Francis, J. R. (2011), "A framework for understanding and researching audit quality", Auditing: A journal of practice and theory, Vol. 30 No. 2, pp. 125-152.

Fredriksson, A., Kiran, A., and Niemi, L. (2020), "Reputation Capital of Directorships and Demand for Audit Quality", European Accounting Review, pp. 1-26.

Ghafran, C., and Yasmin, S. (2018), "Audit committee chair and financial reporting timeliness: A focus on financial, experiential and monitoring expertise", International Journal of Auditing, Vol. 22 No. 1, pp. 13-24.

Green, C., Jegadeesh, N., and Tang, Y. (2009), "Gender and job performance: Evidence from Wall Street", Financial Analysts Journal, Vol. 65 No. 6, pp. 65-78.

Gujarati, D. N. (2003), Basic econometrics (4th ed.): McGraw-Hill, New York, NY.

Gul, F. A., Srinidhi, B., and Ng, A. C. (2011), "Does board gender diversity improve the informativeness of stock prices?", Journal of accounting and Economics, Vol. 51 No. 3, pp. 314-338.

Habib, A., Bhuiyan, M. B. U., Huang, H. J., and Miah, M. S. (2019), "Determinants of audit report lag: A meta-analysis", International Journal of Auditing, Vol. 23 No. 1, pp. 20-44.

Hardies, K., Breesch, D., and Branson, J. (2015), "The female audit fee premium", Auditing: A Journal of Practice and Theory, Vol. 34 No. 4, pp. 171-195.

Harjoto, M. A., Laksmana, I., and Lee, R. (2015), "The impact of demographic characteristics of CEOs and directors on audit fees and audit delay", Managerial Auditing Journal, Vol.38 No. 8/9, pp.963-997.

Hassan, Y. M. (2016), "Determinants of audit report lag: evidence from Palestine", Journal of Accounting in Emerging Economies, Vol.6 No. 1, pp. 13-32.

Huse, M., and Solberg, A. G. (2006), "Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards", Women in management review, Vol. 21 No. 2, pp. 113-130.

Hussin, W. N. W., Bamahros, H. M., and Shukeri, S. N. (2018), "Lead engagement partner workload, partner-client tenure and audit reporting lag". Managerial Auditing Journal, Vol. 33 No. 3, pp. 246-266.

Ittonen, K., and Peni, E. (2012), "Auditor's gender and audit fees", International Journal of Auditing, Vol. 16 No. 1, pp. 1-18.

Ittonen, K., Vähämaa, E., and Vähämaa, S. (2013), "Female auditors and accruals quality", Accounting Horizons, Vol. 27 No. 2, pp. 205-228.

Khlif, H., and Samaha, K. (2014), "Internal Control Quality, Egyptian Standards on Auditing and External Audit Delays: Evidence from the Egyptian Stock Exchange", International Journal of Auditing, Vol. 18 No.2, pp. 139-154.

Kumar, A. (2010), "Self-selection and the forecasting abilities of female equity analysts", Journal of Accounting Research, Vol. 48 No. 2, pp. 393-435.

Leventis, S., Weetman, P., and Caramanis, C. (2005), "Determinants of audit report lag: Some evidence from the Athens Stock Exchange", International Journal of Auditing, Vol. 9 No. 1, pp. 45-58.

Levin, I. P., Snyder, M. A., and Chapman, D. P. (1988). The interaction of experiential and situational factors and gender in a simulated risky decision-making task. The Journal of Psychology, 122(2), 173-181.

Miglani, S., and Ahmed, K. (2019), "Gender diversity on audit committees and its impact on audit fees: evidence from India", Accounting Research Journal, Vol. 32 No. 4, pp. 568-586.

Nehme, R., Assaker, G., and Khalife, R. (2015), "Dynamics of Audit Lag-Board of Directors and Audit Committees' Effect", Corporate Ownership and control, Vol. 12 No. 3, pp. 281-294.

Nelson, S. P., and Shukeri, S. N. (2011), "Corporate governance and audit report timeliness: evidence from Malaysia", Research in Accounting in Emerging Economies, Vol. 11 No. 1, pp. 109-127.

Nerantzidis, M., Drogalas, G., Lazarides, T. G., Chytis, E., and Mitskinis, D. (2023), "Audit committee characteristics and the audit report lag in Greece", Journal of Operational Risk, Vol. 18 No. 1, pp. 59-89.

Ocak, M., and Özden, E. (2018), "Signing auditor-specific characteristics and audit report lag: A research from Turkey", Journal of Applied Business Research, Vol. 34 No. 2, pp. 277-294.

O'Donnell, E., and Johnson, E. N. (2001), "The effects of auditor gender and task complexity on information processing efficiency", International Journal of Auditing, Vol. 5 No. 2, pp. 91-105.

Owusu-Ansah, S., and Leventis, S. (2006), "Timeliness of corporate annual financial reporting in Greece", European Accounting Review, Vol. 15 No. 2, pp. 273-287.

Peni, E., and Vahamaa S. (2010), "Female executives and earnings management",. Managerial Finance, Vol. 35, pp. 629–645.

Powell, M., and Ansic, D. (1997), "Gender differences in risk behaviour in financial decision-making: An experimental analysis", Journal of economic psychology, Vol. 18 No. 6, pp. 605-628.

Pucheta-Martínez, M. C., and De Fuentes, C. (2007), "The impact of audit committee characteristics on the enhancement of the quality of financial reporting: An empirical study in the Spanish context", Corporate Governance: An International Review, Vol. 15 No. 6, pp. 1394-1412.

Salleh, Z., Baatwah, S. R., and Ahmad, N. (2017), "Audit committee financial expertise and audit report lag: Malaysia further insight", Asian Journal of Accounting and Governance, Vol. 8, pp. 137-150.

Schmidt, J., and Wilkins, M. S. (2013), "Bringing darkness to light: The influence of auditor quality and audit committee expertise on the timeliness of financial statement restatement disclosures", Auditing: A Journal of Practice and Theory, Vol. 32 No.1, pp. 221-244.

Schmitt, D. P., Realo, A., Voracek, M., and Allik, J. (2008), "Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures", Journal of personality and social psychology, Vol. 94 No. 1, pp. 168-182.

Schubert, R. (2006), "Analyzing and managing risks–on the importance of gender differences in risk attitudes", Managerial Finance, Vol. 32, pp. 706–715.

Shukeri, N. and Islam, A. (2012), "The determinants of audit timeliness: Evidence from Malaysia", Journal of Applied Sciences Research, Vol. 8 No. 7, pp. 3314-3322.

Sultana, N., Singh, H., and Van der Zahn, J. L. M. (2015), "Audit committee characteristics and audit report lag", International Journal of Auditing, Vol. 19 No. 2, pp. 72-87.

Watson, J., and McNaughton, M. (2007), "Gender differences in risk aversion and expected retirement benefits", Financial Analysts Journal, Vol. 63 No. 4), pp. 52-62.

# CORPORATE INTEGRATION PROCESSES: LESSONS FROM THE COVID-19 CRISIS

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## ABSTRACT

This research observes how the integration of young trainees working for French companies occurred during the Covid-19 crisis when much of the work had to be done remotely. We aimed to understand which critical points needed to be better addressed by companies in the post-Covid perspective of a rapid transfer of employees to a hybrid organization. Our data are based on fifty-six questionnaires and six semi-structured interviews, designed to reconstruct how the integration took place in this particular context, what problems arose in the absence of physical proximity to colleagues and managers, and how they were (or could have been) dealt with. More specifically, how, in a context of mostly (sometimes only) remote working, can newcomers discover the company, its culture, its operating processes, etc.? The grounded theory analysis enabled us to identify five key areas, which we describe based on the data in our possession. Given the age of the respondents, we were also interested in the impact of generational change on the perception of the relationship with the company in the context of integration.

In conclusion, we look at how to deal with this form of integration in a new context, i.e., how best to distribute actions, use new people processing devices, or encourage newcomers to develop more varied strategies than in the past.

*Keywords: COVID-19 Crisis, integration, organizational socialization, international management, remote work*

## INTRODUCTION

The COVID crisis has provided an extraordinary boost to remote work (RW) (De Boer & Delobre, 2022), forcing a very large proportion of the population to work from home for almost two years. It also led to a decrease in the number of direct contacts with people inside and outside the companies. The pandemic has changed the way the world works. Our lives have become more virtual without us really wanting it. And yet, it was long thought that many aspects of socialization could only take place in the form of direct relationships, more precisely in 'colocated' learning (Bailey et al., 2015).

This article deals with how industrial companies integrated newcomers during the Covid-19 crisis. It is the logical continuation of research based on a series of interviews with senior managers (Montenero & Cazorzi, 2022), which enabled us to uncover the perceived effects of the pandemic on corporate life, including much more frequent use of RW, the search for greater flexibility to meet many new challenges, and the difficulty of carrying out certain acts such as recruitment, reframing or dismissals remotely. Although some of the people we spoke to mentioned integration as one of the major challenges, they could not provide any concrete examples.

Integration is an action that is difficult to grasp clearly. When can integration be considered complete? When and how does a newcomer find a point of balance between his or her national culture of origin and an organizational culture that may be very different? Integration is a complex process, difficult to analyze. In another context, politicians have talked a lot about it. However, none of them seem to have understood how it works because there is undoubtedly an element of magic in how any integration takes place.

RW promises to bring many benefits to employees, such as greater flexibility in managing activities, increased individual responsibility, and better management of the separation between private and professional life. However, it also seems to lead to an impoverishment of relationships that can jeopardize collaboration. Integration is one of those actions that was long perceived as requiring direct contact and presence in the company. This possibility automatically diminishes when we move to a hybrid operation. In most cases, at least before the Covid-19 crisis, integration was essentially face-to-face (Nonaka et al., 2000). However, the pandemic shattered this pattern, forcing a change in approach, as the proportion of face-to-face work was often much lower than that carried out remotely. In such a changing environment, it is certainly necessary to find a way of recovering the information that was tacitly transmitted and overcoming the limitations of the virtual.  Work on remote integration is still relatively rare, often limited to onboarding (De Boer & Delobre, 2022; Rodeghero et al., 2022). Consequently, any empirical data on the subject is useful in advancing our understanding of the phenomenon.

Our research focuses on the reactions of two groups of young graduates starting their careers on fixed-term contracts of between six and eighteen months. We have deliberately chosen to focus on the experiences of employees who know that the time devoted to integration will be limited and who will therefore concentrate on the essential aspects, those that will enable them to be effective by reducing the uncertainty associated with their positions, particularly about the organizational culture, the tasks to be implemented and the role to be adopted (Louis, 1980). More specifically, we seek to break down the integration process as experienced by respondents and identify the most salient areas, those considered to have ensured the eventual success or failure of the integration. This automatically leads

to further questions, such as how much of this can be attributed to the institution and how much to the proactive actions of the newcomers. In addition, given that the respondents are all under 26, we'll also try to understand whether their attitudes to integration are very different from what we know. Generally speaking, even if the analysis phenomenon occurred during the pandemic, it is not what happened during the Covid-19 crisis that interests us but how we can use the lessons of that period to operate better today and tomorrow.

After examining the literature on corporate integration and how it operates in times of crisis, we will analyze the data collected to understand how corporate integration occurs in a context where direct contact is becoming a minority, and the impact of tacit processes is becoming harder to grasp.

## THEORETICAL FRAMEWORK

In this section, we shall look at two different approaches to corporate integration, with a macro-focus on organizations operating in an international context and a micro-focus on the contributions of organizational socialization. Given our choice of population, we will also look at the consequences of generational differences.

*International business and organizations*

Organizational integration seeks to anchor newcomers to the company's cultural vision. The success of this attempt depends largely on the role these latter will play in the organization but also on their actions and limitations. Integration also means asking whether newly arrived employees are ready to share the company's values and interpret them in the same way as future colleagues or fellow employees. This evolution contributes positively, enabling newcomers to feel at ease in the new environment.

In the professional context, organizational culture plays a fundamental role in creating an attractive face, a communicative action designed to impress newcomers and win over new subsidiaries (Bouquet & Birkinshaw, 2008; Mayhofer, 2011; Scha, 2005). We must remember that employee integration is a system used to influence, direct and ensure the hegemony of the headquarters over local organizations (Bouquet & Birkinshaw, 2008; Mayrhofer & Urban, 2011; Schaaper, 2005). Interestingly, the French school has rejected the idea that memorizing a list of values and repeating them like a mantra can be an excellent leadership process (Barbichon, G. 1990; Barmeyer, 2004; Bryon-Portet, 2011; Chevrier, 2018). Finally, it is often at the time of acquisition or merger that organizational integration is reinforced (Birkinshaw et al., 2000), particularly in the context of sharing practices between entities that have to work together (Adanhounme & Brice, 2016; Lanciano et al., 2016). If integration can be seen as a way of controlling the local level, managing it through "common values" while sharing what is known as

"good practices," it is nonetheless surprising that these characteristics can be essentially transmitted through a tacit approach (Van der Ven et al., 2000). The tacit approach, backed up by numerous examples, is more effective than any verbal exchange. If the coffee-machine system is always the right way to bring someone into a new context (Harris & Brewster, 1999), how can transferring a corporate culture be done via video? (Clanché et al.,2023; Vuchoshy et al., 2023). How can it be done when presenting concrete examples becomes more difficult (Shin et al., 2017)?

In the wake of the pandemic, several researchers sought to imagine the future of work and social inclusion in a new context (Antonacopoulou & Georgiadou, 2020). They concluded that the drastic reduction in face-to-face contact meant that human resources had to be managed differently and that a much more advanced relational level was needed than had existed until now (Branicki, 2020; Caligiuri et al., 2020).

*Organizational socialization*

Starting out in a new organization is a decisive moment in the evolution of a professional career. It is a time of in-depth learning, during which the newcomer seeks to make sense of his or her environment (Del Boer & Delobbe, 2022). The literature has generally identified four areas of action (Chao, 2012; Delobbe, 2011): 1. acquisition of the skills required for the job; 2. understanding of the expectations linked to the individual's role in the organization; 3. social integration and harmonious working relationships; 4. Discovery and acculturation to the shared values and tacit norms of the organization. Organizational socialization is when a new employee discovers the value system, integrates the necessary processes, and learns the behaviors required in the society, organization, or group (Schein, 1968, p. 2). However, since the first attempts were made to define how to integrate group members, the traditional system based on lifelong employment and gradual ascent has become much more complex in recent years, with an increasing number of reorientations, changes of jobs or companies, mobility, or the accumulation of internships or time-limited jobs, as in the case of our target population (Delobbe & De Boer, 2022, p. 141). Several researchers have sought to define new career classifications that take these developments into account (Arthur, 2014; Mayrhofer et al., 2014).

To facilitate the socialization of new entrants, organizations have devised various tactics, means, or devices, what Van Maanen & Schein (1979) have termed "people processing devices". However, with the evolution of the organization of work we mentioned earlier, the objectives associated with the integration process have profoundly changed. New arrivals are much more frequent and increasingly involve individuals who will only be with the company for a brief, even laconic, period. Human capital has been contractualized (De Boer & Delobbe, 2022).

This situation has led researchers to pay greater attention to the intervention capacity of the new entrants themselves (Ashford & Black, 1996; Nicholson, 1984). Gradually, companies have tended to

expect newcomers to play the most important role. The employees are thus active players who deploy various strategies to cope with uncertainty, decipher their environment, and learn the needs of their new role (Cooper-Thomas & Burke, 2012). Several typologies are used to describe these strategies and identify concrete actions: 1. seeking information; 2. seeking feedback; 3. networking; 4. Participation in social activities; 5. Relationship with boss; 6. Positive reframing of situations; 7. Negotiating change at work (Ashford & Bouquet, 1996; Cooper-Thomas & Burke, 2012; Delobbe & De Boer, 2022).

*Generations Z and Y*

If the concept of generation is already old (Mannheim, 1938), the habit of describing how the new generation could be distinguished from the one that preceded it was born around 1968. In 2000, Howe & Strauss defined three criteria for describing a generation: 1. perceived belonging, 2. shared beliefs and behaviors, and 3. shared history. We have reminded the names of the different generations in Table 1.

| Table 1 - Definition of generations | |
| --- | --- |
| Commonly used name | Span of birth years |
| Silent Generation | 1928-1945 |
| Baby-boomers | 1946-1964 |
| Generation X | 1965-1980 |
| Generation Y (Millennials) | 1981-1996 |
| Generation Z | 1997-2012 |

Adapted from Stewart, 2017

The description of future generations has accumulated in the literature concerning Generation Z (Don Tapscott, 1998/2001; Prensky, 2001; Horayak & Feher, 2011). Generation Z has had many nicknames: echo boomers, millennials, digital natives, net generation, online generation, and digital immigrants (Csobanka, 2016). Right after Millennials, children of Generation Y have a distinguishing feature in the fact that they were born into a world where communication systems abound (Prensky, 2001). This new generation will play a much more important role in the future, with the retirement of many representatives of other generations.

Scholars have devoted much time analyzing the characteristics of Gen Z and now Gen Y. One main reason is the growing number of conflicts between generations: In an American study, sixty-four HR professionals in large companies reported one conflict (Eisner, 2005). Some articles (Heckleberry-Hunt, 2011) have sought to give advice on the changes to be made when teaching Generation Y classes: work in groups using the trial and error method, avoid traditional lectures without active participation, and give more room to creativity.

Various research studies on Onboarding carried out in the USA with Gen Z or even Gen Y show the importance of exchanges and communication. In particular, newcomers from these two generations must understand the objective behind every action they take. Ongoing direct communication with the manager is considered fundamental to guiding his/her action, knowing whether the problem has been properly understood and whether the action has been effective. It is interesting to note that a study of millennials shows that 25% of them are ready to leave their job before the first six months if the onboarding has not been successful (Schroth, 2019). Furthermore, both generations are characterized by a strong need for recognition, which is probably even more pronounced among Gen Ys. On the negative side, Gen Ys may be more likely to react badly to stress and suffer nervous breakdowns.

As far as the link with the company employing them is concerned, scholars have different analyses of the phenomenon. On the other hand, there are many examples showing the existence of a lower commitment that can lead to more frequent departures than for previous generations (Stewart et al., 2017).

## METHODOLOGY

The Covid-19 pandemic created a major shock that affected new employees differently. Some, especially at the beginning, started immediately to work remotely and did not meet their managers or colleagues until very late when restrictions drastically diminished. At the other end of the scale, others seem to have gotten over their medical and social obligations and continued establishing many contacts useful to their integration as if nothing had changed. To gain a better understanding of how new arrivals experienced this period, we decided to use a mixed-method approach (Bazeley, 2008) consisting of a survey (See Figure 1) addressed to those who took up their post during the pandemic period, together with several semi-structured interviews to gain further insight into the specificity of the phenomenon. Teddlie and Tashakkori (2003) have identified forty reasons why a researcher might wish to use a mixed-method approach. However, the most important thing seems to be to know what precise need each method meets and to avoid transforming data acquired by a quantitative method into data obtained in another way or vice versa. Moreover, once the data has been collected using both systems, it is essential to check that there are no contradictions between the information obtained by the two approaches. We consider this combination to be particularly well-suited to the grounded theory we have adopted (Corbin & Strauss, 2008; Glaser, 1978; Glaser & Strauss, 1967) since the semi-structured interviews enabled us to deepen or test certain information from our initial analyses.

| Figure 1. Questionnaire | |
|---|---|
| General information | 1.     How long have you been working in the company? <br><br> 2.     Basic description of the work done |
| Organization of work | 1.     Do you have a tutor? <br><br> 2.     Do you belong to a clearly defined group? <br><br> 3.     What do you need to feel integrated? <br><br> 4.     Do you consider that starting work during the pandemic was an advantage? A disadvantage? Why? <br><br> 5.     What was the impact on your integration? |
| Remote work | 1.     Share of remote work? <br><br> 2.     Did the actions done by the company help you feel well? Example of actions? <br><br> 3.     Could you mention an action that would have helped you feel better integrated? |
| Integration | 1.     Do you feel integrated today? <br><br> 2.     Why< or Why not? |
| Conclusion | Reaction to the fact of being integrated in a period of pandemic |

We sent our survey to two different population groups. The first group comprised young French graduates who were part of a business support system abroad (*VIE - Volontaires Internationaux en Enterprise)*. They began an 8 to 18-month limited-term contract in the subsidiary of a French company. In most cases, they were discovering a new company at the same time as starting in a new country. There were thirty-six responses. In our case, they worked for companies in the Czech Republic, Slovakia, Romania, and Poland. In the second group, we had young graduating students who completed six- to eight-month internships carried out in France. These students were not all French, but they were working in companies located in France. We received twenty responses. Respondents of both groups were between 20 and 25 years old.

The survey aimed to gain a better understanding of the phenomena that favored integration or those that made it more difficult. After starting the initial analyses, we launched eight individual semi-directive interviews with people from the same groups. Finally, to avoid having to analyze possible discrepancies due to translation, we have mentioned in our text the quotations that we translated into English.

We should also point out that in defining our approach, we adopted a number of a priori assumptions. Firstly, we considered that the COVID-19 crisis offered an exceptionally easy opportunity to set up a pilot test. We were convinced that what was happening in a telecommuting-dominated environment could provide interesting insights when setting up a hybrid work system. Secondly, we gave

preference to new employees on fixed-term contracts of between six and eighteen months, considering that they would be much more motivated to focus on the most concrete aspects of their job, i.e., everything that would enable them to be effective as quickly as possible. Finally, to facilitate analysis and ensure a harmonized working environment, we have preferred to limit ourselves to the French national culture, admitting just one variation: French trainees work in French companies located in France, whereas VIEs are employed by subsidiaries of French companies located in Central Europe. There is a cultural difference in terms of professional culture, with the French trainees working almost exclusively on marketing projects. At the same time, the VIEs had more technical activities in logistics, production, or organization.

For the purposes of this research, we will refer to the traditional definition of organizational socialization: "The process by which a person learns the values, norms, and behaviors required to enable him or her to become a full-fledged member of the organization" (Van Maanen & Schein, 1979). Our research question concerns integration in a COVID-19 situation, i.e., understanding the key factors that play a role in the quality of new entrants' organizational socialization. In addition, we will seek to move closer to the existing literature by seeking to understand whether the corrective actions required about traditional integration are more of the order of tactics put in place by the institutions concerned or proactive actions by the interested new entrants themselves.

Our analysis material consisted of all responses to open-ended questionnaire questions, reactions, comments, or examples, as well as transcripts of semi-structured interviews. As is customary when using grounded theory, we analyzed the data as we went along, using open coding (comparing parts of the same discourse or different interviews), grouping together information considered to be similar, and finally, creating conceptual categories that are the main aspects of our finding.

## ANALYSIS OF RESULTS

Data analysis enabled us to identify several trends that marked the integration period for new entrants.

*A feeling of inefficiency*

Generally speaking, respondents felt less effective in responding to the role they had been assigned, as they knew they had limited knowledge of the company.  For some, *"...the simplest things become difficult"* or *"it (we) need more time to understand the job and the different missions..."* One interviewee summarized the problems encountered by saying that the most difficult thing was *"...checking that all the people [had] the same approach as you"*. While this kind of statement may be common to all start-up employees, it is very difficult, when you only meet colleagues remotely, to know whether your way of working is similar to that of others in the company.

Semi-structured interviews show that the feeling of belonging to a human group, of being integrated, is often the fundamental objective of new arrivals, which would enable them to accept doubts or a feeling of temporary inefficiency. Baumeister & Leary (1995, p497) stated that *"belonging is our human need to form and maintain lasting, positive and meaningful interpersonal relationships."* This sense of belonging is the central element that enables team members to create the emotional patterns and cognitive process necessary to overcome doubts and uncertainties and to accept goals. The opposite situation can generate a form of mental malaise and make work very uncomfortable (Manago & Krendl, 2022).

In a remote or even hybrid context, this feeling of ineffectiveness will likely be experienced critically by newcomers. However, the manager or knowledgeable colleagues may have it difficult to perceive it. Care will no doubt have to be taken to circumscribe it and respond to it effectively.

*Isolation and relational limitations*

Several newcomers have reported feeling lonely and marginalized at times. Even when they were in the company, they experienced difficult situations: *"I was alone and lost in the office"*. One person, in particular, wrote: *"...without eating or having coffee together, it is very difficult!"*. In general, there seems to have been a lack of discussion of certain operating specifics that cannot be found in the procedures. As one newcomer confided, *"...I did not have the opportunity to learn the tricks, what normally happens when we are all together."*

It seems that this gap persisted even when the situation improved. One person, for example, said: *"Before, during confinement, it was easier because we had video-conferencing. Now, people mostly exchange with people they knew before."* Some lacked the time to deepen relationships and turn colleagues into allies. Or, in other cases, you may have some problems contacting the right colleagues. You would think that switching to hybrid operation would make it easier to keep in touch. However, the colleagues you would like to meet aren't always there when you need them: *"They're not working when you are, and they can't help us when we need them! "*

Increasing the number of joint work situations, even from a distance, can facilitate integration because it allows you to see what the new colleague is capable of doing, how he/she reacts, and you get to know him/her. Our analysis showed that the second group, the French abroad, seemed to have fewer problems. Given that they were working on highly technical subjects, they had a great many meetings, sometimes face-to-face, for training or to take stock of project progress. The other group, working more on marketing projects, had less frequent review meetings.

*Ill-conceived procedures*

Among the problems or limitations mentioned by respondents was the fact that procedures are not sufficiently clear, or more precisely, that they are difficult to understand from a distance when you

don't have access to what's not written down on paper. Several respondents insisted that they were missing certain details to solve problems, details that seemed obvious to people who had been with the company longer.  Newcomers mentioned their limitations about the procedures they had discovered off-line: *"[We're beginning to understand how the company works°, but our unfamiliarity with customers and certain manufacturing procedures block us."* Or: *"We don't have the means to properly express our ideas remotely because we're missing information that has never been passed on to us."*

Survey participants sometimes insisted that procedures should perhaps be designed differently, incorporating a lot of detail or providing hands-on videos, during which users would give some additional information, perhaps comments on their practical application. They also mentioned the absence of team buildings in general and remote meetings conceived in a totally different way: They would not go into the details of projects; However, they would take the time to answer questions or reactions of astonishment expressed by newcomers.

*The manager as a central character*

One aspect of integration seemed fundamental to us. It concerns the manager's behavior, i.e., how the person who has to integrate a newcomer organizes his or her integration. For many respondents, this is the central figure on whom the quality of the integration depends, the one who will act as the interface between the newcomer and the team.  Our survey showed that most (88%) respondents considered themselves integrated when they replied. The remaining cases are all linked to the absence of a clearly designated tutor.

What do integration candidates expect from their tutor (or manager)? Respondents mentioned three important elements: 1. for the manager to make it clear that he trusts them; 2. for him/her to insist that what has been done has been useful, to give signs of appreciation of the work, and generally to encourage the person positively; 3. for the manager to have concrete knowledge of all the company's operations, and to be able to share it. As one interviewee mentioned, we appreciate a manager who tells you: *"Let me explain the organization and procedures in terms of organization...Explain to me what surprised you or what you find hard to understand! "*

*Well-being at work*

This factor came to the fore at the end of our analysis, as it is present in a more or less indirect way at all data levels. The question of well-being in the workplace is a key issue for all stakeholders involved in the transition to RW and, later, the implementation of hybrid operations. Presented by experts, managers, and the company itself as a way of improving employee well-being, new working methods (RW or hybrid) have yet to demonstrate their ability to guarantee this promise. Research on the subject points to several problems, from the sometimes unbearable isolation of remote workers to the difficulty

of establishing a clear separation between private and professional life. While most people who can work remotely appreciate this possibility, it is sometimes difficult to integrate them into this new world. Many of those interviewed used the term well-being at some point in their answers.

When a recruit has a poor grasp of what his/her job description calls for, *"…he doesn't feel at ease with the group, he loses self-confidence and no longer dares to take the initiative"*. The aim here is for managers or institutions to monitor the evolution of the feeling of well-being in the most diverse situations of corporate life. As we saw earlier, integration is a key act, more difficult to master from a distance. It, therefore, requires a great deal of care and attention to ensure that the well-being of the employee concerned is not disrupted.

*Phenomena associated with new generations*

Our interviewees were relatively basic in describing their expectations in terms of integration. Among the items mentioned, the most important was being introduced to colleagues, getting to know them, and knowing what they do (74%). Next comes the desire to have regular follow-ups with the tutor (62%), who should be able to tell the person concerned whether they have followed the company's processes properly and give them practical advice. For 54% of those interviewed, it is also important to be able to talk to colleagues outside the time devoted to working on projects. A description of the company's culture was cited by only 31% of respondents, and very often, it was the processes involved in carrying out the tasks that were mentioned as essential. Moreover, nothing was added about belonging to the group or career prospects within the company.

These responses were certainly influenced by the fact that these employees have limited-duration contracts. However, one might have thought that an important number of respondents would have wondered whether they would be hired after the end of their contract. This very basic description can probably also be explained by the different relationships that the new generation has with the companies where they work (see literature).

Many of the respondents' comments highlighted a lack of patience and high expectations relating to the employing company. These reactions go back to what we saw in the literature section: On the one hand, we have a less pronounced desire for belonging and, on the other, a greater propensity for stress. These aspects will certainly need to be considered when defining an action plan.

## CONCLUSION

*Stress and well-being*

Our research has shown how much the integration process seems to be disrupted in a remote environment. New employees expressed doubts about their effectiveness with the rest of the team but

also felt that it was difficult, if not impossible, to understand procedures without face-to-face exchanges. These situations create a breakup with the quest for well-being at work at a time when this idea is becoming a major requirement. In fact, the importance of a certain level of comfort was very present in all the interviews. Well-being has now become one of the major demands of employees and is often only possible by implementing an effective hybrid system. For the employees, using RW is as challenging as it is a problem since it breaks the codes and procedures they have used up to now. Integration is, above all, a matter of remaining in harmony with one's group, and in this case, one's team, and sharing its values and goals.

*The importance of monitoring new arrivals*

In our research, the major concern of every new recruit is how to make him/herself heard by colleagues without raising too many questions about the quality of his/her current work. This is where the manager's central role comes into play, acting as an intermediary between colleagues and clarifying his or her role and tasks. Secondly, the manager is supposed to act as an interface between the employee and the company. The manager's behavior in managing teams can be decisive, particularly concerning the following actions: 1. Taking care of subordinates and making them understand that they are important people; 2. Speaking sincerely to subordinates; 3. Getting team members to know each other better; and 4. Make procedures better understood.

These actions should help newcomers understand that *"[their] work is valued."* This means *"discussing things with [him/her] regularly."* In addition, most interviewees mentioned the fundamental help that a sincere conversation or quality feedback can bring when one feels in a psychological crisis. These actions increase the new employee's individual performance, which is beneficial for everyone. Similarly, having the opportunity to introduce yourself to new colleagues in a video helps to clarify future relationships. It's a way of informing the colleague about what the new team member is working on and initiating a cooperation process.

While some of the interviewees asked about the company's organizational culture, others (particularly in the second group) asked about procedures: *"When I'm in the company, I don't understand the procedures I use"* or *"I don't know what the procedures are."* In fact, understanding company-specific procedures is similar to what we've already said about integration. They are not simply routines applied automatically but are directly linked to the company's values and vision. They never exist in isolation from what has given the company a certain logic. Integration is a complex thing, where the tacit side is more important than the words. The tacit cannot be replaced by a simple videoconference. Our research shows that in such a situation, integration is partial or takes longer to set up.

When integration is declared to have been successful, it is essentially due to the proactivity of the new employees rather than to the mechanisms put in place by the institutions. We particularly note such

statements as *"The company did not support the new form of work"* or *"At a distance, there was no connection and integration with the group."* The result is a strong expectation for innovative approaches to correcting or overcoming distance. Of course, participants insisted on the importance of face-to-face time, precious moments that had to be fully used. But they also sometimes imagined changing the approach to time spent at a distance.

*Creating new devices*

The analysis shows that the new employees we interviewed were highly responsive. This is what enabled them to cope with the new situation and integrate in 88% of cases. However, we did notice a high level of expectation on the company's part, which is nonetheless considered to be the origin of this change in working methods. For many years, companies have tended to rely more on the proactivity of newcomers than on the use of processing devices. We believe that the transition to a hybrid operation requires companies to change their approach and think about implementing new tools. In our view, this is necessary to avoid losing efficiency, but also to avoid discouraging employees. We have seen that well-being is a fundamental value for these young people (mentioned in the literature but confirmed by our research). In this way, we must avoid provoking hasty departures or nervous breakdowns.

We are convinced that there are plenty of ways to change the approach and define new tools that are better adapted to the new situation: visual presentation of processes with a question/answer section, remote integration team-buildings, open discussions in addition to project meetings, and so on. Of course, when we talk about changes in approach, this often involves training managers or other people in charge of integrating newcomers.

## LIMITATIONS, DISCUSSION, AND NEW AVENUES

The primary interest of our research is to have gathered information on a phenomenon that has been somewhat overlooked. During the pandemic, companies continued integrating new employees who could not benefit from the same process as those integrated earlier. We have seen that the integration process can be longer and more complicated when employees work partly remotely. However, it is worth looking at the integration process itself. Some of the people we interviewed said they considered themselves integrated even though they worked mainly remotely. What kind of integration is this? Probably only professional integration linked to a particular task? But integration can also be understood in various other ways: 1. The ability to anticipate the behavior of other team members; 2. Knowing how to play with procedures, i.e., going as far as possible without getting into

trouble; 3. Understanding the company's values and operating in communion with other company members.

We believe it is essential to better understand what new entrants really expect from their integration, especially in the case of new generations entering the market. There is some evidence to suggest that, in some cases, they may be content to choose a good place to work without too much involvement with the corporate culture and its obligations. We also think it would be interesting to better understand what new generations are obsessed with: climate, well-being, or having time for themselves. And are they prepared to leave and look for other things if these requirements are unmet?

We also regret that we have not yet interviewed managers and executives to discover the difference between their approach, which is essentially that of baby boomers, and that of the new generations.  It will be important to know whether they have new ideas that have not yet been used by the people we interviewed as part of our research. Similarly, with the evolution of technology, new approaches may be proposed in the near future. Who is currently doing this? This is an area we should be keeping a close eye on.

Finally, the data collected, all of which related to the French cultural domain, did not enable us to estimate the impact of national culture on the perception and experience of integration. We would now like to go a step further and compare the reactions of groups from different cultures. Approaches to integration, and RW in general, undoubtedly vary from country to country and from context to context. It would be interesting to better understand how this happens.

## REFERENCES

Antonacopoulou, E. P., & Georgiadou, A. (2021). Leading through social distancing: The future of work, corporations and leadership from home. Gender, Work & Organization, 28(2), 749-767.

Arthur, M. A. (2014). The boundaryless career at 20: Where do we stand, and where can we go? Career Development International, 19(6), 627–640.

Ashford, S. J., & Black, S. S. (1996). Proactivity during organizational entry: The role of desire for control. Journal of Applied Psychology, 81(2), 199–214.

Bailey, D. E., Dailey, S., Leonardi, P., & Diniz, E. (2015). Socializing Remote Workers: Identification and Role Innovation at a Distance. Academy of Management Annual Meeting Proceedings, 2015 (1), 1–40.

Barbichon, G. (1990). Espaces partagés : variation et variété des cultures. Espaces et sociétés, (2), 107-134.

Barmeyer, C. I. (2004). Learning styles and their impact on cross-cultural training: An internationalcomparison in France, Germany, and Quebec. International Journal of Intercultural Relations, 28(6), 577-594.

Baumeister, R., F., Leary, M., R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation, Psychological Bulletin, 117(3), 497-529.

Birkinshaw, J., Bresman, H., & Håkanson, L. (2000). Managing the post-acquisition integration process: How the human integration and task integration processes interact to foster value creation. Journal of management studies, 37(3), 395-425

Bouquet, C., & Birkinshaw, J. (2008). Managing power in the multinational corporation: How low-power actors gain influence. Journal of Management, 34(3), 477–508.

Branicki, L. J. (2020). COVID- 19, ethics of care and feminist crisis management. Gender, Work & Organization, 27(5), 872-883.

Bryon-Porter, C. (2011). Toward a More Convivial Society with Greater Solidarity? Association and Networks Founded on Geographical Proximity in the Postmodern Era. Société, 113(3), 107-118.

Caligiuri, P., De Cieri, H., Minbaeva, D., Verbeke, A., & Zimmermann, A. (2020). International HRM insights for navigating the COVID-19 pandemic: Implications for future research and practice. Journal of international business studies, 51(5), 697-713.

Chao, G. T. (2012). Organizational Socialization: Background, Basics, and a Blueprint for Adjustment at Work. In S. W. J. Kozlowski (Ed.), The Oxford Handbook of organizational psychology (pp. 579–614). Oxford University Press.

Clanché, F., Personeni, G., Renaux, A., Muhla, F., Bastogne, T., & Gauchard, G. (2023). Virtual Reality as Assessment Tool of the Risk of Falls in the Elderly. International Journal of Sensors and Sensor Networks, 11(1), 11-17.

Chevrier, S. (2018). Comment mieux gérer vos équipes multiculturelles. Gestion, 43(1), 72-76.

Cooper-Thomas, H. D., & Burke, S. E. (2012). Chapter 4: Newcome proactive behavior: Can there be too much of a good thing? In Wanberg, C. The Oxford Handbook of Organizational Socialization. Oxford University Press.

De Boer, C., & Delobre, N. (2022). Effets de l'onboarding à distance sur la socialisation organisationnelle : Une étude comparative sur les nouveaux entrants d'une école de management hôtelier. GRH, 2(43), 61–88.

Delobbe, N. (2011). Chapitre 12. Apport de la socialisation organisationnelle aux pratiques de recrutement/sélection pour une meilleure intégration des nouveaux venus dans leur emploi. In In Laberon (dir.), S "Psychologie et recrutement : Modèles, pratiques et normativités." De Boek Supérieur.

Delobbe, N., & De Boer, C. (2022). Chapitre 8— Entrée dans l'organisation et construction de la relation d'emploi : Défis et enjeux contemporains. In Psychologie et Carrières (pp. 139–158). De Boek Supérieur.

Eisner, S., P. (2005). Managing Generation Y, S.A.M, Advanced Management Journal, 70 (4), 4-15.

Harris, H., & Brewster, C. (1999). The coffee-machine system: how international selection really works. International Journal of Human Resource Management, 10(3), 488-500.

Hornyák, J, Fehér,J. (2011). '8 hours rest, 8 hours entertainment, or results of the net generation research in 2010. Retrieved from: http://issuu.com/elteppkoktinf/docs/okt_inf_konferencia-2011/21

Howe, N., & Strauss, W. (2000). Millennials Rising: The Next Great Generation. New York: Vintage Books.

Lanciano, E. (2017). Explorer l'économie des Lucignolo: quelles stratégies institutionnelles et formes d'entrepreneuriat stratégique des PME pour trouver de nouvelles façons d'être grandes? (Doctoral dissertation, Université Jean Monnet de Saint-Etienne).

Louis, M. R. (1980). Surprise and Sense Making: What Newcomers Experience in Entering Unfamiliar Organizational Settings. Administrative Science Quarterly, 25(2), 226–251.

Manago, B., & Krendl, A. C. (2022). Cultivating contact: How social norms can reduce mental illness stigma in college populations. 2022 Stigma and Health.

Mannheim, K. (1938). The Sociological problem of generations. Retrieved from:
http://mediaspace.newmuseum.org/ytjpressmaterials/PDFS/ARTICLES_ABOUT_THE_GENERATION/01_The_Sociological_Problem.pdf

Mayrhofer, U., & Urban, S. (2011). Management international : Des pratiques en mutation (pp. 290-p). 2011 Paris: Pearson education.

Mayrhofer, W., Iellatchitch, A., Meyer, M., Steyrer, J., Schiffinger, M., & Strunk, G. (2014). Going beyond the individual: Some potential contributions from a career field and habitus perspective for global career research and practice. Journal of Management Development, 23(9), 870–884.

Montenero, V., Cazorzi, C. (March 2022). "Virtual management during the Covid-19 era: Changes in leadership and management", International Entrepreneurship, 8 (1), https://doi.org/10.15678/IER.2022.0801.06

Nicholson, N. (1984). A theory of work role transitions. Administrative Science Quarterly, p. 172–191(20), 1984.

Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. Long range planning, 33(1), 5-34.

Prensky, M. (2001). Digital natives, digital immigrants. On the Horizon, 9(5). Retrieved from: http://bit.ly/iqJOwY

Rodeghero, P., Zimmerman, T., Houck, B., & Ford, D. (2022). Please Turn Your Cameras, In Remote Onboarding of Software Developers during a Pandemic. ICSE.

Schein, E. H. (1968, May). The individual, the organization, and the career: A conceptual scheme. Working Paper. Sloan School of Management, Cambridge (Ma.) https://dspace.mit.edu/bitstream/handle/1721.1/48216/individualorgani00sche.pdf?sequence=1

Shin, D., Hasse, V. C., & Schotter, A. P. (2017). Multinational enterprises within cultural space and place: Integrating cultural distance and tightness–looseness. Academy of Management Journal, 60(3), 904-921.

Schroth, H. (2019). Are You Ready for Gen Z in the Workplace? California Management Review, 61(3), 5-18.

Stewart, J., S., Goad Oliver, E., Craven, K., S., Shigehiro, O. (2017). Managing Millennials: Embracing generational differences. Business Horizons, 60 (1), 45-54.

Tapscott, D. (1998/2001). Digital childhood. Budapest: Kossuth Kiadó.

Tolbize, A. (2008). Generational Differences in the Workplace (Research). Research and Training Centre for Community Living. University of Minnesota

Van de Ven, A. H., Angle, H. L., & Poole, M. S. (Eds.). (2000). Research on the management of innovation: The Minnesota studies. Oxford University Press, USA.

Van Maanen, J., & Schein, E. H. (1979). Toward a Theory of Organizational Socialization. Research in Organization Behavior, 1, 209–264.

Vuchkovski, D., Zalaznik, M., Mitręga, M., & Pfajfar, G. (2023). A look at the future of work: The digital transformation of teams from conventional to virtual. Journal of Business Research, 163, 113912.

# THE CIRCULAR ECONOMY IN THE SMART CITY CONTEXT. THE CASE OF THE BENEVENTO'S MUNICIPALITY.

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## ABSTRACT

**Purpose -** The objective of the thesis is to verify how the circular economy model can be applied in a small town in Southern Italy

**Design/methodology/approach -** The study was conducted through the analysis of the results obtained from the first phase of experimentation of the Tarip within the City of Benevento.

**Findings -** The application of the Tarip within the City of Benevento was implemented in two different phases and only in a limited area of the city. The results obtained from this first phase suggest that the application of the Tarip management system, within a small city like Benevento, can lead to enormous benefits both in social and economic terms. The first results, despite being positive, can be considered as a starting point, as the first phase of experimentation was carried out only in a limited area of the city.

**Originality/value -** The Tarip is already widely used in Northern and Central Italy, while Southern Italy still lags behind with only two applications, one in the Sicily region and one in the Puglia region. Bene-vento is the first city in Campania to use the Tarip, therefore, the objective of this study is to verify the benefits that the application of the Tarip would have on the entire city and to be seen as a springboard to reduce the gap between Northern and Southern Italy on these issues.

*Keywords: Smart city, PAYT Circular Economy, Benevento, Polluter-pay, Waste Management, Pay-as-you-throw.*

## INTRODUCTION

The term smart city, in recent years, has become a common jargon term that aligns with a concept of positivity, innovation and well-being. The smart city concept is the evolution of three other models such as Digital city, Intelligence City and Ciber City. The evolution of the concept can definitely be attributed to smart objects, which accompany, on a daily basis, people's lives. The innovative stimulus, both territorial and from public institutions, has led to the launch of programs aimed at the creation of smart cities, which have been the subject of a strong debate fueled by various scholars in various disciplinary fields, such as the sciences social, economics, information and engineering (Vermiglio,

2023). In the last decade, the importance of a direct connection with the territory has been highlighted, assuming that overcoming the problems related to urbanization is connected to the process of technological, economic and social innovation. Over the years since 1970, many theories have been developed that have led to the growth of the smart city phenomenon. An early theory is related to the concept of industrial clusters, which grew exponentially in the mid-1970s (Boeri, 2021). Subsequently, this concept, then evolved in the 1990s, thanks to the theory of industrial clusters (Muller, 2019). In this theory, the production of new knowledge develops on a local scale since it is precisely on a territorial basis that collaborative processes between individuals are created (Porter, 1990). Since the 2000s, two other interesting theories have developed, the Triple Helix theory and the Three T's theory. With the Triple Helix theory, we refer to the relationship between Government, Industry and University as three independent poles that join each other in a process that stimulates and leads to the creation of innovation (Martini, 2011). The three Ts model, on the other hand, dwells on the principle that in order to create and develop innovation, it is necessary to consider three basic elements: technology, talent and tolerance. The smart city phenomenon, therefore, falls within a complex of visions that are based on the importance of giving cities a new measure in social, ethical and environmental terms, related to development and economic growth, but also in issues related to the concept of social innovation, sustainability and well-being (Fasano, 2014). Figure 1 shows a timeline that contrasts the most important events in the birth of the smart concept.
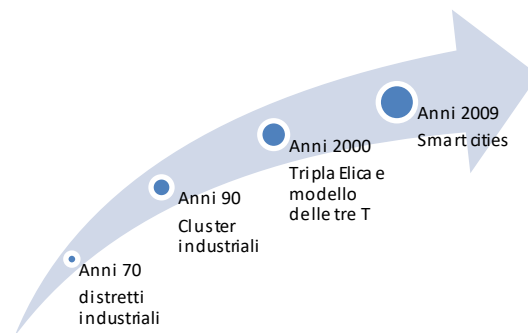


Figure 1. Smart City evolution

The European Commission has tried to give an unambiguous definition of a smart city by including all the main activities and operations that a city that considers itself smart should have and perform. A smart city, then, is a place where traditional services are made easier and more efficient with the use of technology, with the aim of improving the lives of citizens and businesses. The evolution of smart cities has also come about due to social phenomena such as, for example, the worsening quality of life and increased pollution due to constant traffic and growing energy demand. Cities such as Tokyo, Barcelona, London, and many others are examples of what a smart city can be. These cities have written the link with citizens by sharing information and spaces through an ecological network designed for urban planning. The rules that provide the city administration to distribute and transform the urban

center of a smart city are as follows (D'Ambrosi, 2014): sustainable mobility, clean energy through proper waste disposal, ecological network, public green, green buildings, ICT, citizen awareness (Perathoner, 2021). According to a study carried out by the McKinsey Global Institute called "*Smart cities: Digital solutions for a more livable future*" smart cities would bring numerous benefits to the community, one of the benefits is definitely time, in that, time spent with the public administration and the health care system are drastically reduced and used more effectively and efficiently. Safety is one of the benefits of smart cities, in that, it brings with it a drastic reduction in crime and accidents (Mc Kinsey, 2018). Among the di-gial technologies, to make a smart city work at its best, is IoT (Internet of Things). This terminology refers to a paradigm in which everyday objects are equipped with sensors that allow objects to be connected to each other and users to become part of the Internet (Zanella, 2014). The results obtained are usually obtained through the use of machines or software and are used by the community to make decisions on the functioning of the system (Marquez, 2021). Many cities, which have already reached the threshold of smart cities, use various objects to make it more automated, including: smart streetlights, smart traffic lights, smart cars, smart bins. The Internet of Things can be applied on a large scale in all population centers, as, it allows a large amount of data to be obtained at great cost and these data to be processed appropriately in order to make decisions, with the aim of improving the quality of life. This technology is called Bid Data. The purpose of big data analysis is to analyze and create knowledge in a way that gives value to the acquired information so as to offer innovative services in all social fields. They are, therefore, a valuable support to local administrators and make available data and information to understand the changes and emergencies to which cities are exposed. The benefits that a smart city can gain from the proper exploitation of big data are many: efficient use of resources; improved quality of life; and high levels of transparency and openness (Al Nuami, 2015). Eventually, the use of data will become the norm and the sharing of data will increase the transparency of information for all stakeholders, increasing collaboration and communication between various figures and the creation of more services that will increase the tenor and quality of smart cities.

## 1. SMART CITY MODEL

The Smart City concept has now taken center stage in the political arena in recent years. Economist Robert Ernest Hall defines a Smart City as a city that controls and integrates all its critical infrastructure including roads, bridges, tunnels, rails, subways, airports, seaports, communications, water, energy, and even main buildings can better optimize resources and plan preventive maintenance and safety and monitoring aspects, maximizing city services. The model for measuring the smartness level of a city was proposed by Giffinger in his essay titled "*Smart cities Ranking of European medium-sized cities*"

which illustrates the city as something well-functioning in six domains that are built on the set of elements and activities, consisting of independent and aware citizens. The model proposed by Giffinger classifies Smart cities through the following characteristics (Giffinger, 2007): Smart Mobility, Smart Environment, Smart Living, Smart Economy, Smart People, Smart Governance. The six-axis theory brings the smart city concept back into the framework of neoclassical theory on urban and regional development and constitute the first attempt to measure the degree of smartness of cities, and furthermore, to make available to institutions, the possible levers on which to implement it (De Santis, 2007). In Table 2 it is possible to see, in summary, the indicators and their relative key points of the urban development factors proposed by Giffinger.

| Smart Economy | Smart People |
|---|---|
| Innovative Spirit;<br>Entrepreneurship;<br>Economic image;<br>Productivity;<br>Labor market flexibility;<br>Internationality;<br>Transformational skills. | Qualification level;<br>Affinity for learning;<br>Social and ethical plurality;<br>Flexibility;<br>Creativity;<br>Cosmopolitanism;<br>Participation in public life. |
| Smart Governance | Smart Mobility |
| Participation in decision-making;<br>Public and social services;<br>Transparency;<br>Policy perspectives and strategies. | Accessible premises;<br>Accessible internationalization;<br>Availability of ICT facilities;<br>Sustainability, innovation and safe transportation system. |
| Smart Environment | Smart Living |
| Conditions of attractiveness;<br>Pollution;<br>Environmental protection;<br>Sustainable management resources. | Cultural facilities;<br>Health conditions;<br>Individual safety;<br>Quality of housing;<br>Educational facilities;<br>Tourist attractions;<br>Social cohesion. |

Table 2. Giffinger's model

Smart cities have been at the center of the international sustainability debate for years. In 2015, the 2030 Agenda for Sustainable Development incorporated 17 goals that cities must achieve to improve their sustainability. The official launch of the goals was 2016, and cities commit to achieving them within 15 years, that is, by 2030. There are currently 118 cities around the world with smart metrics. These cities

are located around the globe and differ greatly in culture, style, and smart features. The construction of a smart city has as its main focus the physical and technological layers of urban development. For its realization it is important to follow some main steps: study of the city; information gathering; creation of a smart program through PPP models; development of a circular economy system; identify challenges and opportunities; information sharing; creation of strategic plans and creation of digital platforms where the community can interface with the Public Administration (Agrosì, 2022). The use of technology to improve the urban environment such as, for example, the degree of air and water pollution monitoring, construction or renovation of sustainable environments or buildings is called Smart Environment. The city, the point of concentration of most daily activities, is the main place where raw materials are processed and, therefore, also of the transformation of environmental resources and consumption of materials and energy, and is also the place of origin of the environmental crisis globally (Alberti, 1994). The idea of having a smart environment starts in the early 1990s, when Mark Weiser and his colleagues came up with the term *ubiquitous compunting*. The environment surrounding the citizenry opens up to new possibilities for interaction and usability (Friess, 2017). The services that make a city environmentally smart include the following: land knowledge, sustainable urban and spatial planning, green industry, environmentally sustainable society, and waste collection and recycling. For an environmentally smart city, the use of separate waste collection, together with waste recycling, is crucial because it allows the extraction of raw materials with countless benefits in environmental and economic terms. Recycling of waste allows the conservation of natural resources, the reduction of the need for raw materials, minimizes waste, reduces greenhouse gas and toxic gas emissions, and saves water energy.

## 2. SCOPE OF PAY-AS-YOU-THROW SYSTEM

Directive 2018/851/EU, which amended Directive 2008/98/EC, provided for the implementation of a circular economy model, and in particular stipulated that Member States shall use "*economic instruments and other measures to incentivize the implementation of the waste hierarchy*" such as pay-as-you-throw tax schemes, defined by Annex IV-bis as schemes that "*charge waste producers based on the actual amount of waste generated and provide incentives for source separation of recyclable waste and reduction of mixed waste*" (Article 1, paragraphs 4 and 10). The Municipal Solid Waste Disposal Tax (TARI) undergoes a long regulatory evolution over the years.

The Municipal Solid Waste Disposal Tax (TARI) is the tax designed to finance the costs related to the service of waste collection and disposal and is payable by anyone who owns or holds in any capacity premises or open areas likely to produce the same waste. The Municipal Solid Waste Disposal Tax (TARI) is composed of a fixed part, determined concerning the essential components of the cost of the

service, referring in particular to investments for the works and the related depreciation, and a variable part, related to the quantity of waste delivered, the service provided and the amount of management costs, and is divided into the domestic and non-domestic user bands. Regarding the determination of tariffs, two possible alternatives open up:

-   Use of a general method. In this case, for the determination of the tariff relating to each type of user on which to calculate the amount to be borne by it, the municipality will use the normalized method referred to in Presidential Decree No. 158/1999, which relates to the definition of the cost components to be covered by tariff revenues and must be determined with the aim of fully covering (through the revenue derived from the collection activity), all the investment and operating costs of the municipal waste management service. In this case, the local authority will apply a "*presumptive*" tariff that contemplates a taxing mechanism such that the tariff will be established through a presumptive mechanism (in other words, the authority presumes the tax for certain categories of users, citizens or businesses, or for types of waste, urban, special, or special assimilated to urban);

-   Use of a point-in-time method. With pay-as-you-throw programs (also known as unit pricing or variable-rate pricing), residents are charged for the collection of municipal solid waste-ordinary household trash-based on the amount they throw away. This creates a direct economic incentive to recycle more and generate less waste. This charging mechanism will be based, in terms of the costs generated by the service to determine the amount of the fee to be charged to each user, and also on the amount of waste produced by the user.

Pay-As-You-throw (PAYT) is a consideration of a patrimonial nature chosen by the legislature to translate the synallagma of the obligation to pay with respect to the service rendered, in the context of the collection, transportation and disposal of waste produced, the prerequisite for which is the measurement (by weight or volume) of municipal and assimilated waste, delivered to the public service, the application of which is, however, optional and not mandatory.

### *2.1 PAYT Payment Systems*

Payment systems are how communities receive revenues under their pay-as-you-throw programs. PAYT programs are often associated with cities and towns with curbside waste and recycling pickup. Residents are charged by the bag, or by the weight of their trash when they drop it off at the landfill.

The pay-as-you-throw (PAYT) program involves associating the individual user, corresponding, for example, to a household, with the undifferentiated waste it produces and measuring it by introducing a fee calculated in part based on the actual production of waste delivered by that user. The fee is composed of two shares: a fixed fee, which covers the general costs of the service (such as cleaning of streets and public spaces, emptying of bins, management of the collection centre and transport of

waste) and is based on the surface area of the properties and parameterized to the number of family members, and a variable fee, which covers operating costs (such as separate waste of plastic, glass, paper and organic waste) and other costs and is determined based on the conferments (in each case there will be several minimum conferments): the less you confer the less you pay.

The quantity of waste delivered will determine only the variable part of the fee, while the fixed fee is calculated according to the criteria set in Presidential Decree 158 of 1999.

This approach requires that accurate data be recorded at each collection stop. The communities invest in computer equipment or other metering systems that can record information and directly feed it into the solid waste agency's billing system. While this approach allows resident to save money immediately for waste reductions, it can entail more collection time per household to record waste information.

In any case, the tariffs must ensure that municipalities fully cover the costs related to municipal waste and assimilated waste management services.


## 3. TARIP IN SMART CITIES

Waste management is one of the indicators used to measure the smartness of a smart city (Meijer, 2016), and thanks to technology, it is possible to increase the quality of life and the level of services offered to citizens, ensuring increased environmental sustainability and better governance for them. Waste management is a central issue in a smart city that makes it possible to aesthetically improve the city and simplify citizens' lives in terms of both livability and health. The concept of environment in a smart city context covers many issues such as urban greenery, use of green energy, and waste management, which is a serious problem in many cities, especially in metropolitan cities. As per practice in a smart city, the main focus is dictated by technology, and waste management can also be governed through the use of technology. In addition to economic models such as, for example, the circular economy and investment models (e.g., PNRR funds), the use of technology can greatly help a smart city from a waste management perspective. In this respect, technology can help the most, in that, it allows for efficient waste collection, citizen empowerment, and useful data collection with the goal of facilitating waste traceability, as is already the case in the city of Stockholm (Ferreira, 2021). A prime example is the smart dumpster or trash can. These dumpsters are equipped with special sensors that are able to detect their filling status and communicate it to the waste collection managers, thus allowing, at all times, to have a free and available dumpster for the citizenry and, at the same time, allowing logistics to be organized in the best possible way, collecting waste where and when it is needed. Additional technology has been integrated to these bins that allows recognition of the citizen who is placing waste in the bin, either through an app or through a health card reader. These two functions make it possible to regulate the

opening of the dumpsters but also to control the proper behavior of citizens (Mussi, 2020). There are still no systems that can immediately and definitively solve waste management, but the use of technology can certainly lead to a drastic reduction in the misuse of waste, both by entities and citizens. According to a study conducted by Frost&Sullivan, there are five modes of digital transformation designed to create opportunities in the waste recovery and recycling sector (Ran, 2018). RFID technology makes it possible to collect a large amount of data that, through special software, can be processed to improve the waste collection and management process, even assuming reward systems for virtuous citizens, promoting the concept of TARIP. The punctual tariff is a concept that has been finding favor with users in recent times, both at the level of the citizenry and at the level of local government, since, it is possible to apply the tariff on a basis of quantitative counts of waste actually produced by the citizen and the company. According to ISPRA's latest report on municipal waste, there are 1,001 Italian municipalities adopting the point tariff and they are located in northern Italy with 263 municipalities in Veneto; 249 municipalities in Trentino Alto Adige; 203 municipalities in Lombardy; 106 municipalities in Piedmont; 88 municipalities in Emilia Romagna; 8 municipalities in Liguria, 25 in Tuscany, 4 in Lazio, 5 in Abruzzo, and 1 in Sicily and Puglia. The use of technology in waste management is also beginning to expand in Italy, especially in northern Italy, virtuous examples include the use of the smart bin in Lombardy where 13,000 smart bins have been installed in Milan. In Emilia-Romagna, Smart Waste technology has been used, which allows access to waste bins only through user identification that is done through an App (NFC technology) or through a health card (RFID technology). In the city of Lucca, Tuscany, a reward system has been provided to incentivize separate waste collection (Baronchelli, 2020).

## 4. CASE STUDY: BENEVENTO CITY

Benevento is a municipality in southern Italy of 56,386 inhabitants and is the capital of the province of the same name in Campania. The city of Benevento boasts a unique and millennial history having been an important Roman center and capital of the duchy of the same name that constituted, together with the Du-cate of Spoleto, the Longobardia Minor. From a smart city and innovation perspective, according to the CityRank 2022 report, the smartest cities are found in Northern Italy. In contrast, Southern Italy lags behind and at the bottom of the ranking are as many as seven southern cities, including Benevento. Although the city emerges as one of the least smart in Italy, the city of Benevento is one of Italy's provinces, both regionally and nationally, among the most virtuous in waste management and recycling collection. The city of Benevento's waste management company, Asia Benevento Spa, has launched several initiatives to further improve city conditions. One project of considerable interest is the Tarip implementation system. To implement Tarip, through the use of

PNRR funds, the city has planned to use hardware and software instrumentation for IoT (Internet of Things) applications, such as geolocation and transmission of data collected through the use of geo-referenced platforms and fleet management models of waste transport vehicles. The intervention is part of the broader project of activating the punctual tariff in line with the Directives of the Circular Economy Package, No. 851, considered among the most appropriate tools to ensure the proper application of the European hierarchy for waste management, fully responding to the European principles "*polluter pays" and "pay for what you throw away (PAYT)*" (Capone, 2021). The goal of this ambitious project is aimed at the application of the punctual waste tariff in the municipality of Benevento, which Asia Benevento Spa is carrying out in collaboration with the University of Sannio (Unisannio) through synergy with the Department of Engineering of Unisannio. The Tarip experimentation in the Municipality of Benevento aims at the punctual metering of undifferentiated waste, with the goal of pushing citizens to increase separate waste collection as much as possible, delivering only full bags to reduce the amount to be paid. The approaches and systems used are based on the integration of electronic control devices in the "*smart containers or smart bins*" used by citizens for conferring, or on the use of suitable equipment installed at appropriate con-ferment points such as, for example, containers with controlled opening and weight/volume meter. Asia Benevento Spa and Unisannio are shifting the issue of tracking to the bags and mobile collection infrastructure, with the goal of significantly reducing infrastructure costs against a negligible increase in the cost of consumables. To do this, Asia Benevento Spa and Unisannio, plan to integrate electronic devices for identification directly into the bags used for the delivery of RUR, and the detection is carried out by a hardware and software system installed on board each vehicle used for waste collection and capable of identifying, geolocating the bags collected and transmitting this information to a cloud-based system for the association of the bags to the contributors and the analysis of the deliveries. The amount of waste conferred is measured through the predefined volume of bags used by citizens to deliver waste. The bags, labeled through RFID technology, are provided and uniquely associated with each user. The citizen subsequently delivers the bag, which is collected by the operators and poured into the waste collection vehicles. At this time the identification of the bag takes place, thanks to the electronic reading and preprocessing device on the vehicles, which reads and stores the information persistently. The data collected "*in the field*" are, infact, stored in a persistent memory of the device until they are transferred to the server in the cloud via Wi-fi or in real time via GSM/GPRS connection, as soon as the device detects such coverage. Finally, the collected data are also transferred to the municipality or entity's computer system for the purpose of calculating the tariff due. The experimentation was conducted in two phases, the first phase, from September 2020 to January 2021, had as its main objectives those of defining the specifications of the 'smart' bags, i.e., the bags on which to integrate RFID tags and their association to

users, adapting and optimizing the RFID tag reading system already available on ASIA Benevento's vehicles by optimizing the positioning of the UHF antennas, and carrying out a verification of the functioning of the system under real operating conditions with a limited number of users. In this first phase there were 98 participating utilities, located in a ward, divided into: 83 domestic utilities (UD), 11 non-domestic utilities (UND), 4 large utilities (GU). Table 4 shows the initial results of the first phase of the experimentation, conducted using only one means of waste collection. The second phase of experimentation, which took place from April 2021 to November 2021, received as input the results and experiences gained during the first phase and was aimed at a significantly larger audience of taxpayers. In fact, it saw the participation of 1336 users, including 1172 UDs, 164 UNDs and 10 GUs, and had the following main objectives: the development of a new system of point measurement of waste production, the study of automatic bag assignment processes, the verification of the scalability of the infrastructure in the presence of multiple operating vehicles, and the verification of the possibility of transferring the data collected by the vehicles into the SW platform, via Wi-fi hot spot installed in the collection center. A further objective of this second phase was the definition of a system for optimizing the optimal waste collection routes, with the aim of minimizing the distances traveled by the vehicles and, consequently, the collection time, energy consumption and $CO_2$ emissions, with a view to producing a positive impact on the environment and the efficiency of the overall process as well. All the vehicles used in the experimentation have, therefore, proved capable of identifying, day by day, the smart bags conferred by the different users and storing the information acquired and automatically sending it to the management system via Wi-fi connection when they return to the collection center.

## 5. CONCLUSIONS

The introduction of the Pay-As-You-Throw (PAYT) system has many advantages, not just tax, though certainly relevant.

The opportunities are: - meeting the targets set by the European Union (the target of 55% recycling of municipal waste by 2025 or 65% recycling of packaging by 2035); - increasing the percentage of separate waste collection at the local level (with a significant reduction in disposal costs); - counting on an objective calculation of waste collection service costs, with fair tariffs; introducing a "*reward*" mechanism: citizens are rewarded for their efforts to increase the sorting of their waste and, consequently, reduce the production of undifferentiated waste and "*tax fairness*" as an effective application of the EU "*Pay-As-You-throw*" principle; improving the image of the local government because it charges more equitable rates, so each citizen actually pays in proportion to the service requested and used; - changing consumption choices: in territories that choose the PAYT system, large, medium and small companies have begun to market products with less superfluous packaging (e.g.,

products with returnable packaging and products on tap) to pander to their customers' interest in producing less waste.

The winning strategy must be aimed at making citizens more aware of their active role as they contribute, through their behavior, to improving the environment and waste recycling by leading to a reduction in the cost of the disposal service from which they can benefit.

# REFERENCES

Agrosì G. (2022), La Smart City e la città comoda. Una nuova Realtà Futuristica "Smartiana", Mimeris Edizioni, Milano

Al Nuami, E. et al (2015), Applications of big data to smart cities, available at: https://jisajournal.springeropen.com/articles/10.1186/s13174-015-0041-5 (accessed 31 October 2022).

Albertazzi, B. (2021), La gestione dei rifiuti nell'economia circolare. Secondo la direttiva U.E. 2018/851 e il D.Lgs.116/2020, Dario Flacovio Editore, Palermo.

Alberti, M. (1997), La struttura del project financing, Giappichelli Editore, Torino.

Baronchelli, L. (2020), Smart City: soluzioni intelligenti nella gestione dei rifiuti, available at: https://www.lumi4innovation.it/smart-city-soluzioni-intelligenti-nella-gestione-rifiuti/ (accessed 12 January 2023).

Boeri, A. (2021), Strategie e tecnologie abilitanti per PED misti: efficienza tra smart cities e industria 4.0, Ricerca e Sperimentazione, Firenze.

Capone, F. (2021), Le opportunità del PNRR per i servizi di Igiene ambientale nel Comune di Benevento, Atti del Convegno Focus Rifiuti.

Carpenedo C. (2018), I tributi locali nel 2018, Maggioli Editore, Sant'Arcangelo di R. (RN).

D'Ambrosi, I. (2014), Tutto quello che bisogna sapere sulle smart city, available at: https://www.lifegate.it/smart-city-storia (accessed 31 October 2022).

De Giovanni, P. et al. (2023), Strategies for the circvular economy. Circukar districts and networks, Giappichelli Editore, Torino.

De Santis, R. (2007), Smart City: The future city? Economia & Lavoro, Roma.

Fasano, A. et al (2014), Some facts about Smart Cities, Rivista Italiana di Economia Demografia e Statistica, Roma.

Ferreira A., (2021), How smart city is your city? Technological innovation, Ethics and Inclusiveness, Springer, Switzerland.

Fosco M., Limiti E. (2020), Tarip: il nuovo sistema della tariffa rifiuti, Maggioli Editore, Sant'Arcangelo di Romagna (RN).

Friess K. et al (2017), Classification of smart environment scenarios in combination with a human wear-able environment communication using wireless connectivity, available at: https://arxiv.org/pdf/1706.04427.pdf (accessed 8 November 2022).

IFEL (2019), Guida alla tariffazione puntuale dei rifiuti urbani, Roma.

IFEL (2020), La nuova regolazione sui rifiuti urbani. Guida alla predisposizione del PEF secondo il metodo tariffario ARERA, Roma.

IFEL (2021), La diffusione della tariffazione puntuale in Italia nel 2019, Roma.

ISPRA (2019), Rapporto Rifiuti Urbani - Edizione 2019, Roma.

Lytras, M.D. (2023), Future Smart Cities Research: Identifying the Next Generation Challenges, Lytras, M.D., Housawi, A.A. and Alsaywid, B.S. (Ed.) Smart Cities and Digital Transformation: Empowering Communities, Limitless Innovation, Sustainable Development and the Next Generation, Emerald Publishing Limited, Bingley, pp. 1-11.

Marquez F. (2021), Internet of Things, IntechOpen.

Martini, E. (2011), Socializzare per innovare. Il modello della Tripla Elica, Loffredo, Roma.

Mc Kinsey & Company, (2018), Smart cities: Digital solutions for a more livable future, available at: https://www.mckinsey.com/~/media/McKinsey/Industries/Public%20and%20Social%20Sector/Our%20Insights/Smart%20cities%20Digital%20solutions%20for%20a%20more%20livable%20future/MGI-Smart-Cities-Executive-summary.pdf (accessed 30 October 2022).

Meijer, A., (2016), Smart City Governance: A Local Emergent Perspective, in Gil-Garcia, J.R., et al., Smarter as New Urban Agenda: a comprehensive View af 21 Century City, Springer International Publishing, New York, pp. 73-86.

Mirto, P. (2014), Manuale operativo per l'applicazione della IUC, Maggioli Editore, Rimini.

Muller, E. (2019), "Smart cities and cluster", available at: http://www.evoreg.eu/docs/files/shno/Note_evoREG_41.pdf (27 October 2022).

Mussi,G. (2020), La gestione dei rifiuti nelle città intelligenti, available at: https://www.infobuildenergia.it/approfondimenti/la-gestione-dei-rifiuti-nelle-citta-intelligenti.

Oke, A.E., et al. (2022), "Introduction to Smart Cities", Smart Cities: A Panacea for Sustainable Development, Emerald Publishing Limited, Bingley, pp. 13-22.

Perathoner, C. (2021), La smart mobility nell'ordinamento giuridico dell'UE e le potenzialità di sviluppo nelle città europee, Bibliotheck des Wirtschaftsrechts book series - BW, volume 2.

Porter, M. (1990), The competitive Advantage of Nations, Harvard Business Review.

Ran, L. (2018), The Impact of Digital Transformation on the Waste Recycling Industry, available at: https://ec.europa.eu/environment/enveco/resource_efficiency/pdf/studies/issue_paper_digital_transformation_20 191220_final.pdf (accessed 12 January 2023).

Vermiglio, C., et al. (2023), Smart City nella prospettiva economico aziendale, Giappichelli Editore, Torino.

Yadav, H., et al. (2023), Analysing challenges to smart waste management for a sustainable circular economy in developing countries: a fuzzy DEMATEL study, Smart and Sustainable Built Environment, Vol. 12 No. 2, pp. 361-384.

Zanella, A. (2014), Internet of Things for Smart Cities, IEEE Internet of Things Journal, v.1, n.1.

Sitografia

www.arera.it

www.assoambiente.org

www.fondazioneifel.it

www.isprambiente.gov.it

www.mite.gov.it

www.bur.regione.emilia-romagna.it

# DEVELOPMENT OF AN INNOVATIVE E-LEARNING VOCATIONAL MODEL UTILIZING DIGITAL CULTURAL HERITAGE

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## ABSTRACT

Cultural heritage has a vital role to play in higher vocational education. The need to look at the past to understand the present is common among generations, and is rather universal. In 2014, the European Commission invited all stakeholders to progress towards an 'Integrated Approach towards Cultural Heritage', by viewing how public policies at all levels could better be organized to draw out the long-term and sustainable value of Europe's cultural heritage (EC, 2014). According to the Eurobarometer (2017), 88% of European citizens agree that Europe's cultural heritage should be included in the general education curriculum at all levels. The year 2018 was the European Year of Cultural Heritage, dedicated to celebrating Europe's heritage as a rich and diverse mosaic of cultural and creative expressions. The European Year focused on four main pillars: *engagement for heritage, sustainability, protection and innovation.* These pillars created a unique opportunity for education and showed the way for new skills, competencies and sustainable learning. Humankind has always been curious with an enormous desire to see and learn about the cultural identity of different parts of the world. Relying on the four pillars, the current research-paper proposes a new e-learning innovative model for vocational education. The analysis draws in the findings collected in three European countries (Cyprus, Italy and Lithuania) between 2021 and 2022. A mixed research method has been applied to examine digital and cultural heritage competencies among young learners. Putting cultural heritage at the core of a vocational education curriculum, the proposed model contributes to sustainable education, and it is appropriate for formal, non-formal and informal education.

*Keywords: sustainability, cultural heritage, digitalization, vocational education, e learning, sustainable education, sustainable learning*

## 1. INTRODUCTION

Vocational education, like many other sectors in our economy and society, has found remarkable ways to change and adapt during the Covid-19 period. This has allowed the sector to keep offering educational opportunities and learning experiences that both learners and instructors pursue. Since

instruction frequently revolves around in-person experiences with tangible materials, instructors who teach with cultural heritage materials in particular had difficulty adjusting to remote learning. The transition to remote learning for many instructors highlighted how important teaching with physical collections is to their pedagogy, emphasizing the value of place-based learning and the significance of students' interactions with cultural heritage materials. At the same time, many educators devised creative ways to integrate digital cultural heritage resources into their curricula and experimented with alternative ways to modify their courses to support primary source literacy and learning.

Learning through cultural heritage cultivates respect and appreciation for cultural diversity, facilitates intercultural dialogue and contributes to more resilient and inclusive societies. This research study focuses on the utilization of digital cultural heritage content for the development of skills and competences essential for personal and professional development of vocational students. The development of a new conceptual learning model utilizing tangible and intangible cultural heritage is introduced, along with the influence of digital cultural heritage in education. This innovative learning model is based on a combination of tangible and intangible heritage, which enables the protection and perpetuation of cultural heritage through digital cultural heritage. The principle of "learning by doing" is applied as a means of facilitating the active involvement of learners in the learning process (Efthymiou et al., 2021). It also provides the opportunity to learn through concrete experiences and application of what has been learned in a real-life situation.

The proposed learning model takes into account the different needs of learners while adapting to their age, level of knowledge and abilities. This innovative e-learning model has been developed under the Erasmus+ project, titled 'DIGICULT Cultural Heritage: a source of resilience and sustainable learning through digital education'. The ongoing process of assimilation of experience to knowledge, known as Kolb's learning cycle, involves an interaction between action, reflection, experience and abstraction (Kolb & Kolb, 2012). The four stages of Kolb's learning cycle are concrete experience that reflective observation, abstract conceptualization, and active experimentation and the foundations of experiential learning. In general, concrete experience is the time when learners engage in the experience in order to learn. Learners review their experiences through reflective observation. Departing from Kolb's learning cycle from Experiential Learning Theory, the paper proposes an e-learning innovative model, while adopting a pedagogical approach of implementing experiential learning in a digital learning environment for vocational education and training of young learners. The entire effort is part of a broader effort for sustainable education.

The current paper aims at strengthening the digital and technological skills of vocational learners with a specific focus on cultural heritage; and to improve learners' awareness about the impact and use of digital technology. The results of the paper revealed the importance in increasing vocational learners'

resilience by promoting and implementing competences for the digital transformation and the need to maximize digital possibilities, which allow for learning and engagement with cultural heritage in ways that are not possible physically.

The organisation of the paper is the following: the next section provides readers with a review of the literature. The third section, titled 'Research Design and Methodology', explains the research processes and methods employed during the course of the study. Then, section four presents the findings of the study, prior to proposing an Innovative e-learning vocational model in section five. At the end, the paper is summarised with a conclusion.

## 2. LITERATURE REVIEW

Digital skills are driving competitiveness in today's economy. Digitally supported education and training can help to strengthen individual skills and competencies. The Institute for Prospective Technological Studies (IPTS), one of the Joint Research Centres of the European Commission, has compiled a thorough review of national approaches to digital education legislation around the world (Conrad et al., 2017). The European Parliament and the Council of the European Union identified digital competence as one of eight key competences necessary for lifelong (and sustainable) learning in 2006, recognizing the pervasive importance of digital skills at the time (European Parliament and the Council of the European Union, 2006). Since then, the EU has developed numerous Digital Competence Frameworks (Dig Comp, DigCompEdu, DigCompOrg) to assist the development of digital skills in all citizens, educators, educational organizations, and consumers (DigCompConsumers). Four proficiency levels in five domains were developed a) information and data literacy, b) communication and cooperation c) creation of digital material, d) safety, and e) problem-solving, letting people to evaluate their own digital skills and allow comparisons between Member States (Vaikutyt-Pakausk et al., 2018 ).

*2.1. Competencies and Skills*

The Twenty first century does not focus on cognitive skills but on human, digital, and soft skills. It includes competencies that machines and artificial intelligence do not have or do not excel at, but humans do (EPSC, 2017; Microsoft, 2019; Park, 2019; World Economic Forum, 2018). Learners with these skills will be in high demand because they can shape and advance digital transformation (Epaminondas et al., 2022), as well contribute to the general advancement of society and innovation. Furthermore, the ability to manage change, specifically resilience, adaptability, leadership, and flexibility, are valuable long-term skills to develop in order to be prepared for future developments (Hooft et al., 2018).

In 2021, the European Union member states reported the lowest shares of early leavers from education and training. In contrast, the highest shares were recorded in Italy (13%), and Cyprus (10%). The EU Member States have set themselves a target to reduce the rates of early school leavers to below 9% at the EU level by 2030. Sixteen Member States have already met the EU-level target for 2030 for this indicator, including Lithuania (Eurostat 2022). This research study explores the current vocational education system in Lithuania as well as in Cyprus and Italy, in an attempt to understand if there is a need to change the existing vocational education model. The research study supports that a more engaging education model will lead to a decrease of the current dropouts and align with the EU 2030 target.

*2.2. EU Digital Strategies*

The term "digital native" is increasingly being used in public discourse to describe generations of young people who have grown up surrounded by digital technologies. The term implies that young people intuitively understand how to use technology and thus do not require digital education or training. All EU digital strategies in the past decade, Digital Agenda for Europe (2010), Digital Single Market for Europe (2015) and a Europe fit for the digital age (2020) aimed at having every European digital. Research on young people's use of Internet and technology in the Council of Europe Member States is quite limited, but the Eurostat data provides us with some insights into the situation in the European Union. In 2021, 95 % of Young Europeans aged 16-29 years reported using the internet every day. However, the share of young people with basic or above basic digital skills ranges from 93% to 46 % with the EU average standing at 71 %. According to Eurostat 2021, 76% of all young people have performed basic computer tasks such as copying or moving a file or folder (see Fig.1)

Fig 1. Young Europeans and the Internet
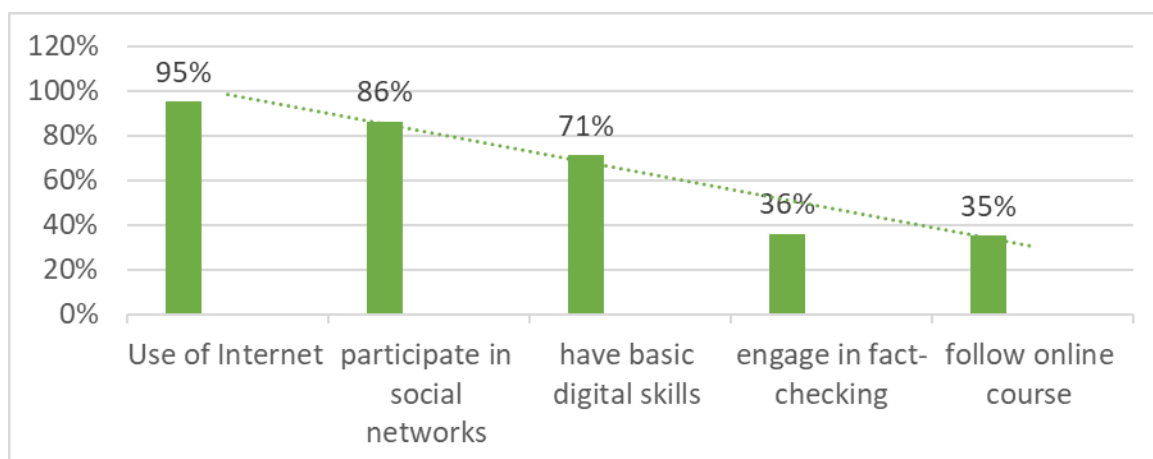


Source: Eurostat 2021

The use of digital technology has increased dramatically over the previous two decades. It has increased human exposure to prolonged screen time, which is becoming increasingly problematic. Digital technology is defined as the use of electronic equipment to store, generate, or analyze data, as

well as to promote communication and virtual interactions on social media platforms via the internet (Vizcaino et al., 2020). Computers, laptops, smartphones, tablets, and other similar devices are all considered electronic gadgets that are utilised for interpersonal connection, virtual communication, and virtual engagement. The pandemic has forced people to rely on digital networks to preserve socio-emotional connections (Kanekar and Sharma, 2020; Epaminondas et al, 2021). Most existing jobs will be obsolete due to technological advancements, and employees will require re-skilling and upskilling in order to expand their competencies and remain employed (Thrassou et al, 2022). The use of technology and digital means in the education system has become increasingly important and necessary in order to meet the changing needs of students and provide them with high-quality education that is accessible,  flexible and sustainable (Efthymiou and Zarifis, 2021; Doukanari et al., 2021).

### 2.3. *Cultural Heritage*

Cultural heritage refers to the behaviors, beliefs, habits, and artifacts that are passed down from generation to generation, forming a community's or society's identity. History, architecture, art, music, literature, and language are all included, as are traditional knowledge, rituals, and festivals (Unesco ,2011). Cultural heritage not only provides individuals and communities with a sense of pride and identity, but it also plays an important role in promoting intercultural discourse, protecting biodiversity, and developing social cohesion. As a result, it is critical to maintaining and conserving cultural heritage for future generations in order to ensure its sustainability and relevance in an ever-changing world. It is currently gaining public and scholarly interest around the world, and its conceptual reach is expanding. Most social scientists emphasize its functions in promoting ethnic, national, and elite interests, but others highlight its creative and counter-hegemonic aspects. Since the globe has entered the age of globalization, cultural heritage has declined. Young people are increasingly unaware of their cultural identity (Tan et all ,2018). Education for Sustainable Development (ESD) towards achieving Sustainable Development Goals (SDGs) will further strengthen the partnership with other sectors, particularly Culture and Science, integrating the implementation of ESD for 2030 (ESD 2030). One of the overarching goals of ESD is to empower young people, who will not only face the issues of unsustainable development in the present, but will also be decision-makers in the future. This paper seeks to investigate the level of youth awareness, attitudes, and practices regarding the tangible and intangible cultural heritage.

The literature review revealed a need for change in the learning methodology of the young learners. Young learners are more likely to be digital natives, meaning they grew up with technology and are more comfortable using it. Digital skills have implications for the future of the European workforce. In an increasingly digital economy, those with strong digital skills will have a competitive advantage in

the job market. This means that youth who lack these skills will be at a disadvantage when competing for jobs. The introduction of the new innovative e-learning model that connects cultural heritage with digital skills is a new learning methodology that reflects the needs of digital native learners with the aim of developing disciplinary and life skills, improving learners' key competences as summarized in the recommendations of the European Commission and the European Council (2020). This           e-learning pathway can motivate learners and young people at risk of leaving school, since it transforms their knowledge and passion for digital tools (such as video games or social media). At the same time, it facilitates a tranformation of their increasing environmental sensitivity into skills useful for their professional future, as part of long-term sustainable education.

## 3. RESEARCH DESIGN AND METHODOLOGY

This research study was conducted in three European countries Cyprus, Italy and Lithuania during the period of 2021-2022. A mixed research method applied combining qualitative and qualitative data in order to get a deeper understanding of the digital and cultural heritage competence of the young learners. The research study investigates among others the available resources and tools that have been in the area of cultural heritage, with the primary goal to utilize intangible and tangible cultural heritage in the existing education system of the three researched European countries. This purposeful data integration enables researchers to seek a more holistic view of their research setting. Purposeful sampling is a technique commonly used in qualitative research to identify and select information-rich cases in order to make the best use of limited resources (Patton, 2002). This entails locating and selecting individuals or groups of individuals who are particularly knowledgeable about or experienced with a phenomenon of interest (Cresswell & Plano Clark, 2011).

The research tools designed for the collection of data was an online questionnaire of 14 questions covering areas such as demographics, familiarity with digital means and level of competence in relation to cultural heritage. The questionnaire targeted mostly youth in private and public vocational schools in Cyprus, Italy and Lithuania, as well as vocational learners at tertiary education and youngsters that have dropped formal education and are more vulnerable in the labor market. The sample collected from the three countries comprised of 820 completed questionnaires from young pupils in the age range of 14-30 years old. In order to include all stakeholders in this research study, 21-targeted semi structured interviews were conducted from the three studied countries, collecting valuable opinions from educators, policy makers and representatives from cultural identities. Data was analysed through conversation analysis and qualitative content analysis. Using mixed method allowed the authors to fully explore the status of the competence of youth in digital cultural heritage

and the readiness of the current education and cultural providers to deliver digitalized cultural heritage, focusing on enhancing the skills and competence of the young Europeans to enhance their employability and entrepreneurial capability.

To identify the demands and examine the existing gaps, the authors used a secondary research method to investigate the situation of each country under study, in respect to the local vocational educational system. Information on cultural heritage subjects incorporated in vocational education curricula was gathered, determining if 14-30s year old young people are digital natives. The identification of the skills and abilities required in vocational education was reinforced by national reports, European data from Eurostat, publications by the European Commission, the OECD, Partnership for 21st Century Skills, and UNESCO studies.

## 4. DATA ANALYSIS AND RESULTS

The questionnaire sample consisted of 239 questionnaires from Cyprus, 458 questionnaires from Italy and 123 Questionnaires from Lithuania. The gender representation of the sample was 50.3% female and 48.1% male. The sample that participated was equally distributed between the genders with a slight predominance of the female gender. Most of the responders resided in their country of origin with insignificant percentages attributed to other origins. The largest percentage of respondents belonged to the 14 -16 age group (58.8% of the sample) followed by the 17-19 age group (41.1%) and lower percentages are to be found in the 20-25 and 26-30 age groups. 87% of the sample had primary to secondary education with a 2.4% -representing dropouts and a 7.3% having University education. Only 3% of people had pursued but never completed university education.

*4.1 Competencies and Digital Means*

The first part of the questions aimed to identify the competencies that young participants valued as most important. The participants in the survey had to select from a list of thirteen competencies that had been identified as the most important ones from OECD, the European Commission and the Partnership for 21st Century Skills (P21, 2011). The data analysis revealed that f*oreign languages, creativity and critical thinking* were valued as the top three important competences for enhancing employability with pr*oblem solving* and *leadership* to follow at 57.9%. All thirteen competencies had a significant percentage of 30% and above that indicates equally importance. The replies of the young participants reveal the high level of awareness of the competencies they need to possess to enhance their employability. (see table 1)

Table 1: Competences Importance in enhancing employability
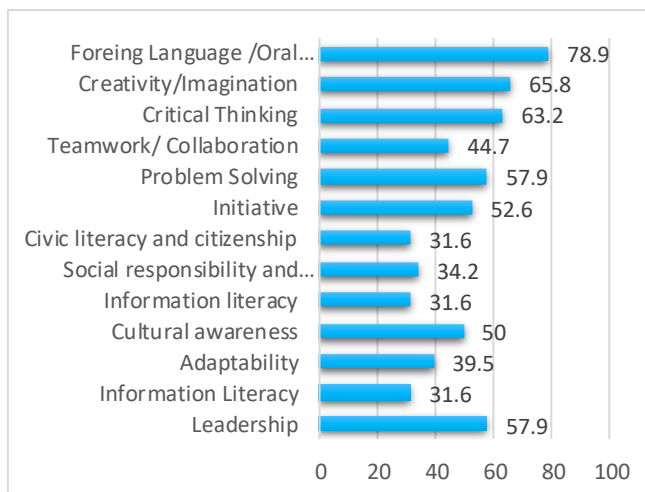


As the research focuses on the digital native's skills, it was important to identify what type of digital devices young people utilize more often. Smartphones are by far the most commonly used digital device among young people with 98.9% of the sample selecting it as first choice. Second in line are Laptops and PCs at 44.9% and tablets at 28.3%. The Mascheroni and Cuman (2014) study supports that in European countries young people are going online by using multiple devices. Young people have shown preferences for using the internet for gaming, chatting and social networking purposes (Durkee et al., 2012). Overall, young people today use a wide range of digital devices for a variety of purposes, and the types of devices they use can vary depending on many socioeconomic and cultural characteristics.

Table 2: Use of Digital means for learning and information purposes
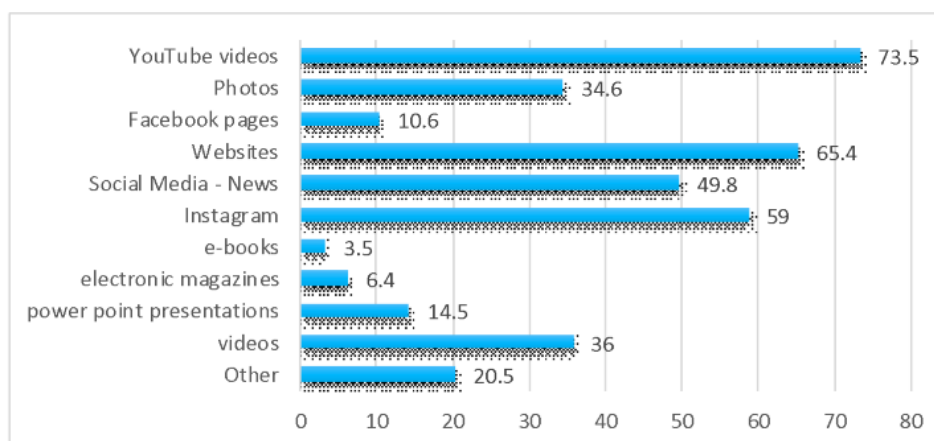


Due to the need for a larger screen and more powerful processing, young people frequently utilize laptops and tablets for studying, gaming, and other activities. Wearable tech, Smartwatches and other wearable devices are becoming more popular among young people for communication, fitness

tracking, and other uses. While older teens (aged 17–19) favor laptops and desktops, younger participants (aged 14–16) appeared to be more likely to utilize tablets or smartphones.

With the advancement of technology and the internet, and the introduction of social media such as Facebook and Instagram affecting the way we live, work, and, more importantly, learn has changed dramatically. Teachers and professors are increasingly incorporating social media into their classes, whether they are online or in person, to engage students and advance their knowledge. In summary, social media is affecting and molding how young learners study and interact today and many educational institutions and organizations have developed online courses and e-learning platforms that provide educational content in a variety of formats such as video lectures, online quizzes, and interactive activities. The data analysis showed that among users between the ages of 14 and 19 who utilize digital methods to get learning and general information, 73.5% of the overall sample ranked YouTube as their top option (see table 2). It is extremely intriguing that e-books and PowerPoint presentations, which are widely used in formal education, are not a preferred digital medium for people between the ages of 14 and 30. A significant result of this research was the requirement to redesign the pedagogical frameworks for online learning in vocational education.

*4.2 Cultural heritage*

UNESCO (2011), classifies cultural heritage into three types: tangible, intangible, and natural. Intangible cultural legacy differs from other types of cultural heritage in that it cannot be seen or touched; examples are language, customs, lifestyle, music, art, dance (Nazri et all , 2011).

Table 3: Identify the following examples in relation to cultural heritage - 1 least relevant - 5 most relevant
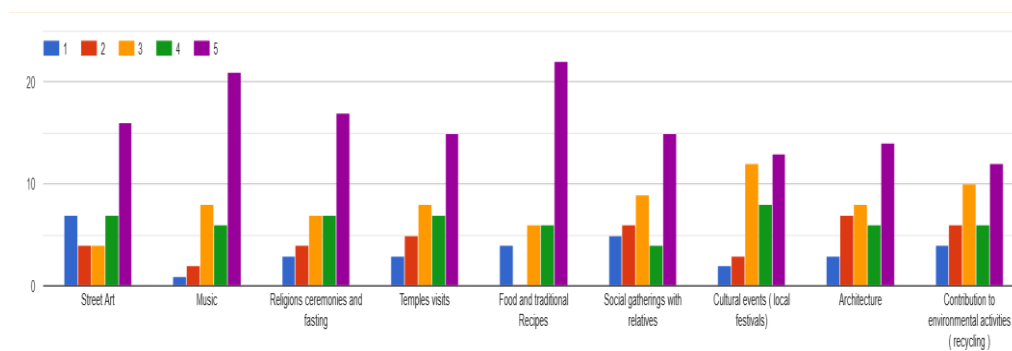


An evaluation of the literature suggests that cultural heritage is an important component of our cognitive knowledge and should be taught in schools.  Among the aims of this study was to determine how knowledgeable the young participants were about tangible and intangible heritage. We can see from Table 3 that there is a lack of awareness of both tangible and intangible cultural heritage, because participants struggled to identify all nine of the assessed cases as cultural heritage. The study's findings confirm the importance of emphasizing cultural heritage in the curriculum because failing to do so puts pride and respect for European identity at jeopardy.

*4.3 Vocational education and digital cultural heritage*

Interviews provided a significant data pool, as the interviewees purposively selected to represent vocational education and cultural providers in the three countries. From the analysis of the data collected, there is a consensus as far as the way cultural heritage is taught in primary education that involves mostly courses such as music, art, geography, and religion; At secondary education there is emphasis on languages, history, economics and civic education. There is a significant gap in how education systems define cultural heritage. From one country and language to another, the terms "culture," "cultural heritage," and "education" were not defined in the same way. There was agreement that "Cultural legacy", which includes both tangible and intangible elements, has an impact on both the past and the present.

From the interview scripts content analysis there was a strong agreement that heritage and vocational education should be seen as tools for sustainable development, rather than just a reaction to the market-based economy. "Cultural heritage is not a "duty" or an encounter with heritage, but a tool that in the right hands can give good results"

Education is still too knowledge-oriented on a day-to-day basis, lacking flexibility. It is in crucial need of rethinking its main goals and methods, including digital cultural heritage matters. The use of digital cultural heritage education may enhance the development of soft skills and competencies necessary to create resilient European youth.

We can also increase learners' resilience in the cultural sector, by holding various thematic workshops in open spaces (e.g. museums, archaeological parks, nature parks, national parks). Workshops will affect the acquisition of knowledge and skills, or their consolidation, and thus learners will be more resilient." Cultural heritage education thus enhances people's ability to become not only fulfilled citizens, able to live in society but also responsible citizens regarding the protection of cultural heritage.  The use of digital cultural heritage education may help to improve the soft skills and competencies required to generate resilient European youth. "Learning about belonging to our society and community access is a must as well as for our cultural identity in order to promote social engagement and active participation in society".

Cultural heritage education improves people's potential to become not just fulfilled citizens capable of living in society, but also responsible citizens in terms of cultural heritage protection. From the interviewees analysis, the authors gathered very strong statements that support the need of the utilization of cultural heritage in education curriculums. The respondents' repetitive feedback on the benefits of using cultural heritage in vocational education provides a strong basis for the need of a new vocational pedagogical model.

## 5. INNOVATIVE E-LEARNING VOCATIONAL MODEL

The suggested "Digicult model"(see fig.2) emphasizes the use of cultural assets to improve skills and competencies in the digital age. Learners develop information, intellectual abilities, and a broader variety of competences on themes such as cultural heritage maintenance and societal well-being by actively experiencing or analyzing cultural heritage. This type of knowledge leads to long-term economic growth initiatives, including chances for respectable work. The suggested model ensures inclusiveness of young learners aged 14 -30, while taking into consideration various educational backgrounds, and motivates them them to engage in Lifelong learning.

Moreover, the competencies revealed by the analysis of the questionnaires and the interviews emphasized the need of enhancing foreign languages, written and oral communication, creativity/imagination, critical thinking, problem solving and the ability to work in a team. The diversity of the audience revealed the need for an innovative curriculum that will take into consideration the individual learning needs as well as creating an environment of inclusivity.  The research revealed that an e-learning pathway is not necessarily 100% digitally delivered as the young learners' digital skills varied from country to country. The need for designing a blended mode of delivery has better results in a vocational learning environment. The model focuses on enhancing skills and competencies in a digital era by utilising cultural heritage. By directly experiencing or analysing cultural heritage, learners gain knowledge, intellectual skills and a wider range of competences on issues such as cultural heritage maintenance or societal well-being. This kind of knowledge leads to sustainable economic growth actions, including opportunities for employment.

Fig.2. *Digicult Model* for vocational education.
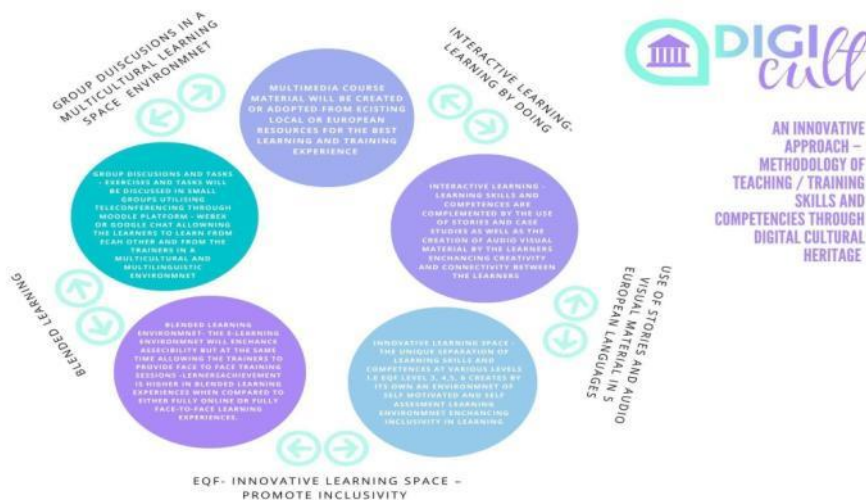
## CONCLUSION

In the public discourse, the term "digital native" is frequently associated with generations of young people who have grown up with digital technologies. The notion implies that young people intuitively understand how to utilize technology and hence do not require digital education or training. All EU digital plans during the last decade, including the Digital Agenda for Europe (2010), the Digital Single Market for Europe (2015), and a Europe fit for the digital age (2020), have attempted to make every European digital native. However, research on young people's usage of the Internet and technology in Council of Europe member countries is limited. Eurostat data provides some insight into the situation in the European Union. In 2021, 95% of Europeans aged 16 to 29 reported using the Internet every day. However, the proportion of young people with basic or above-basic digital skills spans from 93% to 46%, compared to the EU average of 71%. 76% of all young people said they had done basic computer tasks like copying or moving a file or folder. Eurostat (Eurostat, 2021) Digital resources can offer valuable learning opportunities and life-changing experiences for students in a range of academic fields, especially those in vocational subjects like hospitality and tourism.

Such educational opportunities, offer substantial historical and/or cultural background for a discipline, allowing students to get more deeply involved in their studies or even to recognize themselves for the first time as scholars. They can also be located within the broader context of Sustainable Education and Sustainable Learning. Within this framework, the current research-paper developed a new innovative approach and methodology for designing vocational courses. This has been achieved by utilising digital cultural heritage, and focusing on skills and competencies such as critical thinking, creativity and innovation through the learning of Cultural heritage (tangible and intangible). According to the e-learning vocational education paradigm, new digital tools and content are required to engage young learners and develop critical core competencies that will increase their employability and productivity. The use of the model in vocational education, which places more emphasis on interactive outputs than on content, can support the design of interactive labs that cover both the acquisition of new digital skills and the development of knowledge and abilities that will unite young people in Europe through a digital cultural environment.

## ACKNOWLEDGMENT

# REFERENCES

Conrads, J., Rasmussen, M., Winters, N., Geniet, A., & Langer, L. (2017). Digital education policies in Europeand beyond: Key design principles for more effective policies [JRC Science for Policy Report]. EuropeanCommission. https://doi.org/10.2760/462941

Council of the European Union (2020), Recommendation for a Council Recommendation on the 2020 National Reform Programme of Cyprus and delivering a Council opinion on the 2020 Convergence Programme of Cyprus. Available at: https://data.consilium.europa.eu/doc/document/ST-8432-2020- INIT/en/pdf (accessed 20 August 2022).

Cresswell JW, Plano Clark VL (2011), "Designing and conducting mixed method research."2nd Sage; Thousand Oaks, CA.

Cultural Heritage ,UNESCO UIS, Available at: http://uis.unesco.org/en/glossary-term/cultural-heritage (accessed 26 August 2022).

Doukanari, E.; Ktoridou, D.; Efthymiou, L.; Epaminonda, E. The Quest for Sustainable Teaching Praxis: Opportunities and Challenges of Multidisciplinary and Multicultural Teamwork. Sustainability 2021, 13, 7210. https://doi.org/10.3390/su13137210.

Durkee, T. et al. (2012), "Prevalence of pathological internet use among adolescents in Europe:demographic and social factors", Addiction, Vol. 107/12, pp. 2210-2222,http://dx.doi.org/10.1111/j.1360-0443.2012.03946.x.

EPRS. (2019), Lifelong learning in the EU. European Parliament. Available at: http://www.europarl.europa.eu/thinktank/infographics/lifelonglearning/index.html (accessed 16 September 2022).

Efthymiou, L. and Zarifis, A. (2021) Modeling students' voice for enhanced quality in online management education, The International Journal of Management Education, Volume 19, Issue 2, 2021, 100464, ISSN 1472-8117, https://doi.org/10.1016/j.ijme.2021.100464.

Efthymiou, L., Ktoridou, D. and Epaminonda, E. (2021) "A model for experiential learning by replicating a workplace environment in virtual classes," Proceedings IEEE Global Engineering Education Conference (EDUCON), Vienna, Austria, pp. 1749-1753, doi: 10.1109/EDUCON46332.2021.9453966.

Epaminondas, E., Efthymiou, L. and Doukanari, E. (2022) Linking Digital Transformation to Learning Strategies and Pedagogy. Proceedings IEEE Global Engineering Education Conference (EDUCON), Tunis, Tunisia, 2022, pp. 2088-2092, doi: 10.1109/EDUCON52537.2022.9766614.

Epaminonda, E., Efthymiou, L. and Ktoridou, D. (2021) "COVID-19 Contingency Plans: The Impact on Students' Future Choices," 2021 IEEE Global Engineering Education Conference (EDUCON), Vienna, Austria, 2021, pp. 1737-1742, doi: 10.1109/EDUCON46332.2021.9454061.

EPSC. (2017), 10 trends transforming education as we know it. European Political Strategy Centre. Available at: https://ec.europa.eu/epsc/publications/other-publications/10-trends-transforming-education-weknow-it_en (accessed 28 August 2022).

European Commission (2014) Towards an integrated approach to cultural heritage for Europe - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Available at:https://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52014DC0477&from=en (accessed 11 August 2022).

European Commission (2019a), 2nd survey of schools. ICT in education: Cyprus country report. Available at : https://publications.europa.eu/en/publication-detail/-/publication/092c1496-46d6-11e9-a8ed-01aa75ed71a1/language-en/format- PDF/source-99674504(accessed 22 August 2022).

European Commission (2019a), 2nd survey of schools. ICT in education: Cyprus country report. Available at: https://publications.europa.eu/en/publication-detail/-/publication/092c1496-46d6-11e9-a8ed-01aa75ed71a1/language-en/format- PDF/source-99674504(accessed 26 August 2022).

European Commission (2019b), Assessment of the Implementation of the 2011 Council Recommendation on Policies to Reduce Early School Leaving. Available at: https://op.europa.eu/en/publication-detail/-/publication/72f0303e-cf8e-11e9- b4bf-01aa75ed71a1(accessed 2 September 2022).

European Commission/EACEA/Eurydice (2019b), Digital Education at School in Europe. Eurydice Report. Available at :https://op.europa.eu/en/publication-detail/-/publication/d7834ad0-ddac-11e9-9c4e-01aa75ed71a1/language-en/format- PDF/source-105790537(accessed 2 September 2022).

Gordon, Christopher, (2004), Cultural policy in Cyprus – European experts' report.

Hooft Graafland, Julie (2018), New technologies and 21st century children: Recent trends and outcomes. OECD Education Working Paper No. 179. https://doi.org/10.1787/e071a505-en

Intangible Cultural Heritage of Cyprus, Available at: http://www.unesco.org.cy/Programmes-Intangible_Cultural_Heritage_of_Cyprus,EN-PROGRAMMES-04-02-03,EN (accessed 27 April 2022)

Kanekar, A., and Sharma, M. (2020). COVID-19 and Mental Well-Being: Guidance on the Application of Behavioral and Positive Well-Being Strategies. Healthcare 8 (3), 336. doi:10.3390/healthcare8030336

Kolb, A. Y., & Kolb, D. A. (2012). Experiential learning theory. In N. M. Seel (Ed.), Encyclopedia of the Sciences of Learning (pp. 1215–1219). Boston: Springer.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Mascheroni, G. and A. Cuman (2014), "Net Children Go Mobile: Final Report".

Ministry of education and culture, Cyprus pedagogical institute Available at: http://www.moec.gov.cy/ysea/index.html (accessed 29 April 2022)

Nazri A M and Aziz H A ,(2011), "Program pemuliharaan Taiping Bandar Warisan oleh Majlis Perbandaran Taiping," in Pemuliharaan dan pemeliharaan warisan di Malaysia, H. Abdul Aziz, Ed. Pulau Pinang: Universiti Sains Malaysia, 2011, pp. 70– 118

OECD (2019c), Pisa 2018 Results (Volume III): What School Life Means for Students' Lives,    OECD Publishing, Paris, https://doi.org/10.1787/acd78851- en

Overview of the Cultural Heritage of Cyprus Available at: http://www.mfa.gov.cy/mfa/Embassies/embassy_berlin.nsf/All/8E0622E689DD1 260C2257FBF002F5F31 (accessed 28 April 2022)

P21 (Partnership for 21st Century Skills). (2011). Framework for 21st century learning. Available at: www.p21.org/our-work/p21-framework ( accessed 26 April 2022)

Park, C.-Y, (2019), Lifelong learning and education policies to capture digital gains: The future of work and education for the digital age [G20 insights]. Think20 Japan. Available at: https://www.g20-insights.org/policy_briefs/lifelong-learning-and-education-policies-to-capture-digital-gains/  (accessed 28 April 2022)

Patton MQ, (2002), Qualitative research and evaluation methods. 3rd Sage Publications; Thousand Oaks, CA

Röll, V. and Meyer, C. (2020) Young people's perceptions of World Cultural Heritage: Suggestions for a critical and Reflexive World Heritage Education, MDPI. Multidisciplinary Digital Publishing Institute. Available at: https://www.mdpi.com/2071-1050/12/20/8640 (accessed: April 22, 2023).

Shui Kau Chiu, (2019), Innovative experiential learning experience: Pedagogical adopting Kolb's learning cycle at higher education in Hong Kong, Cogent Education, 6:1, 1644720, DOI: 10.1080/2331186X.2019.1644720

Tan SiowKian, Tan SiowHool, Kok YonSin, and Choon ShayWei, (2018), " Tourism Management" Vol. 67 pp376 – 387.

Theocharous, A, (2020), Vocational education and training for the future of work: Cyprus. Cedefop ReferNet thematic perspectives series. Available at : http://libserver.cedefop.europa.eu/vocationalelib/2020/vocational_education_trainingfuture_wor k_Cyprus_Cedefop_ReferNet.pdf (accessed 28 April 2022)

Thrassou, A., Vrontis, D., Efthymiou, L., Uzunboylu, N. (2022). An Overview of Business Advancement Through Technology: The Changing Landscape of Work and Employment. In: Thrassou, A., Vrontis, D., Efthymiou, L., Weber, Y., Shams, S.M.R., Tsoukatos, E. (eds) Business Advancement through Technology Volume II. Palgrave Studies in Cross-disciplinary Business Research, In Association with EuroMed Academy of Business. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-07765-4_1.

UNESCO (2011), Preparing world heritage nomination, 2nd ed. Paris

Vaikutytė-Paškauskė, J., Vaičiukynaitė, J., & Pocius, D, (2018), Research for CULT Committee -Digital skills in the 21st century. IPOL, European Parliament. Available at:http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2018)617495 (accessed 28 April 2022)

Vizcaino, M., Buman, M., DesRoches, T., and Wharton, C. (2020). From TVs to Tablets: the Relation between Device-specific Screen Time and Health-Related Behaviors and Characteristics. BMC Public Health 20 (1), 1–10. doi:10.1186/s12889-020-09410-0

Vrasidas, Charalambos (2015), The rhetoric of reform and teachers' use of ICT. In: British Journal for Educational Technology 46(2), 370–380. Available at https://www.deepdyve.com/lp/wiley/the-rhetoric-of-reform-and-teachers-use- of-ict-7QBB0ydJSU (accessed 28 April 2022).

# EXPLORING THE SKILLS GAP IN TOURISM AND HOSPITALITY: TOWARDS A NEW CLASSIFICATION OF SKILLS, COMPETENCIES, AND JOB POSITIONS

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## ABSTRACT

The recent pandemic of COVID-19 has revealed once more a chronic problem in the Hospitality industry concerning a labor shortage and skills scarcity. Departing from this realization, the purpose of the current empirical paper is twofold. First, it investigates the implications of skills scarcity in the hospitality industry and possible employment trends. Second, the study explores current and future needs, including new job descriptions to match the expectations of the post-Covid-19 era in the hospitality sector. The analysis draws on the findings collected in 200 hospitality organizations through in-depth interviews. The study's findings indicate that certain positions suffer from chronic skill deficiency, causing difficulties in service quality and everyday operations. Also, the findings enabled the development of a new classification of skills, competencies, and abilities, as well as possible new positions and roles.

*Keywords: skills scarcity, hospitality industry, new job roles, new skills, transferable skills, hospitality employment trends*

## INTRODUCTION

The hospitality industry is labor-intensive and highly interactive (Tanizaki et al., 2019). Unlike the manufacturing and online sectors, hospitality employees constitute an inseparable product component. Some commentators suggest that employees and customers are the product themselves (Efthymiou et al., 2020). This is why hospitality providers worldwide invest much money and time in finding the proper channels and tools to recruit and retain employees with the right qualifications. However, when hotels can hire skills and intellectual capital appropriate to the level, the quality of service could be improved, causing further implications on customer satisfaction, employees' morale, and hotels' reputation. Recent studies report a significant skills gap at multiple levels within

organizations. For instance, Capranos and Magda (2023) report that out % of the 600 human resources professionals surveyed, 69% believe their organization has a skills gap. This percentage is 14% higher compared to 2021. Therefore, not only does the skills gap exists, but it also widens further.

The scarcity of skills is attributed to several factors. For example, one of the reasons concerns an ongoing labor shortage. In hotels, the role of human resources is significant; therefore, the chronic labor shortage severely impacts companies and their customers (Yakavenka et al., 2023). The labourLabor Shortage is attributed to various reasons, including demographic shifts (Eurostat,2020), social changes (Efthymiou et al., 2024), poor employment structures, long shifts, exhausting working conditions (Efthymiou, 2010), even an aversion of workers to the nature and requirements of hospitality work (Deschênes, 2022). Moreover, the recent pandemic of COVID-19 has significantly disrupted the hospitality industry, causing closures, layoffs, and reduced business operations, further influencing employee retention dramatically. Such challenges and stressors contribute to a chronic labor shortage in the hospitality sector.

Another factor contributing to skills scarcity is the negative perception of the hospitality sector among graduates and professionals, including a need for more awareness about the diverse career opportunities it offers. This phenomenon results in a limited talent pool, while Tourism and Hospitality employers increasingly demand skilled labor (Lacher & Oh, 2012). At the same time, it is not surprising that labor turnover remains high, even during the peak season. Also, the sector is selected for short-term, opportunistic job openings rather than a successful career-development path with access to skill-enhancement opportunities. In the long term, hospitality work needs to improve employee retention as high labor turnover makes it challenging to maintain skilled and experienced workers.

Moreover, within this context, skills are classified under specific categories. The classification includes vertical mismatch and horizontal mismatch, and over-skilling and under-skilling of workers. The vertical mismatch is the discrepancy between formal education and job requirements, measured against specific benchmarks. Horizontal mismatch occurs when there is a discrepancy between the field of education and specific job requirements. Skills classifications are essential since the evolving nature of the hospitality sector requires stakeholders to adapt to new employment requirements, regulations, and novel practices. Also, new positions emerge in the sector, calling for new types of skills, educational content, and training requirements.

Consistent with the above, the current study explores skills shortages to identify the current and future needs in the hospitality industry. The study examines the implications of skills scarcity in hospitality work. In addition, it explores possible new skills and competencies, including new positions and roles. The paper is essential to hospitality organizations, students, graduates, and

educators who must adjust their curricula according to industry needs. The analysis draws on the findings collected through in-depth interviews with 200 Human Resources managers in the Hospitality sector. The paper's organization is the following: immediately after the Introduction, the analysis reviews skills Shortage and classifications. Then, a section presents and discusses the study's research design. After that, the analysis presents the study's findings prior to summarizing with a concluding discussion.

## LITERATURE REVIEW

In a labor-intensive and highly interactive sector like hospitality, the scarcity of skills considerably influences the quality and everyday operations. Recent studies report a significant skills gap at multiple levels within the hotel sector and in different skill areas. For instance, a study reveals a need for green skills among young hospitality management graduates (Srivastava et al., 2023). Likewise, Capranos and Magda (2023) report that out % of the 600 human resources professionals surveyed, 69% believe their organization has a skills gap. This percentage is 14% higher compared to 2021. Therefore, not only does the skills gap exist, but it also widens further, and it is also identified in a wide range of skill areas.

The provision of available skills is limited for several different reasons. For example, the firms in the Tourism and Hospitality sectors are challenged by a persisting and ongoing labor shortage. While travel and tourism are on the rise due to increasing global prosperity, there are continuously fewer hospitality workers available since the demand for workers exceeds the available supply. Labor shortages can arise due to factors such as rapid industry growth, changes in labor market dynamics, demographic shifts, skill gaps, or insufficient workforce development programs. Likewise, in the case of Tourism and Hospitality, the labor shortage is attributed to a variety of factors, including a country's aging population (Eurostat,2020), social changes (Efthymiou, 2018), unattractive wages and benefits (Nain, 2018), changes in employment relationships and structures (Deschênes, 2022), long shifts, exhausting working conditions, non-traditional work hours (Elshaer's and Marzouk's, 2019) and lack of work-life balance (Efthymiou, 2010). As a result, employers struggle to recruit and retain employees with the necessary skills and qualifications to meet their needs. Also, during the recent pandemic of COVID-19, several Tourism and Hospitality organizations remained closed for long periods. Therefore, workers sought opportunities in sectors less affected by the crisis and considered more resilient.

Also, the industry suffers from a negative perception and a lack of awareness about the diverse career opportunities it offers. Many individuals must pay more attention to hospitality as a long-term career option, resulting in a limited talent pool. Additionally, the industry's high turnover rates and

demanding work environments often deter potential candidates from pursuing hospitality careers. The study by Lacher and Oh (2012) supports that tourism employers increasingly demand skilled labor. In a dynamic and technology-driven industry, businesses are recognizing the value of employees who can effectively leverage technology to enhance guest experiences, streamline operations, and drive business growth. Consequently, there is a greater emphasis on recruiting and retaining individuals with the necessary technical skills and the ability to adapt to technological advancements.

The literature recognizes the need for individuals to continually acquire and enhance their skills to adapt to changing job requirements and remain competitive in the job market. It is imperative to understand the skills required for employment in the hospitality industry, both from the perspective of educational institutions and the perspective of the students preparing to work in the service industry. Educators must nurture students so that they are ready and able to make a positive contribution. To remain competitive, hoteliers are looking for a good mix of management and operational skills, but they also expect graduates to have a professional attitude and mindset (Sharma et al.; R. 2019). Sondermann et al. (2019) and Sousa and Wilks (2018) highlight the need for skill development in the context of labor market evolution. The labor market is influenced by various factors, including technological advancements, globalization, demographic shifts, and changing economic conditions. These factors contribute to the emergence of new industries, the transformation of existing ones, and the creation of new job roles. The hospitality industry plays a crucial role in shaping the academic curriculum. Although universities can change the curriculum, affiliated institutions rely on the accreditation process to influence content design and implementation (Oktadiana & Chon, 2017). Despite higher education institutions' efforts to lead the way in setting standards, hospitality educators typically rely on industry leaders for the skills a graduate should possess to be successful in the workplace (Kay & Russette, 2000).

Nonetheless, training focuses on preparing graduates with foundational solid industry knowledge and places equal emphasis on developing soft skills and behavioral competencies. The concept of employability has changed according to the needs of the industry, customers, society, and the economy. Various models of employability have been developed and introduced by different renowned scholars. In these models, technical skills and personal characteristics have been given equal weight. "Employability" is not just about obtaining jobs (Atkins, 1999). Omar et al. (2012) extracted data and information from 300 online job advertisements from the electronic database of a reputable job portal (www.jobstreet.com.my) and attempted to analyze the skills in higher demand. The study found that most recruiters prioritized qualifications over academic excellence. Employable skills, or transferable skills, are the skills that help achieve the level of employability required to stay

in the same industry and avoid becoming unemployed. Transferable skills are the ones that a person can learn, unlearn, and relearn in order to become employed. There is a need to identify the advanced skills and qualifications needed by the workforce in the 21st century to promote industry growth, workforce professional growth, societal growth, and economic growth (Dhaliwal et al., P. 2020).

The Shortage of skilled workers in the hospitality industry has far-reaching consequences. First, it affects the quality of services provided to guests. A shortage of skilled labor can lead to a degraded customer experience, resulting in dissatisfied guests and damaging a brand's reputation. It can also affect the industry's ability to meet changing customer expectations and adapt to new trends, ultimately impacting competitiveness. The skills shortage also strains existing employees, who must manage increased workloads and responsibilities. This can lead to burnout, lower job satisfaction, and a higher turnover rate. Working like a vicious cycle, such conditions result in low employee retention. Also, a recent study reports that a significant challenge in retention is the ability to offer flexible work environments; provide competitive compensation and benefits; and update each employee's skills to fit emerging roles (Capranos & Magda, 2023). Traditionally, the hospitality industry suffers in all three areas due to its inability to offer flexible work during peak seasons. In contrast, compensation and benefits seem lower than in other industries.

Moreover, training also plays a role in retention and skills acquisition. A recent study by Xue et al. (2022: 72169) concludes that training in hotels 'improve[s] employee attitudes toward hotel management, improve work efficiency, increases retention, and solves the problem of personnel shortage during the post-pandemic period. However, the constant need for training and development to fill skills gaps puts additional strain on limited resources and impacts operational efficiency. By addressing the underlying causes, such as negative perceptions and limited awareness, and implementing comprehensive solutions, including education, training, collaboration, and technological advances, the sector can overcome this pressing problem. Fostering a skilled and motivated workforce will improve the guest experience and contribute to sustainable growth in the hospitality industry.

**Skills Shortage and classification**

While discussing the reasons contributing to skills scarcity, it is also essential to discuss how skills are classified and categorized. Eurostat (2016) provides a classification of 'micro-skills mismatch. The classification includes vertical mismatch and horizontal mismatch, along with the analysis of over-skilling and under-skilling of workers. Vertical mismatch refers to the discrepancy between the formal education of individuals and the requirements of their jobs, measured against a benchmark. It occurs when individuals are either overqualified or underqualified for their current positions in terms of educational attainment. Overqualification implies that an individual possesses more qualifications

than necessary for their job, while under-qualification means that they lack the required level of education. Horizontal mismatch occurs when there is a discrepancy between the field of education of workers and the specific job requirements they face. It refers to situations where individuals work in occupations or industries that are not directly related to their area of study or expertise. This type of mismatch highlights a gap between the skills acquired through education and the skills demanded by the labor market. Over-skilling refers to a situation where workers possess skills, qualifications, or educational levels that exceed their current job requirements. Over-skilled workers should be more utilized in their roles, leading to lower job satisfaction and reduced productivity. Under-skilling, on the other hand, refers to workers lacking the necessary skills, qualifications, or educational levels required for their job. This can lead to reduced performance, limited career progression, and potential difficulties adapting to changing job requirements. The significance of how job requirements are defined when measuring skill mismatch is highlighted by Pellizzari and Fichen in their 2017 study. The researchers utilized data from the Survey of Adult Skills (PIAAC) to compare self-reported mismatch and the realized matches approach.

Pellizzari and Fichen's findings indicate a notable difference in the results obtained from these two approaches. When using the self-reported mismatch approach, most workers are considered over-skilled, implying that they perceive themselves as having more qualifications or skills than required for their jobs. However, when employing the realized matches approach, a different picture emerges, with a higher percentage of workers being classified as well-matched, meaning their skills align with the actual requirements of their jobs.

This disparity suggests that individuals' self-perceptions of their skills and job requirements may sometimes align with objective measures or external benchmarks. It emphasizes the importance of considering the objective match between skills and job requirements when assessing skill mismatch rather than relying solely on individuals' self-assessments.

The current Hospitality labor market is experiencing both cyclical recovery and structural transformation driven by various factors such as post covid-19 era, demographic trends, advancing digital technologies, automation, and changes in the labor market. In this context, hospitality businesses increasingly highlight the limited availability of skills as a significant obstacle to corporate investment and growth. This Shortage of skilled workers has already negative impacts on productivity and hinders the ability of the hospitality sector to innovate and adopt new technological developments.

CEDEFOP (2015,2016, 2016b, 2018) attempted to isolate "genuine" shortages in a series of studies, characterized as recruitment bottlenecks that emerge when employers offer competitive starting salaries to potential hires, resulting in claimed shortages caused by wage offers below the market rate

competitive levels. Based on the Eurobarometer Flash Survey 304, these analyses demonstrate that whereas 47 percent of respondent enterprises perceive challenges in finding graduates with appropriate skills, the proportion of employers encountering actual shortages is substantially lower at 34 percent (McGuiness et al., 2017).

## RESEARCH DESIGN

The study's fieldwork included 200 semi-structured interviews with hotel managers in Cyprus. The sample was located through Ernst and Young Cyprus network. Ernst and Young (EY) sent a cover letter to all participants. Then, telephone calls were made to explore potential participants' intentions. The researcher of Ernst and Young (EY) participated in the collection of findings and appeared as a co-author in the current paper. This work is part of a broader project (INTEGRATED/0918), co-funded by the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation. The research utilized the INtelligent platform for providing STaffing And Training in the Hotel Industry (INSTANT) to gather responses from various establishments within the hotel industry.  The INSTANT project is part of the RESTART 2016-2020 programme, in which the authors of this paper participate, along with other partners, like Ernst and Young, EY, https://instant.com.cy/):

The managers participating in the study work in 5-Star Hotels (18%), 4-Star Hotels (39%), 3-Star Hotels (13%), and Agrotourism establishments (10%). Additionally, responses were gathered from other establishments (20%), such as Class B Hotel Apartments, boutique hotels, 1-Star Hotels, Class A Hotel Apartments, Class C Hotel Apartments, and Traditional Houses/Apartments. The study's sample is representative since it accounts for 25% of the Hospitality sector in Cyprus. The interviews aimed at exploring the current industry conditions, including employment, recruitment, hiring, and skills requirements. Since the study took place amidst the restrictions imposed by COVID-19, interviews were virtual. The research instrument enabled researchers to deepen their understanding based on participants' expressed perceptions, opinions, and experiences and from non-verbal responses, such as facial expressions or body language. For the collection and analysis of findings, the QUALTRICS platform was utilized. Qualtrics is a widely used and reputable platform that helps researchers collect, analyze, and derive insights from survey data efficiently. For the semi-structured interviews, data were analyzed by the MAXQDA software program designed for computer-assisted qualitative data. Finally, all research ethics requirements have been considered since all participants and their organizations remained anonymous and confidential.

## PRESENTATION AND ANALYSIS OF FINDINGS

Exploring the industry's future needs in terms of job positions and skills is important as it contributes towards stability and healthy growth. Also, a new classification of skills, positions and competencies reflects the industry's evolving demands and changes; it informs formal education; promotes specialization and career advancement; and enhances service quality. In addition, identifying new needs help organisations adapt to the shifting landscape while contributing to sustainable development (Liu-Lastres et al., 2023; Efthymiou et al., 2023). The following analysis, presents the study's findings, starting with the future needs for job positions.

*Future needs for job positions and skills*

As discussed earlier, the evolving nature of the hospitality sector requires stakeholders to adapt to new regulations and practices to maintain competitiveness. As a result, new positions are emerging in the sector to address specific needs. Concerning the next three years, the respondents indicated that the positions with the highest demand in the hospitality industry would be Room Maids (21%), Waiters (14%), General Cleaning Staff (10%), and Hotel Receptionists (8%), as presented in Figure 1.
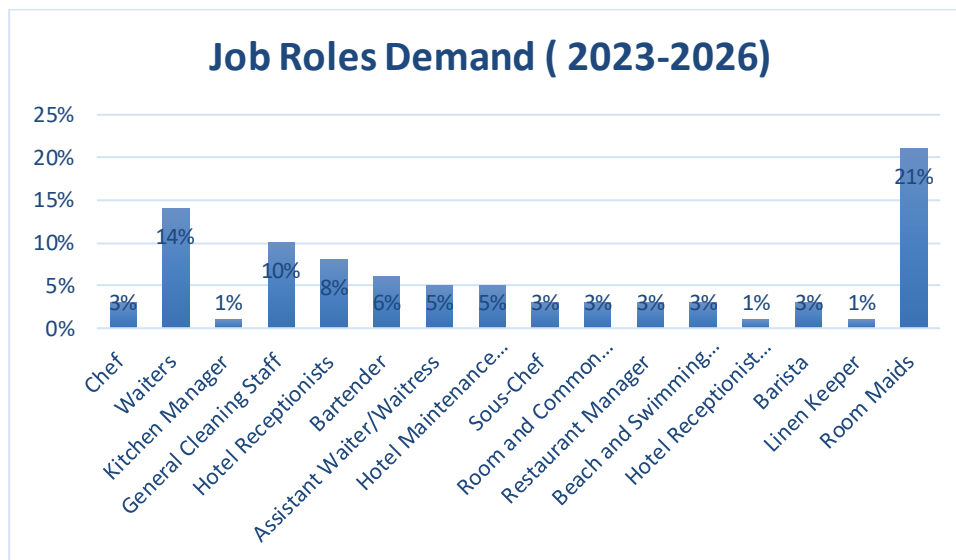


Figure 1: Job Roles Demand for the period 2023 and 2026

The positions that followed are the Bartender (6%), Assistant Waiter/Waitress (5%), Hotel Maintenance Technician (5%), Sous-Chef (3%), Room and Common Areas Maintenance Worker (3%), Restaurant Manager (3%), Beach and Swimming Pools Maintenance Worker (3%), Chef (3%), Barista (3%), Housekeeper Supervisor (2%), Bar Manager (1%), Linen Keeper (1%), Hotel Receptionist Supervisor (1%), and Kitchen Manager (1%).

A more detailed analysis of the positions revealed through the INSTANT project, along with their requirements, can be categorized into the following new job profiles:

- Health & Safety and Quality Officers: With an increasing focus on safety and quality standards, these roles ensure compliance with regulations and implement measures to protect the health and well-being of guests and employees.

- Staff Etiquette & Customer Care: These positions aim to enhance the customer experience by training staff in etiquette, customer service skills, and resolving customer complaints.

- Improving Staff Performance when Working Under Pressure: This role provides training and support to help staff perform effectively in high-pressure situations, such as during peak times or challenging circumstances.

- Improving Managers' Skills to Manage Teams Effectively: This position emphasizes enhancing managerial skills to effectively lead teams, promote teamwork, and optimize staff performance.

- Team Building for Optimal Business Performance: This role organizes team-building activities and initiatives to foster collaboration, improve communication, and enhance overall business performance.

- Emotional Intelligence & Effective Communication: This position emphasizes training staff to develop emotional intelligence, empathy, and practical communication skills, enabling them to understand better and connect with guests and colleagues.

- Time Management & Multitasking: With the fast-paced nature of the hospitality industry, these roles aim to train staff in effective time management techniques and multitasking abilities to ensure efficient operations.

- Staff Resilience & Wellbeing: This position promotes employee well-being, resilience, and work-life balance through training programs, employee assistance programs, and wellness initiatives.

- Latest Hospitality Digital Technologies: These positions involve managing and implementing the latest digital technologies, such as customer relationship management (CRM) systems, online marketing tools, and data analytics, to enhance marketing and operational efficiency.

- Diversity & Inclusion: With an increasing focus on diversity and inclusion, these positions aim to promote a diverse workforce and foster an inclusive environment within the hospitality industry.

*Recruitment and Selection*

All hotels have challenges in recruiting employees for specific hotel positions. They target potential employees and talent from the broader European labour market. Cypriot hotels collaborate with agencies overseas to locate possible workers. They publish advertisements in Greece, Bulgaria and Romania; host career fairs abroad; conduct interviews in these locations and use social media to

promote the hotels regionally. In terms of genders, the responders indicated that the demographics of their workforce is most of the time equal, with 50% being male and 50% female.

The attrition in Cypriot hotels is usually between 50 and 60% annually. The covid-19 has also had an impact on the attrition levels in the hotel industry, which has been due to restrictions and standards by the authorities. This development is part of a broader phenomenon, also known as 'The Great Resignation' or the 'Big Quit', or the 'Great Attrition', and captures the enormous rate of resignations among workers since 2021 (Cook, 2021). 'This trend was first noticed in the spring of 2021 and continued to grow in the second half of the year, shortly after the economy moved toward recovery from COVID-19 and a climbing number of jobs were made available' (Liu-Lastres et al., 2023: 236). Arguably, the hospitality is the hardest hit by the Great Resignation.

*Industry Challenges and the impact on the Labour Market*

Tourism has become an essential industry in national economies within different nations, in which its percentage of regional employment has become substantial, along with its development capacity and introduced significance. However, due to the industry's widespread exposure across nations, its continued steady expansion is susceptible to outside forces. There are some similarities among the difficulties the sector must overcome in different regions: According to out responders, pay rates in the hospitality and culinary industries are significantly lower than the national median rates, and seasonality variance is a crucial aspect of the tourism services provided. However, it is essential to remember that certain states' tourism has a different taste and consideration. Also, whereas Greece and Spain have become two of the most well-liked vacation spots on earth, the Czech travel industry is primarily of the urban variety, with spa travel also playing a significant part and is not as affected by seasons. There is a significant amount of grey labor and external labor (mainly transient foreign workers). All three nations have a heavy weighting in favor of small businesses, many of which are family-owned. However, mergers and acquisitions have increased in popularity recently, particularly in Spain. Overall, one may recognize two characteristics of sectoral developments: tradition's cultural feel and modernization's technological influence. Spain's tourism profits, which were initially relatively high, rose 9–10% for several years.

In contrast, growth in Greece, whose receiving numbers were low, was above 10%. With the most significant number of visitors after France, Spain rose to second position amongst European vacation spots due to the growth of previous years. Greece came in at number thirteen in a list of most visited tourist attractions. With a substantial expansion from 2010, tourism's impact on Spain's GDP peaked 2010 at 12.1%. The tourist industry in Greece made up about 8% of the country's GDP. The liberalization of frontiers and people's growing interest led to a sharp rise in the number of foreign tourists visiting the Czech Republic and tourism-related revenue. Different destinations have

benefited from the liberalization of boundaries with the interest of several foreign tourists in post-communist countries. The subsequent time frame (starting was characterized by a fall in the volume of visitors after the original demand was met. However, the Czech Republic showed similar rates, ranking ninth amongst all European nations and having the second-highest foreign immigrants amongst central and eastern European nations. Although there are numerous issues facing the industry, the following are especially significant because they directly impact work and how it is perceived: a lack of qualified workers, inadequate customer service, and the incorporation of cutting-edge technology.

The nature of the Hospitality Industry influencing workers' competencies

The organization's reputation influences the quantity of client fulfillment and depends on the service caliber. In this industry, the visitor or client associates the item in question with the business that offers the solution and, concurrently, the location visited. The competitive advantage of businesses is related to and influences the viability of tourism destinations. Since there is a straightforward line of communication between the worker and the place of attraction, this industry places a high value on a description and understanding of employment. Even with the trends in the hospitality industry, restaurants, hotel owners and managers, and the community still need to prepare to accord this essential significance.

Tourism does not have a distinct sectoral character. Its limited political prominence and the reality that travel does not occupy a location that is consistent with its critical economic significance are both caused by this predicament. A consensus exists among business owners and staffing directors regarding the need for more qualified candidates for employment in the tourism industry. The most common abilities sought are interpersonal and social. However, the ability to study and work autonomously is becoming more and more significant. Language proficiency, as well as particular expertise and skills related to technological advancement and the industry's adoption of information technology, are frequently cited as needing improvement.

The increasing need for multiskilling, the amalgamation of several certifications, illustrates the need for adaptability. The need for workers with various specialized abilities characteristic of different qualifications has given rise to new, composite vocations. This is particularly prevalent for micro and small-scale enterprises with staff shortages and corresponding ad hoc job-swapping requests. Various versatility has been observed at the person's degree due to the sector's high degree of horizontal advancement and rapid worker turnover. Participation in various sporadic occupations and occupations, which results in a variety of specialist and professional backgrounds not recognized officially, is widespread among temporary employees. There is a growing need for certifications and

skills often offered through training institutions for other industries but with some competencies required to do a job effectively in the travel and tourism industry.

## CONCLUDING DISCUSSION

As discussed in the foregoing analysis, exploring the industry's future needs in terms of job positions, skills and competencies is an important function, which is part of the process of adaptation and innovation. An examination of the changes, trends and demands contributes to stability and healthy growth of each hotel and the sector as a whole. Drawing on our findings, it seems that there is an ongoing labour shortage and skills shortage in the Cypriot hotel sector. Different factors are contributing to this condition, such as skill set, lack of work and life bivalence, inadequate pay, and lack of career progression opportunities, among other causes.

Amidst ongoing labour shortage, the positions with the highest demand in the hospitality industry would be Room Maids, Waiters, General Cleaning Staff, and Hotel Receptionists. Employees need to posses skills with an increasing focus on safety and quality standards since some of the roles require compliance with relevant regulations. Future employees and hospitality graduate should also be trained in etiquette, customer service skills, and resolving customer complaint, including while working under pressure. At a managerial level, leading teams and promoting teamwork are important towards optimizing staff performance. Moreover, emotional intelligence, effective communication, time management and multitasking are equally important managerial skills, which also help managers facilitate diversity and inclusion. Finally, some positions involve managing and implementing the latest digital technologies, such as customer relationship management (CRM) systems, online marketing tools, and data analytics, to enhance marketing and operational efficiency. However, the need for adaptability goes beyond just having the right abilities. Administration of human resources approaches that depend on an elevated degree of individual adaptability under strain from ad hoc, regular employee deployments and insufficient benefits are linked with transient and unreliable job arrangements. The requirements for personal adaptability are frequently taken for granted by companies and are not included in the compensation policy. Examples include part-time work centered on contract employees, overburdened permanent employees, and unpredictable hours of operation, especially regular work on weekends and days off. A high level of staff attrition and an exodus of competent workers from the industry are the results of adverse workplace conditions and a dearth of opportunities for growth in their careers. Thus, the need for individual and skill adaptability is directly at odds with one another. The latter scenario needs comprehensive instruction and a human resource growth program from companies, while the former relies on minimal labor expenses and a lack of curiosity in human resources development. Additionally, the burden and additional hours

worked make it difficult for staff members to participate in instruction, which frequently results in

further reduced private time.


## REFERENCES

Aspiring Minds (2014) "Less than 11% of Hotel Management Graduates are Employable after college: Aspiring Minds" National Eligibility Reports, Hotel Management Graduates- 2014.

Atkins, M.J. (1999). Oven-ready and self-basting: taking stock of employability skills.Teaching in higher education, 4(2), 267–280.

Capranos, D., Magda, A. J. (2023). Closing the skills gap 2023: Employer perspectives on educating the post-pandemic workforce. Maitland, FL: Wiley Inc.

CEDEFOP, 2015, Skill Shortages and Gaps in European Enterprises, Luxembourg.

CEDEFOP, 2016, Future Skills Needs in Europe: Critical Labour Force Trends, Luxembourg.

CEDEFOP, 2016b, Skill Shortage and Surplus Occupations in Europe, Briefing note.

CEDEFOP, 2018, Insights into Skill Shortages and Skill Mismatch, Luxembourg.

Cook,I.(2021),"Whoisdrivingthegreatresignation?",availableathttps://hbr.org/2021/09/who-isdriving-the-great-resignation(accessed12July2022).

Council of European Union. (2016). Discussion paper panel 2 skills and competencies in the tourism sector. Council of European Union. https://projuven.org/eect/pluginfile.php/415/mod_resource/content/1/Skills%20and%20Competences%20in%20the%20Tourism%20Sector.pdf

Deschênes, A.-A. (2022). Human resource development in SMEs in a context of labor shortage: a profile analysis. European Journal of Training and Development,. https://doi.org/10.1108/EJTD-02-2022-0015.

Dhaliwal, R. S., & Misra, P. (2020). Employability Skills Needed in Hospitality Industry: A Scopious Review. Asian Journal of Education and Social Studies, 10(1), 18–34. https://doi.org/10.9734/ajess/2020/v10i130258

Efthymiou, L. (2010) 'Workplace control and resistance from below: An ethnographic study in a Cypriot luxury hotel', Unpublished Ph.D. thesis, Leicester: University of Leicester, https://leicester.figshare.com/articles/thesis/Workplace_Control_and_Resistance_from_Below_An_Ethnographic_Study_in_a_Cypriot_Luxury_Hotel/10103318/1. Accessed 7 July 2022.

Efthymiou, L. (2018) "Worker body-art in upper-market hotels: Neither accepted, nor prohibited". International Journal of Hospitality Management, Volume 74, August 2018, Pages 99-108.

Efthymiou, L. and Orphanidou, Y. (2022) Customer Feedback. In Buhalis, D., (ed), Encyclopedia of Tourism Management and Marketing. Edward Elgar Publishing, Cheltenham, https://www.elgaronline.com/view/nlm-book/9781800377479/b-9781800377486.customer.feedback.xml.

Efthymiou, L., Orphanidou, Y. and Panayiotou, G. (2020), "Delineating the changing frontstage and backstage segregation in high-end and luxury hotels", Hospitality & Society, 10:3, pp. 287–312, doi: https://doi.org/10.1386/hosp_00025_1.

Efthymiou, L.; Kulshrestha, A.; Kulshrestha, S. (2023) A Study on Sustainability and ESG in the Service Sector in India: Benefits, Challenges, and Future Implications. Administrative Sciences, 13, 165. https://doi.org/10.3390/admsci13070165.

Efthymiou, L., Orphanidou, Y. And Karayiannis, A. (2024) The Impact of Workers' Tattoos and Piercings on Employment: Suggestions for Pragmatic Career Planning. In Broadbridge, A. (Ed.) The Emerald Handbook of Appearance in the Workplace. Leeds: Emerald Publishing. ISBN: 978-1-80071-175-4.

Elshaer, A.M. and Marzouk, A.M. (2019), "Vocational skills and training in higher tourism and hospitality education in Egypt: an analytical framework", International Journal on Recent Trends in Business and Tourism, Vol. 3 No. 3, pp. 12-26.

Eurostat (2016), Statistical approaches to the measurement of skills, Publications Office of the European Union, Luxembourg.

Eurostat (2020) Ageing Europe — Looking at the lives of older people in the EU — 2020 edition, DOI: 10.2785/628105

Flash Eurobarometer 304: Employers' perception of graduate employability, 2015 http://ec.europa.eu/public_opinion/archives/flash_arch_314_300_en.htm#304

Fong, H., & Sparks, B. (2018). Attracting talent to the hospitality industry: The influence of Generation Y's perceptions. International Journal of Hospitality Management, 71, 41-50.

Hall, C. M., & Williams, A. M. (Eds.). (2020). Tourism and hospitality education in the Asia-Pacific region: Current issues and future challenges. Channel View Publications.

Jackson, D. (2013) Employability skill development in work-integrated learning: Barriers and best practice. Studies in Higher Education, Research Online, pp 1-18 http://ro.ecu.edu.au/ecuworks2013/666

Joukanen, Kalle. "The Process of Rebranding a Hospitality Industry SME in a Local Setting: Case Restaurant Cindy." (2020). https://urn.fi/URN:NBN:fi-fe2020051535761.

Kay, C. and Russette, J. (2000), "Hospitality-management competencies", Cornell Hotel and RestaurantAdministration Quarterly, Vol. 41 No. 2, pp. 52-63.

Kusluvan, S. (2013). Managing employee attitudes and behaviors in the tourism and hospitality industry. Nova Science Publishers.

Lacher, R.G. and Oh, C.-O. (2012), "Is tourism a low-income industry? Evidence from three coastal regions", Journal of Travel Research, Vol. 51 No. 4, pp. 464-472.

Li, X., Zhang, J., & Yang, Y. (2020). An empirical study on the impact of employee perception of skill shortage on employee innovative behavior: A case of the hospitality industry in Beijing. Frontiers in Psychology, 11, 1497.

Lim Sze Hui, J. (2022) "Enhancing strategies to deal with a labor shortage in the hotel industry in the post covid world." Available at: https://scholarbank.nus.edu.sg/handle/10635/226789 (Accessed: 27-June-2022).

Liu-Lastres, B., Wen, H. and Huang, W.-J. (2023), "A reflection on the Great Resignation in the hospitality and tourism industry", International Journal of Contemporary Hospitality Management, Vol. 35 No. 1, pp. 235-249. https://doi.org/10.1108/IJCHM-05-2022-0551.

Marathovouniotis, S. (2018) Hoteliers complain about staff shortage. in-Cyprus, 10 October 2018. Available at: https://incyprus.com/news/local/hoteliers-complain-staff-shortage/ (Accessed: 12-December-2018).

McGuiness, S, Pouliakas, K and Redmond, P, 2017, How Useful is the Concept of Skill
Mismatch? ILO, Geneva.

Mok, C., Sparks, B., & Kadampully, J. (2013). Service quality management in hospitality, tourism, and leisure. Routledge.

Nain, A. (2018) "A Study on Major Challenges Faced by Hotel Industry Globally". International Journal of Creative Research Thoughts. 6 (1): 561-571.

Oktadiana, H. and Chon, K. (2017), "Why do we teach what we teach? Perspectives from Asia's hospitality and tourism program directors", Journal of Teaching in Travel and Tourism, Vol. 15 No. 4, pp. 281-299.

Olga Strietska-Ilina (2005) Early Identification of Skill Needs. European Centre for the development of Vocational Training. Available at: https://www.cedefop.europa.eu/files/2295-att2-1-Stuttgart_05_Strietska.pdf. Accessed 7 July 2023.

Omar et al. (2012) Graduates' Employability Skills Based on Current Job Demand through Electronic Advertisement, Asian Social Science, Vol. 8, No. 9

Pellizzari, M and Fichen, A, 2017, A New Measure of Skill Mismatch: Theory and Evidence from
PIAAC, IZA Journal of Labor Economics, 6,1,1-30.

Sharma, S. and Sharma, R. (2019), "Culinary skills: the spine of the Indian hospitality industry: Is the available labor being skilled appropriately to be employable?", Worldwide Hospitality and Tourism Themes, Vol. 11 No. 1, pp. 25-36. https://doi.org/10.1108/WHATT-10-2018-0061.

Solnet, D.J., Paulsen, N. and Cooper, C. (2010) "Decline and turnaround: a literature review and proposed research agenda for the hotel sector", Current Issues in Tourism, 13:2, 139-159, DOI: 10.1080/13683500802638219.

Sondermann, D., Consolo, A., Gunnella, V., Koester, G., Lambrias, K., López-Garcia, P., Nerlich, C., Petroulakis, F., Saiz, L. and Serafini, R. (2019), "Economic structures 20 years into the euro", No. 224; Occasional Paper Series, available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op224~2349417aaa.en.pdf.

Sousa, M.J. and Wilks, D. (2018), "Sustainable skills for the world of work in the digital age," Systems Research and Behavioral Science, Vol. 35 No. 4, pp. 399-405.

Srivastava, S., Dey, S.K., Sharma, S. and Ratilla, M. (2023), "Adoption of sustainable practices by Asian hotels: gaps in academia", Worldwide Hospitality and Tourism Themes, Vol. 15 No. 3, pp. 220-230. https://doi.org/10.1108/WHATT-01-2023-0009.

Tanizaki, T., Hoshino, T., Shimmura, T. and Takenaka, T., (2019) Demand forecasting in restaurants using machine learning and statistical analysis. Procedia CIRP, 79, pp. 679-683.

UNWTO (2019), "The future of work and skills development in tourism – policy paper", doi: 10.18111/9789284421213.

Yakavenka, V., Vlachos, D., Papadopoulos, A., Klieštik, T., Orphanidou,Y., Efthymiou, L., Psilla, D. (2023) Features of Foreign Working Force for Cypriot Hotel Industry. In: Katsoni, V. (eds) Tourism, Travel, and Hospitality in a Smart and Sustainable World. IACuDiT 2022. Springer Proceedings in Business and Economics. Springer, Cham. https://doi.org/10.1007/978-3-031-29426-6_14.

# ORGANIZATIONAL CULTURE IMPACT ON EMPLOYEE MOTIVATION AND PROFESSIONAL BURNOUT: CASE OF LITHUANIAN MEDICAL INSTITUTIONS

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## ABSTRACT

**Purpose** - to examine the impact of organizational culture of Lithuanian medical institutions on employee's motivation and professional burnout, occupation (i.e. doctor, nurse, administration employee) being a moderator.

**Design/Methodology/Approach** - a quantitative method was used for the purpose of this study, and a sum of 235 fulfilled questionnaires were obtained as a result of online survey; software IBM SPSS was applied for the data statistical analysis and hypotheses' testing.

**Findings** – The results of the study reveal that organizational culture is significantly related to both employee motivation and professional burnout. Therefore it is important for the managers of medical institutions to consider that management of organizational culture and employee motivation remain significant as it can reduce employee turnover, retain talents as well as ensure the consequent implementation of long-term human resource management programs in the organization and protect the employees from professional burnout.

**Originality/value** - The analysis of the interaction between organizational culture and professional burnout revealed different statistical relationships between organizational culture and doctors, nurses and administration employees' overload, lack of development and neglect. Organizational culture do not have statistically significant impact on neglect of doctors, nurses and administration employees; however, organizational culture significantly influences overload and lack of development in all respondents' groups. In other words, the lower the evaluation of the organizational culture, the bigger the level of the employee's overload and the feeling of lack of development.

*Keywords: organizational culture, extrinsic motivation, intrinsic motivation, professional burnout, medical institutions.*

## INTRODUCTION

The article aims to empirically investigate the influence of organizational culture on employee motivation and professional burnout as organizations operate in a constantly changing and

unpredictable environment in recent years. In order to remain competitive in a highly dynamic and constantly changing environment it is necessary to identify factors that influence organization's performance and efficiency (Chan et al. 2022; Ilyas et al. (2023), Turato et al. (2022). Scholars agree that organizational culture is an indisputable factor; however, organizational culture is never static but always a highly dynamic process and a multifaceted phenomenon as a whole. Organizational culture is created in interaction with other factors and is defined as the basic values, rules of behavior and beliefs recognized by the members of the organization that influence the thinking, feelings and well-being of employees (Shein 2010, Vito 2020). The researchers who noticed that the better the organizational culture is, the higher the motivation of the employees and the more productive the work results are, concluded that there is a positive relationship between the organizational culture and the motivation of the employees. As a result more attention was paid to the analysis and research of these factors and the formulation of reasonable insights for the development of employee motivation programs (Bosak et al. 2021; Chan et al. 2022; Menga and Bruce 2019).

In today's world, as the pace of life constantly intensifies, the employee bears a heavy burden of responsibility and increasing workloads, occurring malfunctions as well as conflict situations increasingly cause stress that can eventually turn into professional burnout. Researchers define professional burnout as a phenomenon that develops because of chronic stress at work, which exhausts the employee both emotionally and physically over time (Bosak et al. 2021; Chan et al. 2022; Ilyas et al. 2023; Lamprinou et al. 2021). The consequences of this are usually manifested in progressive psychological and physical ailments that prevent the performance of work properly and can lead to ultimate exhaustion. Professional burnout is most common in professions where employees are required to interact with other people as well as the work is related to constantly recurring stressful situations (Kearney et al. 2020; Lamprinou et al. 2021; Singh and Jain, 2017). According to researchers all physical ailments of employees are a response to a disturbed mental state, and the professional burnout of employees is a serious problem that affects not only the professional but also the personal life of the employee (Ilyas et al. 2023; Nguyen et al. 2018).

Employee motivation is mostly defined as a process, action or reason that encourages employees to achieve a certain organizational goal (Budirianti 2020, Araujo et al. 2020); however, there is no unified definition or method of motivation in the scientific literature that could be used in all organizations and would be suitable for every employee. Nevertheless, interaction and interdependence between the organizational culture and employee motivation has been a significant topic to both scholars and practitioners for the past decades. However, there is no much literature and research comprehensively and systematically based on theoretical knowledge or studies about the organizational culture impact on employees' concerns related to professional burnout, namely overload, lack of development and

neglect. As a consequence it is hard to judge whether organizational culture of every institution is significantly related to professional burnout and, if so, how the purposeful and accurate development of organizational culture can help organizations managers to protect employees from overload, feeling of lack of development and neglect at work at all managerial levels of the organizational structure. The quantitative research method has been applied with the empirical research instrument - a survey questionnaire, prepared by adapting Van den Berg and Wilderom (2004), Wilderom et al. (2012), Trembley et al. (2009), Montero-Marín et al. (2011) scales. Depending on the number of respondents - similar researches samples and using a random sampling method, data of 235 anonymously filled in questionnaires have been analyzed. Software IBM SPSS was applied for the data statistical analysis and hypotheses' testing. The findings of the study may help managers to consider that organizational culture and employee motivation remain significant as it can reduce employee turnover, retain talents as well as ensure the consequent implementation of long-term human resource management programs in the organization and protect the employees from professional burnout. The study seeks to draw attention of both public and private institutions as well as formulate some insights that could be useful for the institutions to keep their human resource management practices more resilient.

## THEORETICAL BACKGROUND

In the long run organizations are encouraged to motivate their employees so that they work more efficiently and, as a result, performance results grow and improve. However, currently gets harder to attract and retain good employees, because in a growing global market they have more and more freedom of choice and tend to change jobs much more frequently than representatives of previous generations do. Therefore managers have no choice but to find ways to perpetually promote employee loyalty and keep them motivated (Araujo et al. 2020). That is why motivation is one of the main factors of success of an organization having a significant impact on employee retention and work results in general (Bosak et al. 2021; Budirianti 2020). Most frequently researchers define motivation as a process, action or reason that encourages employees to achieve a certain organizational goal (Budirianti 2020, Araujo et at. 2020); however, there is no unified definition or method of motivation in the scientific literature that can be used in all organizations and could be suitable for every employee. In earlier theories, Maslow (2006) argued that desire to satisfy needs is the main variable of motivation and classified the factors of motivation from physiological to psychological. Herzberg (1965) agreed and recognized that there is a diversity of employee needs and depicted it according to a certain hierarchy. In turn, Vroom (1964) studied motivation as a process and argued that people choose courses of action that can reduce discomfort or increase pleasure. Taylor (2005) and Robbins (2006) motivation theories are similar because they describe finance as a motivator that encourages

employees to work more efficiently and is more suitable for employees working in physical and monotonous work, where quick work results are required. It could be stated that different authors define motivation differently; however, they unanimously agree that it is necessary and closely related to organizational performance and success. The conducted researches identify that motivated employees are more involved in their work and do job more efficiently in organizations. They are also happier and more adaptable to change and cope with stress more easily (Bosak et al. 2021; Nawawi et al. 2018). According to the researchers cases of professional burnout among highly motivated employees occur much less frequently than among low motivated ones (Ilyas et al. 2023).

Unger (2019) and Maslach et al. (2016) relate professional burnout to the employee's emotional exhaustion, when the will is lost and a feeling of helplessness is felt that occurs due to both constant physical and emotional exhaustion. According to Bajwa et al. (2020) the phenomenon of professional burnout is most influenced by long-term stress at work, which causes tension. Bosak et al. (2021) and Chan et al. (2021) treat the professional burnout as an employee's burnout, where a high level of effort is exerted at work but is underappreciated. In agreement with and complementing previous authors, Hakanen and Bakker (2017) state that professional burnout is a long-term phenomenon that has negative consequences for the behavior and health of employees and manifests itself in a tendency to self-destruction. Analyzing the concept of professional burnout it can be summarized that there is no unambiguous definition as authors evaluate this phenomenon differently. They distinguish particular features; however, instead of contradicting, they only complement each other with definitions that are more explicit.

In scientific literature researchers analyze organizational culture from various angles. J. A. Stoner studies organizational culture as a set of employee values, norms and beliefs that are characteristic of the employees of a certain organization (Stoner, 2005). Other researchers conceptualize organizational culture as a domain and offer models of employee value systems (Cameron, 2011). Over time, a general opinion is reached that the success factor of an organization undoubtedly is its culture, because it can strongly influence the efficiency of operations, the productivity of employees and motivate new talents because of which they become loyal to the organization over time (Warrick, 2017). Schein (2010) claims that organizational culture is formed over a period of time when employees experience various external and internal changes and solve problems and challenges in the organization. By solving difficulties to adapt to changing circumstances the employees begin to better understand the organization itself. For this reason, organizational culture can become a powerful tool that helps the organization to form a long-term employee motivation system thus to protect the employees from professional burnout.

## RESEARCH METHODOLOGY AND FINDINGS

Purpose of this study is to examine the impact of organizational culture of Lithuanian medical organizations on employee motivation and professional burnout, occupation (i.e. doctor, nurse, administration employee) being a moderator. Based on the relevance of the interaction of the phenomena suggested by previous researchers a theoretical research model was formed, which aims to substantiate the impact of organizational culture on employee motivation and professional burnout in medical institutions (Figure 1):
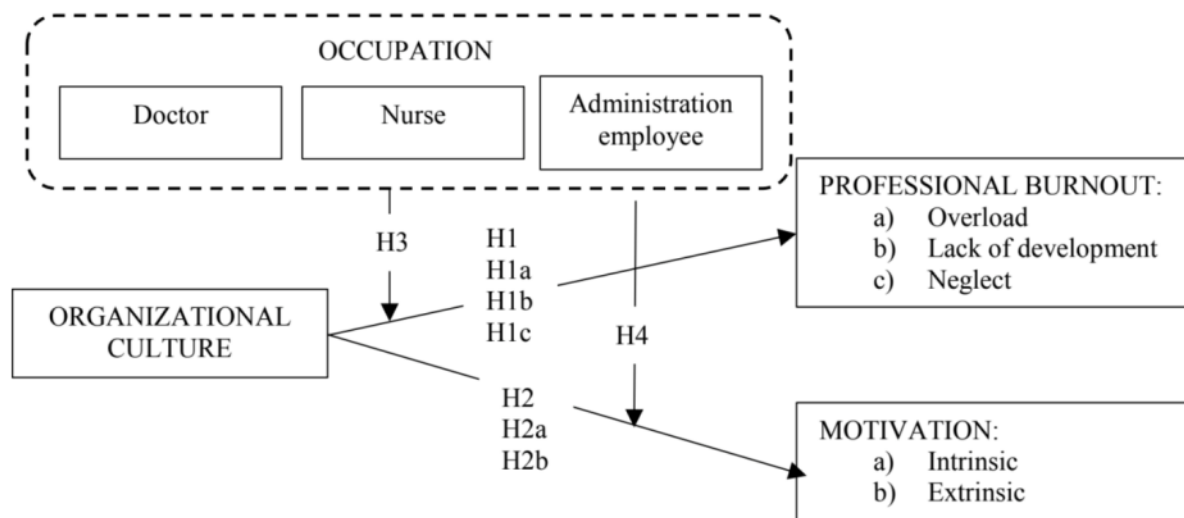


Figure 1: Conceptual research model

Number of previous researches determine insightful relationship between organizational culture and professional burnout (e.g. Zamini et al. 2011; Mijakoski et al. 2015; Kheiradish et al. 2016). In most cases presence of high organizational culture lowers professional burnout possibility. In relation to prior research, we hypothesize:

**H1:** Organizational culture has a statistically significant impact on Lithuanian doctors, nurses and hospital administration employees' professional burnout.

**H1a:** Organizational culture has a statistically significant impact on overload of Lithuanian doctors, nurses and hospital administration employees.

**H1b:** Organizational culture has a statistically significant impact on lack of development of Lithuanian doctors, nurses and hospital administration employees.

**H1c:** Organizational culture has a statistically significant impact on neglect of Lithuanian doctors, nurses and hospital administration employees.

Research on organizational culture impact on employee motivation suggest that there is a statistically significant relation between organization culture and motivation (Yusof et al. 2017; Sokro 2012;

Fernandes 2018; Nawawi et al. 2018; Nasrun and Ambarita 2017; Panagiotis et al. 2014). In other words, the higher is organizational culture the higher the motivation of employees. Based on prior research findings we hypothesize:

**H2:** Organizational culture has positive impact on Lithuanian doctors, nurses, and hospital administration motivation.

**H2a:** Organizational culture has positive impact on Lithuanian doctors, nurses and hospital administration intrinsic motivation.

**H2b:** Organizational culture has positive impact on Lithuanian doctors, nurses and hospital administration extrinsic motivation.

There is a difference in perception of an organizational culture depending on employee's occupation within organization (Copuš, 2019). Empirical research of Copuš (2019) of manufacturing facility workers found out that impact of organizational culture on motivation is stronger in a case of non-production than production employees. In our study we follow approach that occupation moderates the relation between organizational culture and motivation and hypothesize:

**H3:** Positive impact of organizational culture on motivation is stronger among hospital's administration employees than doctors and nurses.

Analyzing empirical researches of organizational culture we have noticed lack of research analyzing the impact of employee's position in an organization on organizational culture and motivation relation. Zamini et al. (2011) identified significant relation between organizational culture and professional burnout of administration employees of Tabriz university, but no such significance in the respondents' group of teaching personnel. Based on this we hypothesize:

**H4:** Negative organizational culture impact on burnout is stronger on hospital administration personnel than doctors and nurses.

Quantitative research method was chosen to conduct the study. The survey was carried out in Lithuanian language, the participants were provided with a link of the online survey on email and social media platforms. Participants of the study were employees of Lithuanian state owned and private hospitals – doctors, nurses and administration employees. Previous empirical research using similar constructs were analyzed (Zamini et al. 2011; Mijakoski et al. 2015; Kheirandish et al. 2016; Yusof et al. 2017; Sokro 2012; Fernandes 2018; Nawai et al. 2018; Nasrun and Ambarita 2017; Copuš 2019; Panagiotis et al. 2014) and reliable sample determined – minimum 227 respondents. The final sample consisted of a total of 235 participants in this research.

82.1% or respondents were female and 17.9 % were male, average age of 42 years (SD=10.45). In terms of education the majority of the respondents (82.5%) have the higher or uncompleted higher education. 75.3% of employees work in state owned, while 24.7% in a private medical institution. Most of the participants (66.0%) work in a large-scale organization with more than 250 employees. 51.9% of respondents were doctors, 20.9% nurses and 27.2% administration employees. Participants represented very wide organizational tenure specter - 29.8% of total sample have been within the current organization for 1-5 years, 22.6 % 11-20 years, 22.1% 6-10 years, 20% >20 years and only 5.5% less than 1 year.

A 7-point Likert-type scale (1 = totally disagree, 7 = totally agree) was used for all substantive items. English language constructs were translated using translation-back-translation procedure to translate from English to Lithuanian language. IBM SPSS software was used for the analysis of the collected data.

To access organizational culture Van den Berg and Wilderom (2004) scale was used. Scale has been used and validated by other researchers (e.g. Wilderom et al. 2012) and is reliable for measuring organizational culture. We have chosen to use 10-items from the original 45 items, developed by Van den Berg and Wilderom (2004). The Cronbach alpha coefficient for this scale in this study is 0.887.

This dimension was measured using 18-item Trembley et al. (2009) Work Extrinsic and Intrinsic Motivation Scale (WEIMS). Two sub-scales were indicated in this study – extrinsic and intrinsic motivation. The Cronbach alpha for this scale in this study is 0.861.

We have used 12-items Burnout Clinical Subtypes Questionnaire (BCSQ-12), developed and validated by Montero-Marín et al. (2011). Items are grouped into 3 sub-scales: overload (e.g. "*I think the dedication I invest in my work is more than what I should for my health*"), lack of development (e.g. *"I would like to be doing another job that is more challenging for my abilities"*) and neglect (e.g. *"I neglect my personal life when I pursue important achievements in my work*"). The Cronbach alpha coefficient for this scale in this study is 0.891.

Occupation - position held (doctor, nurse, administration employee), gender, level of education, level of organizational tenure were differentiated in this study.

Shapiro-Wilk test revealed that sample was not normally distributed thus non-parametric criteria for further statistical analysis were applied. Mann-Whitney and Kruskal Wallis tests were used to compare differences, Wilcoxon test to check whether there is a significant difference between two means as well as Spearman correlation coefficient.

Participants of the study overall evaluation of organizational culture of their working place MD=39 out of 70. Statistically significant difference (p<0.001) is fixated in respondents evaluation of the organizational culture in private and state own hospitals – private sector organization culture is rated higher than state owned. Organizational culture in small and very small organizations is evaluated higher in comparison to large organizations (p<0.001). Statistical comparison between position held and organizational culture evaluation revealed statistical significance (p<0.001). Hospital administration employees' evaluation of organizational culture are statistically more significant and higher than those of doctor's (p<0.001) and nurses (p<0.001). Work motivation was rated above average – intrinsic motivation MD=41, extrinsic – 34 out of 63. Both private and state owned sectors intrinsic motivation is rated higher than extrinsic (p<0.001). Statistical significance is fixated on extrinsic motivation evaluation in private and state owned hospitals – (p<0.05) – private sector's extrinsic motivation is higher than state owned. Burnout level was lower than average – overload MD=18, lack of development MD=14, neglect MD=10 out of 28. Correlation analysis between organizational culture and burnout sub-scales presented in Table 1. Organizational culture negatively correlated with total burnout (r=-0.144, p<0.05), overload sub-scale (r=-0.144, p<0.05) and lack of development (r=-0.153, p<0.05). This suggest that higher organizational culture evaluation results into lower professional burnout level.

|  |  | Burnout sub-scales | | | |
|  |  | Overload | Lack of development | Neglect | Total burnout |
|---|---|---|---|---|---|
| Organizational culture | Correlation coefficient | -0.144 | -0.153 | 0.003 | -0.149 |
|  | p | 0.027 | 0.019 | 0.959 | 0.022 |
|  | N | 235 | 235 | 235 | 235 |

Table 1: Organizational culture and professional burnout correlations

Testing H4, organizational culture and burnout were analyzed in terms of different positions held by employees in Lithuanian hospitals - doctors, nurses and administration employees. Statistically significant correlations confirmed only in doctor's group (Table 2). These finding does not support H4 - negative organizational culture impact on burnout is stronger on hospital administration personnel than doctors and nurses – thus H4 is rejected.

| | | Burnout sub-scales | | | |
|---|---|---|---|---|---|
| | | Overload | Lack of development | Neglect | Total burnout |
| Organizational culture (doctors) | Correlation coefficient | -0.150 | -0.242 | -0.129 | -0225 |
| | p | 0.099 | 0.007 | 0.156 | 0.013 |
| | N | 122 | 122 | 122 | 122 |
| Organizational culture (nurses) | Correlation coefficient | -0.134 | -0.190 | -0.013 | -0.157 |
| | p | 0.360 | 0.191 | 0.928 | 0.282 |
| | N | 49 | 49 | 49 | 49 |
| Organizational culture (administration) | Correlation coefficient | -0.030 | 0.022 | 0.242 | 0.029 |
| | p | 0.814 | 0.863 | 0.054 | 0.820 |
| | N | 64 | 64 | 64 | 64 |

Table 2: Organizational culture and burnout correlations between different hospital employees' positions held.

To test H1 linear regression model with dependent variable of total professional burnout and independent variable of organizational culture were conducted, but model reliability was insufficient (ANOVA p>0.05). As a result, H1 was rejected; however, H1a was confirmed, H1b was confirmed and H1c was rejected.

There were statistically significant correlations between organizational culture and motivation (intrinsic (r=0.260, p<0.001), extrinsic (r=0.289, p<0.001)) and total (r=0.312, p<0.001). Linear regression with dependent variable being total motivation level and independent variable organizational culture is statistically significant (ANOVA F=36.427; p<0.001; $R^2$ =0.135) (Table 3). Thus research suggest that organizational culture is positively related to Lithuanian hospital employees' motivation and H2, H2a and H2b are confirmed.

| Coefficients | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized coefficients | | Standardized coefficients | | |
| | | B | SD | Beta | t | p |
| 1. | Const. | 55.398 | 3.527 | | 15.706 | <0.001 |
| | Organizational culture | 0.522 | 0.087 | 0.368 | 6.035 | <0.001 |
| a) | Dependent variable: total motivation | | | | | |

Table 3: Organizational culture linear regression analysis

We hypothesized that "Positive impact of organizational culture on motivation is stronger on hospital's administrative personnel than doctors and nurses" (H3). As can be seen in Table 4, correlation between organizational culture and total motivation was lowest in doctors' group (r=0.227, p<0.05), highest in administration personnel group (r=0.435, p<0.001). Based on these findings, the H3 is confirmed.

| | | Motivation sub-scales | | |
| --- | --- | --- | --- | --- |
| | | Intrinsic | Extrinsic | Total motivation |
| Organizational culture (doctors) | Correlation coefficient | 0.232 | 0.128 | 0.227 |
| | p | 0.010 | 0.160 | 0.012 |
| | N | 122 | 122 | 122 |
| Organizational culture (nurses) | Correlation coefficient | 0.309 | 0.360 | 0.374 |
| | p | 0.031 | 0.011 | 0.008 |
| | N | 49 | 49 | 49 |
| Organizational culture (administration) | Correlation coefficient | 0.369 | 0.414 | 0.435 |
| | p | 0.003 | 0.001 | <0.001 |
| | N | 64 | 64 | 64 |

Table 4: Organizational culture and motivation correlations between different hospital employees' positions held.

## MANAGERIAL IMPLICATIONS AND FURTHER RESEARCH

The scientific literature review and the empirical study provide an organizing frame of reference for both scholars and managers. The results of the study reveal that organizational culture is positively related to motivation in all respondents groups; however, hospital administration employees' evaluation of organizational culture are statistically more significant and higher than those of doctors and nurses although more than a half of respondents - 51.9% - were doctors, the rest - 20.9% nurses and 27.2% administration employees. For managers the study highlights two related concerns. First, the research reveals significant statistical relationships between organizational culture and professional burnout in all respondents groups: doctors, nurses and administration employees. Second, organizational culture do not have statistically significant impact on neglect of doctors, nurses and administration employees; however, organizational culture significantly influences overload and

lack of development in all respondents' groups. In other words, the lower the evaluation of the organizational culture, the bigger the level of the employee's overload and the feeling of lack of development. Therefore it is important for the managers of organizations to consider significance of the organizational culture, the employees motivation and professional burnout interrelation as the proper management of the phenomena can reduce employee turnover, retain talents as well as ensure the consequent implementation of long-term human resource management programs in the organization. (Bosak et al. 2021; Chan et al. 2022; Ilyas et al. 2023; Kearney et al. 2020; Lamprinou et al. 2021; Turato et al. 2022).

Present research would contribute to organizational culture research literature, shedding a new light on organizational culture impact in the context of Lithuanian medical institutions employees, their motivation and professional burnout. However, much work remains to be done to better perceive particularity and uniqueness of organizational culture, employees motivation and professional burnout interrelation in every organization. While many researchers focus on organizational culture and employee motivation, the current study examines of how this may be linked to employee professional burnout. Therefore, scholars must further research new evidence on the most salient risks and challenges of professional burnout in institutions of different profiles, both in state owned and private. The scholars must continue trying to create methodologically reliable instruments to analyze organizational culture, employees motivation and professional burnout interrelation as well as to suggest ways to identify best practices that would make a positive change in long-term.

# REFERENCES

Amirreza S., A., Ah mand, A. (2018) "The Impact of Organizational Culture and Performance Work System on Employees' Performance", International Business Research, Published by Canadian Center of Science and Education, 11(6), pp. 199-212.

Araujo C. C., Giri E. E., Soares A. D. C. (2020). The Effect of Leadership and Employee Motivation on Business Success and Organizational Performance (Study at Aeroporto Presidente Nicolau Lobato, Dili and Timor Leste). International Journal of Multicultural and Multireligious Understanding, 7(7), p. 706–714.

Bajwa S., Butt A., Mazhar N., Warris S., Tariq M., Ashrat R. (2020), „Relationship between work flow and burnout in medical professionals", The Professional Medical Journal.

Bosak, J., Kilroy, S., Chenevert, D., Flood, P.C., (2021), "Examining the role of transformational leadership and mission valence on burnout among hospital staff", Journal of Organizational Effectiveness: People and Performance. 8(2), pp. 208-227.

Budirianti, B. L. R., Agusdin A., Surati S. (2020), „The Influence of Work Discipline, Motivation, Job Satisfaction and the Work Environment on the Performance of Contract Employees", International Journal of Multicultural and Multireligious Understanding, 7(11).

Cameron K. S., Quinn, R. E. (2011), Diagnosing and Changing Organizational Culture. 3 ed. San Francisco: Jossey-Bass.

Chan, S.H.J., Chan, K-T., Chan, Y.E. (2022), "Burnout in learning organizations: the roles of organizational respect, job satisfaction and job insecurity", The Learning Organization, 29(5), pp. 506-526.

Copuš L., Šajgalíková H. Wojčák E. (2019), "Organizational Culture and its Motivational Potential in Manufacturing Industry: Subculture Perspective", Procedia Manufacturing, 32, pp. 360–367.

Fernandes A. A. R. (2018), "The effect of organization culture and technology on motivation, knowledge asset and knowledge management", International Journal of Law and Management, 60(5), pp. 1087-1096.

Hakanen J. J., Bakker A. B. (2017), „Born and bred to burn out: A life-course view and reflections an job burnout", Journal of Occupation Health Psychology, 22(3), p. 354-364.

Herzberg F. (1965). The motivation to work among Finnish supervisors. Personnel psychology, 18(4), p.393–402.

Ilyas, S., Kinnaird, A., Ashfaq, F. (2023), "The impact of perceived organizational support on professional commitment: a moderation of burnout and mediation of well-being", International Journal of Sociology and Social Policy.

Kearney, C., Dunne, P., Wales, W.J., (2020), „Entrepreneurial orientation and burnout among healthcare professionals", Journal of Health Organization and Management, 34(1), pp. 16-22.

Kheirandish M., Farahani A., Nikkhoo B. (2016), "The impact of Organizational Culture on employees ' Job Burnout", International Academic Journal of Organizational Behavior and Human Resource Management, 3(2), pp. 42-56.

Lamprinou, V.D.I., Tasoulis, K., Kravariti, F. (2021), "The impact of servant leadership and perceived organisational and supervisor support on job burnout and work–life balance in the era of teleworking and COVID-19", Leadership & Organization Development Journal, 42(7), pp. 1071-1088.

Maslach C., Leiter M. P. (2016), „Understanding the burnout experience: Recent research and its implications for psychiatry", World Psychiatry, Vol. 15, pp. 103-111.

Maslow H. A. (2006). Motyvacija ir asmenybė. Vilnius: Apostrofa.

Menga J., Bruce B. K. (2019), „The impact of organizational culture and leadership performance on PR professionals' job satisfaction: Testing the joint mediating effects of engagement and trust", Amsterdam: Elsevier.

Mijakoski D., Karadzinska-Bislimovska J., Basarovska V., Montgomery A., Panagopoulou E., Stoleski S., Minov J. (2015), "Burnout, Engagement, and Organizational Culture: Differences between Physicians and Nurses", Open access Macedonian journal of medical sciences, 3(3), pp.506–513.

Montero-Marín J., Skapinakis P., Araya R. (2011), „Towards a brief definition of burnout syndrome by subtypes: Development of the "Burnout Clinical Subtypes Questionnaire" (BCSQ-12). Health Qual Life Outcomes 9(74).

Nasrun D., Ambarita D. (2017), "The Effect of Organizational Culture and Work Motivation on Teachers Performance of Public Senior High School in Tebing Tinggi", Proceedings of the 9th International Conference for Science Educators and Teachers.

Nawawi M., Syarifuddin A., Sehe M., Ekawati H. (2018), "The Effect Compensation And Organization Culture On The Motivation And Commitment Organization Coal Company In East Kalimantan Province", International Journal of Scientific & Technology Research, Vol. 7, pp. 11-14.

Nguyen H. T. T., Kitaoka K., Sukigara M., Thai A. L. (2018), „Burnout Study of Clinical Nurses in Vietnam: Development of Job Burnout Model Based on Leiter and Maslach's Theory", Asian Nursing Research, 12(1), p.42-49.

Panagiotis M., Sahinidis A., Polychronopoulos G. (2014), "Organizational Culture and Motivation in the Public Sector. The Case of the City of Zografou", Procedia Economics and Finance, Vol. 14, pp. 415-424.

Robbins S. P. (2006). Organizacinės elgsenos pagrindai. Kaunas: Poligrafija ir informatika.

Schein E. H. (2010). Organisational Culture and Leadership, 2 ed. John Wiley & Sons, p.17.

Singh R. K., Jain M. (2017), „Efficacy of self-management techniques in reducing perceived occupational stress among nursing staff", Indian Journal Of Positive Psychology, 8(3), p. 360-365.

Sokro E. (2012), "Analysis of the relationship that exists between organizational culture, motivation and performance", Problems of management in the 21st century. Vol. 3, pp. 106 – 119.

Stoner J. A. F. et al. (2005). Vadyba (4 ed.). Kaunas: Poligrafija ir informatika, p.178.

Taylor F.W. (2005). Moksliniai valdymo principai. Vilnius: Eugrimas, p.17-18.

Tremblay M. A., Blanchard C. M., Taylor S., Pelletier L. G., Villeneuve M. (2009), "Work extrinsic and intrinsic motivation scale: its value for organizational psychology research", Canadian Journal of Behavioural Science, Vol. 41, pp. 213-226.

Turato, G., Whiteoak, J., Oprescu, F. (2022), "Allied health front-line manager perceptions of factors impacting workplace morale and burnout risk", Journal of Health Organization and Management, 36(7), pp. 857-874.

Unger J.P. (2019), Physicians' Burnout (and That of Psychologists, Nurses, Magistrates, Researchers, and Professors) For a Control Program. Sage Publications.

Van den Berg P. T., Wilderom C. P. (2004), "Defining, measuring, and comparing organizational cultures". Applied Psychology, 53(4), pp. 570-582.

Vito R. (2020), „Key variations in organizational culture and leadership influence: A comparison between three children's mental health and child welfare agencies", Children and Youth Services Review, Vol. 108.

Vroom V. H. (1964). Work and motivation. New York: Wiley.

Warrick D. D. (2017). What leaders need to know about organizational culture. Amsterdam: Elsevier.

Wilderom, C.P.M.; Van den Berg, P.T.; Wiersma, U.J. (2012), "A longitudinal study of the effects of charismatic leadership and organizational culture on objective and perceived corporate performance", The Leadership Quarterly, Vol. 23, pp. 835-848.

Yusof H. S. M., Munap R., Badrillah M. I. M., Hamid N. R. A., Khir R. M. (2017), "The Relationship Between Organizational Culture and Employee Motivation As Moderated by Work Attitude", Journal of Administrative and Business Studies, 3(1), pp. 21-25.

Zamini S., Zamini S., Barzegary L. (2011), "The Relationship Between Organizational Culture and Job Burnout Among the Professors and Employees in the University of Tabriz". Procedia - Social and Behavioral Sciences, Vol. 30, pp. 1964-1968.

# MEASURING MATURITY OF CORPORATE SUSTAINABILITY: HOW TO EVALUATE SUSTAINABILITY TRANSITION PATHWAY

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## ABSTRACT

The purpose of this paper is to address corporate sustainability maturity and provide an external assessment tool. This research proposes a methodology to measure corporate sustainability maturity, which categorizes transitions into four levels: emergence, popularisation, formalisation, and optimisation. Employing a qualitative inductive embedded multiple-case approach, the study utilizes data triangulation through corporate websites, sustainability reports, and interviews with managers to support and complement existing literature on corporate sustainability maturity. The analytical hierarchy process is used for prioritising and weighting the criteria for corporate sustainability maturity level assessment. Eighteen organisations that are interested and vested in sustainability movement of transitioning economy of Lithuania are analysed. However, none of these organisations reach the highest – optimisation – maturity level, indicating a necessity for more defined sustainability strategy. Exploring corporate sustainability maturity provides insights and gives a perspective of social and economic parts of sustainability to the sustainability transitions field, expanding the mostly technological and environmental issues dominated area with knowledge on social and economic sustainability. The paper focuses more on the experiences and perceptions of the organisations and their representatives on the current occurrences, regarding social, economic and environmental sustainability. Furthermore, an original methodology is developed in this research. The proposed methodology can be used in further research in other contexts to identify the corporate sustainability maturity levels or applied in the organisations as a self-assessment tool, helping manage the change.

*Keywords: Corporate sustainability, Corporate sustainability maturity, Maturity assessment*

## INTRODUCTION

Corporate sustainability can be defined as a balance among economic profit, preservation of the environment and social concerns, regarding the needs of the future generations (Sari *et al.*, 2020; Jouber, 2023). Moreover, corporate sustainability has a long-term approach and is oriented towards meeting stakeholders' needs (Dyllick and Hockerts, 2002), to which Edgeman and Williams (2014) add

that the triple bottom line should be met for the organisation, stakeholders and the overall society both long and short-term (Sari *et al.,* 2020). Thus, the incorporation of sustainable development of the organisation, synthesising social value, institutional factors, technological artefacts and regarding contextual conditions can be called corporate sustainability (Baumgartner and Ebner, 2010; Hansmann, Mieg and Frischknecht, 2012; Herrick and Pratt, 2013; del Vecchio *et al.,* 2022). Corporate sustainability is defined as a complex synthesis of sustainable development idea being incorporated into the organisation, containing all three pillars of sustainable development: economic, environmental and social, which maintain change in a balanced environment. This definition has been inspired by Baumgartner and Ebner (2010), Hugé et al. (2018), Humanities Education Centre (2009), Siano et al. (2016). Furthermore, corporate sustainability and sustainable development encompass a time frame, which can be both long and short-termed, aiming at the long-term impact; thus, the journey, which is often referred to as the transition towards sustainability, becomes important.

Sustainability transitions are long-term, complex, fundamental transformations of organisational systems (Markard, Raven and Truffer, 2012). They are part of the social construct and can be addressed at different levels of maturation (Ramanauskaitė and Staniškienė, 2020). Describing and measuring maturity is rationalised to be more subjective than objective (Andersen and Jessen, 2003), providing more freedom or analysing; thus, more ways to go astray. Therefore, it is important to set rules for measuring and analysing maturity of sustainable transitions in organisations, because a precise maturity level provides a foundation for achieving success in maturation and process improvement (Paulk *et al.,* 1993). These maturity levels or phases comprise measurement-driven maturity models and most of them are standards or sets of criteria for organisations to evaluate their own management excellence (AlShathry, 2016), addressing hierarchy and systemic patterns in the pathway of developing organisational capabilities (Sari *et al.,* 2020).

Corporate sustainability transitions as well fit in this definition but have a more specific context, i.e., organisations; therefore, in this research, they are viewed as long-term changes that are multi-dimensional and fundamental transformations of organisational systems towards more sustainable modes of production and consumption. The changes towards sustainability, even though discussed in the scientific literature, have significant grey areas, which create a field for discussion and exploration.

## MATURITY OF CORPORATE SUSTAINABILITY

In this paper, sustainable transitions are facilitated into sustainability maturity levels of the organisations as transitions are long-term, complex processes, making it intangible to explore. Maturity in the organisation defines to what extent the processes of organisation provide satisfactory

outcomes for the stakeholders as well as its capabilities advancement towards an effective strategy and process management (Terouhid and Ries, 2016). Nonetheless, there is no final stage of maturity in organisations, which makes it practical to describe maturity by a particular degree that measures and characterises maturity of the organisation (Andersen and Jessen, 2003). This could be applied to corporate sustainability as well, where no organisation can be maximum sustainable, having no space for improvement, thus making it pragmatic to view corporate sustainability through its maturity levels. However, the sustainability maturation in an organisation can be perceived through a lens of social issue maturation and described as an organisation being aware and taking ownership over sustainability issues, where the evolvement or maturation could be observed through phases, tasks and results (McGrail *et al.*, 2013; Hugé, Mac-Lean and Vargas, 2018). The measurement of maturity of the organisations has been discussed in scientific literature, and it is as well being analysed in the context of corporate sustainability maturation in the contemporary works of the field. The following paragraphs investigate corporate sustainability maturation and its phases in more detail.

Since sustainability transitions are long-term changes, a more defined timeframe is more beneficial and logical for the scope of the paper. Therefore, corporate sustainability transitions will be addressed through the lens of their maturity. In the process of maturation, the organisations develop skills and become more advanced in managing their activities and processes (Terouhid and Ries, 2016). The incorporation of sustainability issues into the organisation, at the best scenario, should affect all areas of corporate activities, and developing as an organisation would mean developing sustainably. Corporate sustainability maturity is going to be viewed as suggested by Hugé et al. (2018) through the key stages motivated by the social issue maturation process: Phase 1: Emergence, Phase 2: Popularisation, Phase 3: Formalisation into a governance framework and Phase 4: Maturity reflected in normative changes (i.e., taking sustainability as a norm). Most relevant maturity definitions are provided in the Table 1.

| | |
|---|---|
| "Mature – Having reached the most advanced stage in a process". | Oxford Lexico |
| "Maturity in organizations … investigates whether an organization has advanced in becoming capable of managing organizational processes and effectively proceeding towards its strategies". | Terouhid and Ries (2016, p. 913) |
| "Our view is that maturity within the business community is best explained as the sum of action (ability to act and decide), attitude (willingness to be involved), and knowledge (an understanding of the impact of willingness and action)". | Andersen and Jessen (2003, p. 458) |
| "Social issue maturation refers to growing awareness of a particular issue, and to a growing ownership of that issue by an organization, institution and/or community (McGrail et al., 2013)". | Hugé et al. (2018, p. 4279) |
| "For a presentation of sustainability in organisation, a four-level maturity grid is used: level 1 stands for a rudimentary level; maturity level 2 marks that an elementary integration of this aspect is focused on compliance with sustainability-related laws; level 3 represents a satisfying consideration and maturity; sophisticated maturity is defined by level 4". | Baumgartner and Ebner (2010, p. 81) |

Table 1. Maturity definitions

Most commonly, the process maturation refers to the capability maturity model (CMM) proposed by (Paulk *et al.*, 1993) that describes the maturation of software developing organisations. Their model provides steps and characteristics of five maturity levels that are supposed to lead to continuous process improvement when developing software. Even though referring to the quality management, the continuous process improvement is based more often on gradual, evolutionary steps, sustainable transitions than requiring revolutionary innovation and radical decisions (Geels, 2002; Rotmans and Loorbach, 2009). CMM identifies that a certain culture must be established by going step-by-step and building a foundation for the next level in an organisation in order to reach excellence and mature (Paulk *et al.*, 1993); however, maturation of sustainability might transpire in discontinuous, cyclical paths, skipping levels whilst reacting to the changing environment; the linearity of transition is not guaranteed (Hugé, Mac-Lean and Vargas, 2018). Nevertheless, the phases of sustainable transitions can be described and characterised according to their state of maturity in the internal and overall contexts. Several studies have already used a concept of sustainability related to the issue maturity (Willard, 2005; Robinson *et al.*, 2006; Baumgartner and Ebner, 2010; Marques-Mendes and Santos, 2016; Machado *et al.*, 2017; Hugé, Mac-Lean and Vargas, 2018; Bastas and Liyanage, 2019; Sari *et al.*, 2020), with the majority of scientific literature referring to the study of Baumgartner and Ebner (2010).

Maturity measurement provides insight to what extent certain processes are characterised, controlled, maintained and improved (Paulk *et al.*, 1993), evaluating whether the requirements of each maturity level have been achieved (Benmoussa *et al.*, 2015). In order to provide a more detailed approach, each maturity level should have achievable performance indicators identified (Sari *et al.*, 2020). However, measuring sustainability maturation is tricky and somewhat subjective, applying this both to internal and external measurement with only few numeric or tangible indicators to identify (i.e., sustainability report, sustainable activities, promotion, sustainable brand) and not getting lost in the qualitative information that might be misleading as well. Previous studies have used 3 to 6 levels to describe maturation, starting from the level zero, where the issue is ignored or not addressed, to level six, where the issue is the most matured. Even though not all analysed studies were describing sustainability, some insights could be applied to the field. Table 2 describes they main aspects of different possible maturity levels.

| Level | Keywords | Sources |
|---|---|---|
| 0 | Pre-compliance. The company feels no obligation beyond profits Observation. Discovery. Trigger event(s) or phenomena Negation No evidence of implementation Laggard | (Willard, 2005; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Bastas and Liyanage, 2019; Pizzutilo and Venezia, 2021) |
| 1 | Initial. The software process is characterized as ad hoc Compliance. Obey the law and all regulations | (Paulk et al., 1993; Willard, 2005; Robinson et al., 2006; |

| | | |
|---|---|---|
| | Start-up stage. Increasing awareness of benefits for business improvement<br>Rudimentary level, possibly beginning consideration of sustainability aspect<br>Emergence. Initial theorisation, discourse development.<br>Observance<br>Compliance and conformity<br>Willing to change<br>Informal or ad hoc<br>Communication and networking among different categories of actors is key<br>Informal/inadequate processes in place<br>The initial stage: the processes are undefined and applied on an ad hoc basis<br>Aware | Baumgartner and Ebner, 2010; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Machado et al, 2017; Parker et al., 2017; Hugé, Mac-Lean and Vargas, 2018; International Standard Organization, 2018; Bastas and Liyanage, 2019; Sari et al., 2020; Pizzutilo and Venezia, 2021) |
| 2 | Repeatable. Basic project management processes are established to track cost, schedule and functionality<br>Take-off stage. Developing KM strategy and working definition<br>Focus on compliance with sustainability-related laws but going slightly further<br>Popularisation. Growing awareness. Formation of issue-specific organisations<br>Efficiency<br>Operations' eco-efficiency. Operations efficiency and productivity<br>Want to change<br>Somewhat documented, partly ad hoc<br>Broadening of support base and the planning of future management steps<br>Partially implemented. Sustainability priorities are established | (Paulk et al., 1993; Robinson et al., 2006; Baumgartner and Ebner, 2010; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Machado et al., 2017; Parker et al., 2017; Hugé, Mac-Lean and Vargas, 2018; International Standard Organization, 2018; Bastas and Liyanage, 2019) |
| 3 | Defined. Documented, standardized and integrated processes into a standard software process for the organization<br>Beyond compliance. The company moves from defence to offence<br>Expansion stage. Increasing the visibility of KM leadership and initiatives<br>Challenge. Intensified societal engagement. Growing research interest<br>Strategic innovation<br>Sustainability management system<br>Ready for change<br>Known and key aspects managed<br>formal process in place, sustainability priorities are established<br>The managed stage: organisations in which process management is weak<br>Implementer | (Paulk et al., 1993; Willard, 2005; Robinson et al., 2006; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Machado et al, 2017; Parker et al., 2017; International Standard Organization, 2018; Bastas and Liyanage, 2019; Sari et al., 2020; Pizzutilo and Venezia, 2021) |
| 4 | Managed. Detailed measures of the software process and product quality are collected<br>Integrated strategy. A company committed to sustainability and integrates sustainability with key business strategies<br>Progressive stage. Improving the performance of KM activities<br>Satisfying consideration and maturity of a specific sustainability aspect<br>Governance. Policy responses. 'Big business' visionaries show leadership<br>Strategic integration<br>Network and stakeholders' integration<br>Systemic change, management, standardisation<br>Formalization, in which a commitment from the central administration and the set-up of some type of sustainability office structure is the key<br>Evidence of continuous improvement<br>Exploiter | (Paulk et al., 1993; Willard, 2005; Robinson et al., 2006; Baumgartner and Ebner, 2010; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Machado et al, 2017; Parker et al., 2017; Hugé, Mac-Lean and Vargas, 2018; International Standard Organization, 2018; Bastas and Liyanage, 2019) |
| 5 | Optimizing | (Paulk et al., 1993; Willard, |

| | |
|---|---|
| Purpose and passion. Driven by a passionate, values-based commitment to help build a better world because it is the right thing to do<br>Sustainability stage<br>Outstanding effort towards sustainability<br>Normative. Socialisation. In-depth, mainstream public understanding and ownership/ management of the issue<br>Transformational<br>Sustainable operations' integration. New business model is defined<br>Corporate culture<br>Monitored, reviewed, evaluated, implemented, maintained, planned, all is considered<br>A network of interlinked, innovative sustainability entrepreneurs is necessary<br>Fully implemented inclusive of all GRI sustainability indicators<br>The optimised stage: mature organisations in which process management is applied to measure organisational performance and evaluate the process improvement efforts/programmes<br>Pioneer | 2005; Robinson et al., 2006; Baumgartner and Ebner, 2010; McGrail et al., 2013; Marques-Mendes and Santos, 2016; Machado et al, 2017; Parker et al., 2017; Hugé, Mac-Lean and Vargas, 2018; International Standard Organization, 2018; Bastas and Liyanage, 2019; Sari et al., 2020) |

Table 2. Description of different maturity levels

However, the evaluation of corporate sustainability maturity is rather qualitative than quantitative, making it more subjective and easily biased regarding the content of information that is available on the corporate activities and initiatives. More detailed maturity assessment frameworks are used intrinsically by the organisations to evaluate themselves, while frameworks or models for external evaluation are less detailed, providing rather obscure guidelines for assessing secondary data and interviews/panel studies. The more levels there are in the maturity framework, the more detailed their descriptions and evaluation guidelines and indicators there must be to visualise the maturity of the organisational issue that is concerned. External corporate sustainability maturity assessment could be encumbered by limited secondary information availability and biased informants, who might want to favour their organisation or have limited view due to their qualifications. A more detailed description of external corporate maturity evaluation will follow in the methodology section. In order to minimise the possibility of misinterpreting information and avoid the lack of data that is available, distorting the results, it is optimal to choose less maturity levels that describe corporate sustainability. McGrail et al. (2013) uses several environmental issues, such as climate change or ozone protection, to visualise social issue maturation. Putting them together allows addressing sustainability transitions in general and how it matures in a smaller environment of an organisation rather than overall. Therefore, social issue maturation framework is selected to assess corporate sustainability maturity in this paper. The process of maturation is understood in line with growing awareness of the issue by the organisations and accordingly increasing the willingness for action and actual sustainability activities. The more mature is the organisation regarding sustainability, the more likely it is to have sustainability under its strategy, take ownership for its actions and impact on the environment. This study takes the approach of Baumgartner and Ebner (2010) and Hugé et al. (2018) and uses four corporate sustainability

maturity levels described further on. Each level is characterised by using the characteristics described in the categorisation described previously.

Level 1: rudimentary or **emergence** level where sustainability is only starting to be discussed in the organisation; no rules are set, except for those that are defined by the law. All of the aspects given in the scientific literature maturity level analysis apply that were attributed to Level 1. However, in case there are organisations that do not take any kind of ownership of sustainability-related issues in their activities, their sustainability maturity will be ascribed to Level 1.

Level 2: **popularisation**. At this point of sustainability maturation, an organisation takes a step further towards sustainability, it becomes more popular and more widely debated in the organisation; however, sustainability is only fragmentarily visible in the processes and the documentation of the organisation, or not visible at all; it might be incorporated ad hoc, having random initiatives at all levels of the organisation. Most of level 2 and 3 characteristics of the literature analysis can be attributed to this level as well, since sustainability still relies on egocentric incentives.

Level 3: **formalisation** of sustainability activities reveals the consistency in the organisation's actions to achieve it. In this case, it is well documented; the indicators are attributed to measure the performance and implement improvement strategies. When benchmarking, an organisation can be considered above the industry average in the coverage of sustainability related issues. Level 4 attributes of literature review can be assigned to this level of formalisation.

Level 4: **optimisation**. However, as complete sustainability cannot be reached, and there is always space for improvement, this level indicates an outstanding effort to achieve corporate sustainability. Level 5 of literature analysis can be used to define this level, where an organisation utilises sustainable business model, builds or takes part in sustainability related associations, involving all groups of stakeholders. At this stage, sustainability is more a norm than a concept to be debated.

## METHODS

Data triangulation is used to define the corporate sustainability maturity levels. The primary and secondary data are used to assess corporate sustainability maturity externally. Given the complexity of external assessment, four levels of corporate sustainability maturity were selected. The assessment will measure at what stage is the analysed organisation, regarding its sustainability. The sources to assess corporate sustainability maturity are corporate websites, sustainability/corporate social responsibility or related public reports and interviews.

The analytical hierarchy process (AHP) (Saaty, 1987, 1990) can be used for prioritising and weighting the criteria for corporate sustainability maturity level assessment (cf. Forman, Gass, 2001). The chosen

criteria of the interview, corporate website and sustainability reporting, by which corporate sustainability maturity level is going to be analysed, have different weights; therefore, their priorities are attributed using the literature analysis, and they are compared pairwise, using the AHP (Lin, Lin and Kuo, 2008), resulting in normalised weights. The corporate sustainability will be assessed using the following formula:

$$a \times IV + b \times CW + c \times SR = CSML; \qquad (1)$$

where IV is the maturity level from the interview, ranging from 1 to 4; CW – the maturity level from the website, ranging from 1 to 4; SR – the maturity level from sustainability report, ranging from 1 to 4; CSML – the corporate sustainability maturity level, ranging from 1 to 4; the weights named a, b and c are going to be calculated using the AHP.

When comparing pairwise, the relative importance or preference between the two elements is considered (Lin, Lin and Kuo, 2008), and the importance is attributed ranging from 1 to 9 (1 is equal importance, 9 is extreme importance). Considering that not all the organisations might report their sustainability initiatives via reports, this component is less important than criteria IV and CW. Nonetheless, it is important for the organisations to be as open as possible about their sustainability initiatives, results, and possibly, even failures. Therefore, sustainability reports are not omitted out of the overall assessment of corporate sustainability maturity. The other two components of corporate sustainability maturity levels assess content provided via interviews and in the corporate websites and will be attributed equal priorities (1). IV, compared to SR, has a strong importance, meaning that IV is more important in assessing CSML; therefore, it is attributed to priority 5. CW, compared to SR, has a very strong importance, since it is used to store the SR and other information, not only related to the corporate sustainability, which might be important as well in the overall corporate sustainability; therefore, it is attributed to priority 7. Table 3 provides the resulting weights for the criteria based on pairwise comparisons.

|   | Criteria | Priority |
|---|----------|----------|
| 1 | IV | 43.5% |
| 2 | CW | 48.7% |
| 3 | SR | 7.8% |
| $\lambda$ max=3.013 CI=0.007 CR=1.3% | | |

Table 3. Weights of criteria for the CSML assessment

The final result of corporate sustainability maturity level is calculated by using the following formula:

$$0.435 \times IV + 0.487 \times CW + 0.078 \times SR = CSML. \qquad (2)$$

The multi-methods used to assess corporate sustainability maturity are presented in Table 4.

| Dimension | Abbreviation | Description/resources | | | |
|---|---|---|---|---|---|
| Corporate sustainability maturity level assessment through interviews | IV | The keyword analysis is applied to determine the corporate sustainability maturity level. The answers for each level should encompass these or similar characteristics (keywords), which reveal certain manner or habit. | | | |
| | | Level 1: Emergence. | Level 2: Popularisation | Level 3: Formalisation | Level 4: Optimisation |
| | | ● No evidence of implementation ● Informal /inadequate processes in place ● Beginning consideration of sustainability aspect ● Compliance with the regulations | ● Partially implemented ● Efficiency oriented ● Sustainability management system might be under development ● Elementary integration of sustainability ● Randomness ● Fragmentation. | ● Compliance with additional benefits ● Strategic integration ● Satisfying consideration of specific sustainability aspects ● Network and stakeholders' integration ● Evidence of continuous improvement ● Documentation ● Reporting ● Measured performance | ● Outstanding effort towards sustainability ● Purpose and passion ● Transformational ● Sustainability associations ● Commitment ● Sustainability as a norm ● Giving back to the society |
| Corporate sustainability maturity level assessment through websites | CW | The websites of organisations were analysed by using an OSEC model proposed by Siano et al. (2016). The score from the model can relate to a certain corporate sustainability maturity level (Ramanauskaitė and Staniškienė, 2020): ● Level 1: Emergence, score < 49, ● Level 2: Popularisation, the score is between 50–69, ● Level 3: Formalisation into a governance framework, the score is between 70–79, Level 4: Optimisation, reflected in normative changes, the score is > 80. | | | |
| Corporate sustainability maturity level assessment through sustainability reports | SR | Consistency of sustainability reporting. The levels from 1 to 4 will be attributed to the corporate sustainability maturity via corporate sustainability report using the logic when an organisation has been reporting: ● Consistently for at least 5 years – level 4, ● Consistently for up to 5 years – level 3, ● Inconsistently – level 2, ● None – level 1. | | | |

Table 4. Multi-method corporate sustainability maturity assessment

*Sample*

The organisations that take interest in sustainability were selected for the review from the region of emerging economy. These organisations were selected with an interest to follow up with the interviews with them regarding their transition towards sustainability. A broad approach to one organisation might show whether they are truly interested in sustainability; therefore, the websites of organisations will be revised as well.

Nonprobability purposive sampling is selected to explore the issue of corporate sustainability maturity in this research (Daniel, 2014), where eighteen organisations from transitioning economy of Lithuania were selected for the analysis. Convenient sampling was chosen for selecting organisations that are taking interest and participating in any kind of sustainability related initiatives.

## RESULTS

The overall corporate sustainability maturity assessment of all analysed organisations is represented in Table 5.

|  | Sector | Size | IV | CW | SR | CSML | Level |
|---|---|---|---|---|---|---|---|
| OrgN | Bank | Large | 4 | 3 | 2 | 3.357 | Formalisation |
| OrgM | Support Services | Small | 4 | 2 | 4 | 3.026 | Formalisation |
| OrgR | Bank | Large | 4 | 2 | 4 | 3.026 | Formalisation |
| OrgP | Support Services | Large | 4 | 2 | 3 | 2.948 | Formalisation |
| OrgC | Support Services | Very small | 4 | 1 | 4 | 2.539 | Formalisation |
| OrgF | Academic | Large | 4 | 1 | 2 | 2.383 | Popularisation |
| OrgJ | Support Services | Medium | 3 | 2 | 1 | 2.357 | Popularisation |
| OrgK | Support Services | Small | 4 | 1 | 1 | 2.305 | Popularisation |
| OrgB | Support Services | Small | 3 | 1 | 4 | 2.104 | Popularisation |
| OrgE | Gas, Water and Multiutilities | Large | 3 | 1 | 4 | 2.104 | Popularisation |
| OrgD | Academic | Large | 2 | 2 | 3 | 2.078 | Popularisation |
| OrgA | General Industrials | Medium | 3 | 1 | 3 | 2.026 | Popularisation |
| OrgL | Public Institution | Medium | 2 | 2 | 1 | 1.922 | Popularisation |
| OrgO | Personal Goods | Medium | 2 | 2 | 1 | 1.922 | Popularisation |
| OrgI | Support Services | Very small | 3 | 1 | 1 | 1.87 | Popularisation |
| OrgG | General Industrials | Large | 2 | 1 | 1 | 1.435 | Emergence |
| OrgH | General Industrials | Medium | 1 | 1 | 1 | 1 | Emergence |
| OrgS | Industrial Transportation | Large | 1 | 1 | 1 | 1 | Emergence |

Table 5. CSML of analysed organisations

None of the analysed organisations can be attributed to the optimisation level of corporate sustainability maturity, addressing all three dimensions of the assessment tool. However, three organisations scored above 3 points in the sum. Three organisations are at the emergence level. The majority of analysed organisations can be assigned to the popularisation level.

## DISCUSSION

The organisations at the *emergence level* attribute only some attention to the sustainability issues. Even though they address that sustainability is an important issue via their interviews, no information can be found on their websites, and they do not provide sustainability reports. One of the organisations at this level even shows signs of possible greenwashing activities when communicating sustainability. Moreover, the sustainability understanding provided by these organisations is shallow, encompassing only one sustainability dimension, not seeing the bigger picture (McGrail *et al.*, 2013), i.e., how their activities interconnect and affect all aspects of sustainability. A couple of examples that illustrate how these organisations see themselves from the perspective of sustainability can be drawn from the interviews. OrgG, even having sustainability in their mission, considering more social initiatives and involving their employees, still does not consider that they "are having any kind of impact on the environment". OrgH focuses mostly on the wellbeing of employees, the digitalisation and automation of the processes. OrgS is all about profit and complying with the laws and regulations (Willard, 2005). Therefore, the organisations at the emergence level can be described as considering sustainability issues and seeing it as an important aspect of their business, but they have not moved further from complying with the laws and attributing higher importance to the documentation.

Ten out of analysed organisations are ranked at the *popularisation level*. Corporate sustainability at this level is fragmented with only some visible initiatives (International Standard Organization, 2018). Most of the organisations are efficiency oriented, trying to improve their processes and minimise the losses (Machado *et al.*, 2017). However, they conduct certain, even if random, sustainability initiatives. Interestingly, OrgF is in a transition towards sustainability. Their activities and initiatives started earlier; at the moment, the strategy and processes are revised in accordance with sustainability, consulting with the specialists in the field, putting their values and mission into strategy. Simultaneously, OrgE is a state-owned energy company that currently is participating and pushing forward the energy decentralisation in Lithuania, endorsing users to become energy producers, developing renewable energy parks, etc. Nevertheless, as required by several stakeholders, OrgE has integrated sustainability in their strategy and documentation, though revealing that some aspects, e.g., procurement documentation, are not thorough with sustainability requirements, having them described fragmentarily. However, an important notion is that OrgE does not talk about sustainability as a part of the communication strategy. Sustainability has become a much broader term, expanding throughout the organisation.

At the same level, there are organisations that, regardless of having long-term practices and involved leaders, have some shortcomings (McGrail *et al.*, 2013; Marques-Mendes and Santos, 2016), such as using plastic packaging for their products. An example could be OrgO that is vested in creating

sustainable, greener products, but sustainable solutions are "nice to have, but not for" them, because their business strategy is centred on "reasonable prices". Moreover, OrgO has a very detailed understanding of what they are doing and how; at the moment, they can achieve their level of sustainability and what is unreachable for them. Therefore, it is understandable why they choose not to produce more expensive but more sustainable products and why their communication on the website and via sustainability reports is limited. The stories of organisations at the popularisation level are different. This well illustrates their different choices, pathways and decisions towards sustainability, explaining why this level is called popularisation, having organisations that are implementing different corporate sustainability communication practices via their websites and sustainability reports and expressing various initiatives via interviews, where data seems to be scattered throughout the whole range. However, all of them, except for one, have sustainability more or less integrated into their business strategies.

There are interesting cases at the *formalisation level* as well. This level is not easily described, trying to find unified definitions for all five organisations that are included. Most likely, the corporate purpose and passion, commitment, giving back to the society and having sustainability as a norm could be considered as the conjunctive factors (Willard, 2005; Robinson *et al.*, 2006; Baumgartner and Ebner, 2010). Three organisations at this level show commitment in their reporting initiatives; one has recently started communicating its progress through the sustainability reports; sadly, one has stopped its reports that used to be regular. Four out of the five organisations at the formalisation level are at the top of the sample when communicating about sustainability via their websites. However, one organisation of the formalisation level does not have such a practice to communicate its sustainability throughout the website. All organisations at this level have revealed their transcendental stance towards sustainability.

OrgM is a non-governmental non-profit organisation that acts in the environmental protection area. Their mission is sustainability-related; thus, it obliges them to address the issues. The majority of OrgM initiatives start when their stakeholders, such as "politicians or enterprises are not doing something they should". Other initiatives of OrgM include educational activities on the environmental issues, shorter work week for their employees, multiple events for employees and other stakeholders that are organised using sustainable ideas (i.e., vegan menu), technical solutions in the office that are as environmentally friendly as possible (i.e., adobe flooring). This organisation, setting a sustainable example, encourages its customers and partners to take this approach, educates them on the matter and provides assistance. However, this organisation does not have sustainability detailed in their strategy or documented in the procedures.

Another example is OrgC that is a public relations organisation with affiliation to a larger company abroad. Even though sustainability was lowered down to them when joining a larger network, these ideas were not new to the company and were easily assimilated to the working model of the organisation. OrgC positions itself as innovator in promoting sustainability and social responsibility, providing its clients with new social projects that were not yet trending at the time. This company acts as a promoter of sustainability ideas for their clients, not tolerating greenwashing or other misinformation that the companies might want to provide to look more appealing: "we do not tell the public what does not exist; we do not say things we do not believe in. We do not work with clients we do not believe. Or, if crisis situations happen in business, we promote maximum openness, maximum transparency and customer responsibility both to our employees and society; this is the philosophy we spread widely in the field in which we work". Nonetheless, this organisation as well provides extra care for its employees, surpassing what is required of them by the law.

OrgN is the highest-ranking organisation from the selected sample regarding their corporate sustainability maturity. Even though it does not have a perfect sustainability reporting practice and reveal its sustainability via interviews at the same level as their colleagues at the formalisation level, this organisation scores satisfactory via their websites, being the only organisation attributed level 3 through the website analysis, leading it to the top of the corporate maturity levels. Contradictory, there are two banks at the formalisation level, but the one with higher score shows a demeaning stance towards OrgR (nicknaming), where OrgR revealed their sustainability only through their own initiatives. Nonetheless, OrgN reveals a strong commitment to the sustainability issues, "attributing 95% of their impact to their products and services". They as well pay close attention to the growth of the small businesses, greener energy projects etc.

As indicated by the results, the top two banks in Lithuania scored among the top five organisations from the sample, regarding their sustainability maturity. Moreover, three of the five top sample organisations expressed that they feel that the stakeholders or shareholders from Scandinavia still have an impact on their sustainability practices. There is one large organisation (OrgP) with a high level of sustainability maturity that is interested in implementing technical innovations in its field and business practice. However, not only large organisations can achieve this level. OrgM is a small non-governmental consultancy firm, and OrgC is a very small public relations organisation, where they both are very keen on promoting sustainability ideas, having a high set of sustainability-oriented values among their employees. Nonetheless, the organisations agree, that there are financial benefits in partaking in social, ethical (Chouaibi, Chouaibi and Rossi, 2022), and environmental initiatives. All of the formalisation level organisations show interest in educating broader society regarding sustainability and acting accordingly which is in line with the other research, emphasizing the

importance of stakeholder engagement (Meza-Ruiz *et al.*, 2017). Research of Nikolaou et al. (2019) proposes that both social and environmental dimensions are crucial for achieving higher sustainability performance. However, this article visualises that the higher maturity of the sample organisations, the more importance is attributed to social aspects.

## CONCLUSIONS

The proposed corporate sustainability maturity assessment is a contribution to maturity assessment and the tool proved to be useful evaluating organisations in the context of Lithuania, enabling the evaluator to distinguish differences and similarities. The four selected maturity levels include: emergence where organisation is at the starting point of considering sustainability in its activities and the overall impact to the environment in the broad sense; popularisation where organisation has increased interest among the stakeholders and some standardisation and setting of rules begin to form but still fragmentarily; formalisation where sustainability is formalised into the strategy and everyday routines and activities of the organisation, building on the values; optimisation where sustainability becomes as a norm, a transcendental perception is incorporated into routines, strategies and activities, building sustainability as a norm among the stakeholders and society. Moreover, this approach allows addressing corporate sustainability maturity externally, as more complex maturity models with larger number of levels requiring internal approach and analysis.

The selected organisations for the sample of the empirical research did not reach the highest maturity level, i.e., optimisation. The top five organisations of the sample revealed the qualities that are attributable to the formalisation level of corporate sustainability maturity. These organisations show passion, purpose and commitment towards sustainability: a wish to give back to the society and educate it regarding sustainability. However, some formal practical implications might be hindering the process of achieving the optimisation level, e.g., the lack of strategic implementation, documentation, measurement of performance. There was no significant distinction between the size or sector of the organisations and their achieved maturity level. However, the two banks that were present in the sample scored among the top three organisations, regarding their corporate sustainability maturity. This indicates that some sectors might be more prone to implement sustainability and communicate it, as they feel their impact on the overall environment. Moreover, a huge impact from the Scandinavian stakeholders is visible as three of five top organisations are in relation to the Nordic countries, expressing the sense of their influence.

# REFERENCES

AlShathry, O. (2016) 'Business process management: a maturity assessment of Saudi Arabian organizations', Business Process Management Journal, 22(3), pp. 507–521. doi: 10.1108/BPMJ-07-2015-0101.

Andersen, E. S. and Jessen, S. A. (2003) 'Project maturity in organisations', International Journal of Project Management. Elsevier Science Ltd and IPMA, 21(6), pp. 457–461. doi: 10.1016/S0263-7863(02)00088-1.

Bastas, A. and Liyanage, K. (2019) 'Setting a framework for organisational sustainable development', Sustainable Production and Consumption. Elsevier B.V., 20, pp. 207–229. doi: 10.1016/j.spc.2019.06.005.

Baumgartner, R. J. and Ebner, D. (2010) 'Corporate sustainability strategies: Sustainability profiles and maturity levels', Sustainable Development, 18(2), pp. 76–89. doi: 10.1002/sd.447.

Benmoussa, R. et al. (2015) 'Capability/maturity based model for logistics processes assessment', International Journal of Productivity and Performance Management. Emerald Group Publishing Limited, 64(1), pp. 28–51. doi: 10.1108/IJPPM-08-2012-0084.

Chouaibi, S., Chouaibi, J. and Rossi, M. (2022) 'ESG and corporate financial performance: the mediating role of green innovation: UK common law versus Germany civil law', EuroMed Journal of Business, 17(1), pp. 46–71. doi: 10.1108/EMJB-09-2020-0101.

Daniel, J. (2014) 'Choosing Between Nonprobability Sampling and Probability Sampling', in Sampling Essentials: Practical Guidelines for Making Sampling Choices. 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc., pp. 66–80. doi: 10.4135/9781452272047.n3.

Dyllick, T. and Hockerts, K. (2002) 'Beyond the business case for corporate sustainability', Business Strategy and the Environment. Wiley Online Library, 11(2), pp. 130–141. doi: 10.1002/bse.323.

Edgeman, R. and A. Williams, J. (2014) 'Enterprise self-assessment analytics for sustainability, resilience and robustness', The TQM Journal. Edited by D. Madhav Sinha. Emerald Group Publishing Limited, 26(4), pp. 368–381. doi: 10.1108/TQM-01-2014-0012.

Forman, E. H. and Gass, S. I. (2001) 'The Analytic Hierarchy Process—An Exposition', Operations Research, 49(4), pp. 469–486. doi: 10.1287/opre.49.4.469.11231.

Geels, F. W. (2002) 'Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study', Research Policy. North-Holland, 31(8–9), pp. 1257–1274. doi: 10.1016/S0048-7333(02)00062-8.

Hansmann, R., Mieg, H. A. and Frischknecht, P. (2012) 'Principal sustainability components: empirical analysis of synergies between the three pillars of sustainability', International Journal of Sustainable Development & World Ecology, 19(5), pp. 451–459. doi: 10.1080/13504509.2012.696220.

Herrick, C. N. and Pratt, J. L. (2013) 'Communication and the narrative basis of sustainability: Observations from the municipal water sector', Sustainability (Switzerland), 5(10), pp. 4428–4443. doi: 10.3390/su5104428.

Hugé, J., Mac-Lean, C. and Vargas, L. (2018) 'Maturation of sustainability in engineering faculties – From emerging issue to strategy?', Journal of Cleaner Production, 172, pp. 4277–4285. doi: 10.1016/j.jclepro.2017.07.143.

Humanities Education Centre (2009) No Title. Available at: https://www.globalfootprints.org/sustainability/ (Accessed: 13 February 2019).

International Standard Organization (2018) 'ISO 9004:2018—Managing for the sustained success of an organization—a quality management approach'. Geneva, Switzerland: ISO copyright office.

Jouber, H. (2023) 'Environmental sustainability performance and shareholder value: an international fuzzy-set qualitative comparative analysis', EuroMed Journal of Business. doi: 10.1108/EMJB-09-2022-0161.

Lin, K., Lin, C. and Kuo, W. (2008) 'The adoption and management of interactive digital TV commerce in Taiwan', International Journal of Management, 25(2), pp. 287–299. Available at: https://espace.curtin.edu.au/bitstream/handle/20.500.11937/35433/118060_Adoption%2520and%2520management%2520Digital%2520TV.pdf?sequence=2&isAllowed=y.

Machado, C. G. et al. (2017) 'Framing maturity based on sustainable operations management principles', International Journal of Production Economics. Elsevier B.V., 190(December 2016), pp. 3–21. doi: 10.1016/j.ijpe.2017.01.020.

Markard, J., Raven, R. and Truffer, B. (2012) 'Sustainability transitions: An emerging field of research and its prospects', Research Policy. Elsevier, 41(6), pp. 955–967. doi: 10.1016/j.respol.2012.02.013.

Marques-Mendes, A. and Santos, M. J. (2016) 'Strategic CSR: An integrative model for analysis', Social Responsibility Journal, 12(2), pp. 363–381. doi: 10.1108/SRJ-04-2015-0055.

McGrail, S. et al. (2013) 'Diagnosing and anticipating social issue maturation: Introducing a new diagnostic framework', Futures. Elsevier Ltd, 46, pp. 50–61. doi: 10.1016/j.futures.2012.10.001.

Meza-Ruiz, I. D. et al. (2017) 'Measuring Business Sustainability Maturity-levels and Best Practices', Procedia Manufacturing. The Author(s), 11(June), pp. 751–759. doi: 10.1016/j.promfg.2017.07.176.

Nikolaou, I. E., Tsalis, T. A. and Evangelinos, K. I. (2019) 'A framework to measure corporate sustainability performance: A strong sustainability-based view of firm', Sustainable Production and Consumption, 18, pp. 1–18. doi: 10.1016/j.spc.2018.10.004.

Parker, D. W. et al. (2017) 'Operations sustainability maturity model: preliminary findings of financial services in developing and developed countries', Measuring Business Excellence, 21(4), pp. 309–336. doi: 10.1108/MBE-08-2016-0044.

Paulk, M. et al. (1993) Capability Maturity Model for Software, Version 1.1. Pittsburgh, Pennsylvania: Software Engineering Institute, Carnegie Mellon University.

Pizzutilo, F. and Venezia, E. (2021) 'On the maturity of social responsibility and sustainability integration in higher education institutions: Descriptive criteria and conceptual framework', The International Journal of Management Education, 19(3), p. 100515. doi: 10.1016/j.ijme.2021.100515.

Ramanauskaitė, J. and Staniškienė, E. (2020) 'Revealing corporate sustainability maturity levels through corporate websites', in CISABE'2020: 8th international scientific conference Changes in social and business environment, October 1, 2020, Panevėžys, Lithuania. Bologna: Editografica, pp. 51–59. Available at: http://www.edlearning.it/ebook/DX01_CISABE.pdf.

Robinson, H. S. et al. (2006) 'STEPS: A knowledge management maturity roadmap for corporate sustainability', Business Process Management Journal, 12(6), pp. 793–808. doi: 10.1108/14637150610710936.

Rotmans, J. and Loorbach, D. (2009) 'Complexity and transition management', Journal of Industrial Ecology, 13(2), pp. 184–196. doi: 10.1111/j.1530-9290.2009.00116.x.

Saaty, R. W. (1987) 'The analytic hierarchy process—what it is and how it is used', Mathematical Modelling, 9(3–5), pp. 161–176. doi: 10.1016/0270-0255(87)90473-8.

Saaty, T. L. (1990) 'How to make a decision: the analytic hierarchy process', European journal of operational research. Elsevier, 48(1), pp. 9–26.

Sari, Y. et al. (2020) 'A corporate sustainability maturity model for readiness assessment: a three-step development strategy', International Journal of Productivity and Performance Management, ahead-of-p(ahead-of-print). doi: 10.1108/IJPPM-10-2019-0481.

Siano, A. et al. (2016) 'Communicating sustainability: an operational model for evaluating corporate websites', Sustainability. Multidisciplinary Digital Publishing Institute, 8(9), pp. 1–16.

Terouhid, S. A. and Ries, R. (2016) 'Organizational sustainability excellence of construction firms – a framework', Journal of Modelling in Management, 11(4), pp. 911–931. doi: 10.1108/JM2-06-2014-0055.

del Vecchio, P. et al. (2022) 'Circular economy business model for smart tourism: the case of Ecobnb', EuroMed Journal of Business, 17(1), pp. 88–104. doi: 10.1108/EMJB-09-2020-0098.

Willard, B. (2005) 'The next sustainability wave (book excerpt)', Ubiquity, 2005(June), pp. 1–1. doi: 10.1145/1071916.1071917.

# PROFESSIONALIZATION DEGREE AND REVENUE MANAGEMENT CAPABILITY FOR AIRBNB HOSTS

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## ABSTRACT

This study explores how a revenue management capability can be created by Airbnb hosts and the role played by the professionalization degree, defined as the number of listings managed by a host. The theoretical lenses used by this study is the resource-based. Based on previous studies on revenue management in the field of hospitality, a wide list of routines, skills, know-how and coordination mechanisms are considered to explain how the revenue management capability can be created by a host.

The study is based on qualitative data collected through interviews in the Milan destination. In line with previous studies, three different groups of hosts were identified. The interviews were recorded, transcribed and coded using the software NVIVO. Results reports strong differences between the three groups of hosts and especially between single and big hosts (those managing ten or more listings). The goals itself are different: while single hosts prefer to select guest and maximize price, big hosts, supporting higher fixed costs, are strongly focused on revenue. Small hosts are widely involved in the operating processes (check-in, cleaning, guest interaction) and in many cases the short-term rental is only an additional activity (the main work in another). Therefore, the time dedicated to data collection and revenue management strategy is limited. The opposite is for big hosts that are usually organized as a company with employees specialized per function and with a strong focus on revenue maximization. The paper is supportive for the emerging idea of professionalization degree.

*Keywords: Revenue management capability; Airbnb; professionalization degree; individual hosts; professional hosts; data analysis; dynamic pricing; benchmarking; single host; corporate host.*

## INTRODUCTION

This study, that based on Milan hosts' interviews, explores the links between professionalization degree and revenue management capability creation. Four theoretical blocks, later presented in the literature review section, are analyzed.

The large diffusion of the sharing economy and in particular the phenomenon of short-term rentals (STR) has attracted the interest of many supply papers, mainly focused on price/revenue determinants (Sainaghi, 2020a). This literature is growing and based on quantitative data has identified many price antecedents and more generally pricing strategies. Size, listing amenities, host variables, accessibility, guest reviews and contractual terms are the main groups of variables used (Sainaghi & Chica-Olmo, 2022; Vassilikopoulou et al., 2022).

The previous studies agree that host professionalization has an impact on revenue management and pricing strategy. Professional hosts are more oriented on revenue rather than on price maximization (Oskam, et al., 2018). At the same time, some previous articles agree that this quantitative approach is unable to explore why professional host are more efficient and in particular how they are able to create a revenue management capability (Cocola-Gant, et al., 2021). The theoretical lenses used by this study is the resource-based view and in particular the capability approach. Resources are the assets that the firm possesses or controls, whereas capabilities refer to the firm's skills in exploiting and combining these resources through organizational routines (Amit & Schoemaker, 1993). Previous studies on hosts suggest the presence of some relevant capabilities, as the preparation of the listing, commercialization, interaction with guests, financial capability (Cocola-Gant, et al., 2021). This study focuses on the commercialization capability, defined in this paper as revenue management capability.

## PROFESSIONALIZATION DEGREE AND HOST PERFORMANCE

Some quantitative studies exploring the price determinants, revealed that professional hosts achieved higher (Chica-Olmo, et al., 2020), lower (Tong & Gunter, 2020) or even marginal positive or negative effects on STR rates. Therefore, professionalization degree appears generating controversial effect on STR price (Sainaghi, 2020a). However, these ambiguities are mainly related to the focus on price rather than on revenue (Sainaghi, 2020b). In fact, other quantitative supply studies agree that professional hosts achieve higher revenue than unprofessional hosts (Sainaghi, et al., 2021). The professionalization degree is usually operationalized considering the number of listings managed (Abrate, et al., 2022) eventually integrated with other variables, as experience, type of listings and year-round availability (Bosma, 2021). While in many studies there is a juxtaposition between professional and individual hosts, recent articles introduced the idea of professionalization degree (Bosma, 2021). In big cities, there are dozens of thousands of hosts. The twofold segmentation (professional and non-professional) appears too simplistic. The reality of the STR hosts is more complex and the boundary between different types of providers is more nuanced. The professionalization degree favoured the recent development of some new type of hosts. For example, the corporate hosts were threefold segmented (Cocola-Gant, et al., 2021), while in the case of marginal hosts some analytic distinctions have been

proposed (Semi & Tonetta, 2021) or the hosts' segmentation based on the number of listings managed has been enlarged, distinguishing between single, two listings, three listings, four to ten listings or more than ten listings managed (Sainaghi & Baggio, 2021).

Considering the explorative nature of this study, the professionalization degree in the current paper has been operationalized considering the number of listings managed. Furthermore, the focus was only on host managing an entire apartment or house, excluding shared room providers. This choice is related to the goal of this paper, that is exploring the revenue management capability.

## REVENUE MANAGEMENT CAPABILITY

This section identifies which resources can generate a revenue management capability. The resource-based view defines resources as stock of factors that are own or controlled by a company, while capabilities focus on firm ability to use these resources, usually in combination (Amit & Schoemaker, 1993). Resources can be tangible and intangible, human and financial. Following a resource-based view of the firm, the pricing process is considered a capability that combines routines, skills and coordination mechanisms (Dutta, et al., 2003).

Based on previous studies on revenue management in the field of hospitality, a wide list of routines, skills, know-how and coordination mechanisms are considered to explain how the revenue management capability can be created by a host. In particular, the revenue management process can be segmented into four major components: i) identifying the required information to set the revenue management strategy, ii) taking strategic and then tactical pricing and revenue management decisions, iii) managing the communication and interaction with the guests, and iv) the availability of a software dedicated to revenue management.

The first activity focuses on the information necessary to set up the revenue management capability and includes, among others the following resources, skills, and coordination mechanisms: i) data availability, ii) data analysis know-how, iii) benchmarking know-how, iv) demand forecasting know-how. The availability of data can support the revenue management process, especially if they are well-organized and simply to access. However, data sometimes are available, but the host has not the skills to use them. For this reason, the data analysis know-how is very relevant for the entire revenue management process. Rates should generate a transaction between the landlord and the guest; however, STR providers operate under concurrence. Benchmarking know-how is considered an important skill to understand who the most relevant competitors are, to scan their rates and to consider them in the revenue management process. Rates focus on the future transactions, therefore when a host decide the prices should have an idea about the future market condition. This requires a

demand forecasting know-how, able to consider if the demand is rising or not, if the destination offers some special events, and so on.

The second component can be defined as pricing formulation and is the heart of revenue management capability. It includes mainly the following sub-topics: i) dynamic pricing know-how, ii) revenue rather price maximization focus, iii) multi-channel ability, iv) presence of a revenue manager. Dynamic pricing know-how is able to improve the listing revenue, but this pricing strategy generates additional work. In fact, to change continuously price requires knowing the destination seasonal periods, the rates proposed by competitors, the saturation degree of host capacity. Not surprisingly, many hosts prefer to achieve less revenues but avoiding this additional work. Some papers analysing price determinants revealed that professional hosts apply lower rates rather than single-unit hosts, or, more generally, the relationship between commercial host and price is controversial (Sainaghi, 2020). However, other studies shown an interesting relationship, professional hosts achieve higher revenue, rather than mom-and-pop providers. Said differently, what really changes comparing professional and single-listings providers is a different focus. While single providers search price maximization, professional hosts are more interested on revenue maximization. To improve the listing revenues, the hosts can use (simultaneously or not) more than one channel. In the study of corporate hosts, three main platforms are used: Airbnb, Booking.com and VRBO (Cocola-Gant, Jover, Carvalho, & Chamusca, 2021). Multi-channel ability is therefore needed, including the ability to set-up the rates for the different platforms, to avoid rate disparity or overbooking. Finally, the presence of a revenue manager or a host with a background in this field represents a crucial point, able to change and improve the entire revenue management activity. The revenue manager can be an external consultant that support the host (Cocola-Gant, et al., 2021).

The third component focuses on managing, communicating, and interacting with the guests. The skills, resources and routines are many. In this study we focus on. i) ability to interact with potential clients and ii) reputation. The ability to interact with potential clients plays a pivotal role. As confirmed by some quantitative studies, response rate and time positively affects the listing results, as well as the number of photos published (and their quality). Moving to reputation some items refer to the number of reviews collected by the listing, the overall rating, the presence of superhost badge, the host experience.

Finally, a coordination mechanism is introduced and is the presence of a revenue management software. The availability of a revenue software plays a crucial role. In fact, all the items previously identified are influence by the software – for example the software can store data, can support benchmarking activity, demand forecasting, defining and dynamically adjusting the price, but can also help the host to quick respond to potential guest or managing some reputation indicators.

## METHODOLOGY

Considering the explorative nature of this research, a qualitative approach based on interviewees was adopted, in line with some recent papers focused on STR hosts (Cocola-Gant, et al., 2021). These studies usually realize 30-40 interviewees mainly on Airbnb hosts, using semi-structured questionnaires (Bosma, 2021). When saturation is achieved, the authors report the main findings using quotations and typically describing categories (as different types of hosts). The same approach was used in the current study.

The sample was extracted by the AirDNA database from Milan. Milan is the second leading Italian destination after Rome and attracts different targets, as business, leisure and trade fair. Focusing on this last segment, Fiera Milano organizes dozens of events (Sainaghi & Mauri, 2018). Therefore, in the Milan city there are continuous change in off- and on-pick (Sainaghi, et al., 2018), constituting an ideal setting for exploring the creation of a revenue management capability (Sainaghi, et al., 2018).

As typical for qualitative research, a polar approach was adopted in this study, in order to understand how the professionalization degree can help the emergence of a revenue management capability (Eisenhardt, 1989). In line with previous studies, three different groups of hosts where identified: i) single hosts (also called group one), ii) hosts managing 3-5 listings (group two), iii) hosts managing more than 10 listings (group 3). The host segmentation based on listings managed was used in some previous studies (Deboosere, et al., 2019; Sainaghi & Baggio, 2021). Only hosts managing entire apartment/house were considered. The final sample includes 27 interviews: interviews numbered 1-11 for single hosts, interviews numbered 12-20 for 3-5 listings and interviews numbered 21-27 for hosts managing more than 10 listings. All the interviews were recorded, transcribed, and coded using NVIVO software.

## FINDINGS

This section is based on the four theoretical blocks depicted by the literature, as previously discussed. The following sub-headings reports the main evidence emerged from the interviewees.

*Information and data analysis skills*

The code data availability illustrates some relevant differences moving from single to multiple hosts. Single host usually do not have a dedicated register with all the past data; they use the repository offered by Airbnb but mainly for fiscal and administrative purposes. "The archive is used only for personal information and documentation for any checks, including for tax purposes" … "I don't consider the historical archive important for formulating prices" (interview #5). The opposite is for big hosts (group 3). "The reservation archive is entered in the PMS (Property Management Systems). The

data is analysed directly by the system. The historical data are our starting point for defining the future rates" (interview #22). The second group oscillates between hosts that do not consider very relevant the historical data and others that invest more time and attention. The threshold is again the presence or not of a software. "It has a historical archive of reservations, which can be consulted in the company management system. The software proposes the prices charged in the past and the occupancy rate. The wheelbase data is very useful for orienting the tariffs to be applied" (interview #18).

Data analysis know-how is the second code. Many hosts of the first group invest limited time for analyzing data. "Historical data is not used to formulate prices" (interview #9) or "I have a historical archive of bookings, but it doesn't seem very important to me and then it's complicated to extract the information" (interview #11). Again, the approach of the third group appears the opposite. Thanks to the software, the data process analysis is simple, fast, and is made periodically. "We collect a lot of data: past sales data, competitors' prices, offers near our apartments, events, weather (it's not the same thing as a sunny weekend or a rainy one). Thanks to the software we can combine all this data on one platform and examine it easily. We regularly set aside time for this activity" (interview #22).

Benchmarking know-how is perceived an important activity during the start-up by the single host. "I spent a lot of time for benchmarking activity at the start-up of my business. Currently I dedicate about an hour a month" (interview #3). Some hosts affirm the relevance of benchmarking however they have not time enough to do this activity. "I'm aware about the importance of benchmarking. It would be useful to do so but I have not the necessary time to dedicate to it" (interview #9). For the second group, benchmarking is an ordinary activity perceived relevant. "I look on Airbnb and Booking what are the prices in the area and the services that are offered. This activity is useful for defining prices and it requires at least ten hours a month" (interview #19). Big hosts (group three) declare the strategic relevance of benchmarking. "I constantly look at the websites of competitors, I observe their prices, I consider the quality of their listings, the area. This continuous observation helps me a lot in changing the price frequently. I certainly dedicate a lot of time to this activity which is one of the most important" (interview #21). "I dedicate at least an hour a day to this activity. It is essential for my work" (interview #24).

Concerning demand forecasting know-how, the city of Milan is registering a strong turnaround after the Covid. The demand is growing, and the consumer behaviour patterns are changing. For this reason, some hosts (small and big) consider unpredictable the demand. "After the pandemic there is an incredible demand" (interview #13). "The prices we are practicing from May 2022 onwards are very high compared to the past. There is a boom in requests" (interview #24). "After the pandemic, the seasonality of Milan has changed: there is almost always a very high demand" (interview #27). With

this premise, small hosts are not able to predict the tourism demand. "I wouldn't know how to predict the number of customers or even what data I could use" (interview #4). The second group forecasts demand considering the Milanese seasonality. "Thanks to the calendar of events in Milan, I am able to roughly predict the number of customers" (interview #17). The professional hosts (group three) use mainly the software and the number of requests/reservations. "To predict potential demand I use price lab, a module of our revenue management software" (interview #22). "The intensity of the requests we receive, together with the reservations made well in advance, help us to estimate the expected demand" (interview #27). The availability of historical data are also very important for demand forecasting. "We predict demand based on our experience and the historical data (the company is 12 years old)" (interview #25).

The findings confirm the relevance of the variables taken from the literature, on one side, and the importance effects plaid by professionalization degree, on the other hand.

*Pricing and revenue management decisions*

This second group of activities and routines plaid a crucial for understanding the role of professionalization. Dynamic pricing know-how is probably a key threshold between small and big Airbnb providers. Single hosts tend to use one static price or to articulate the rates in few classes of price. "For my apartment, I consider a price of €80 to be optimal" (interview #1). "I set the price 10 years ago and have broadly held it constant" (interview #3). "Prices from the apartment are always quite similar" (interview #4). "If we take a year as a reference, I use 2 or 3 different prices" (interview #5). The second group abandons the static price and uses a deeply price discrimination. "The prices of the apartments during the course of the year are differentiated mainly when there are events" (interview #17). Furthermore, the price variation increases. "Within a year, I use about four significantly different prices" (interview #18). Big hosts enlarge the price discrimination or adopt a dynamic pricing approach. "In a year I use at least 6-7 different prices and then further changes are made within them" (interview #26). "I don't use price ranges but continue to rebalance rates based on demand. The dynamism of the price is guaranteed by the daily observation of the market" (interview #21). "Every day I apply a different price. We do the same work that hotels do" (interview #22).

Concerning revenue or price maximization focus the interviews confirms important differences among the groups. Single hosts are more oriented on price. "For me it is more important to have a high price rather than higher revenues" (interview #3). "I prefer to have a high price and less reservations" (interview #6). Sometimes a higher price is perceived as a useful tool to select guest and avoid problems. "Lowering prices would bring disrespectful people to my house who are different from my target" (interview #15). The quote, despite focuses on the second group of hosts emerges in

many single host interviews. Again, big hosts show a completely different approach. "Our revenue management system helps us fill apartments at the optimal price. Every unsold night is a loss of revenue" (interview #22). "We have fixed costs to cover, which is why it is more important to generate high revenues" (interview #24).

Big host show a clear multi-channel ability. "To sell apartments, I use many different portals: Airbnb, Booking, Expedia, TripAdvisor, Trivago, HomeAway, VRBO, casavacanza.it, Home Togo and others. The most efficient channels are Booking and Airbnb" (interview #22). The presence of a channel management software plays a pivotal role. "Multi-channel is managed through a management system called "cross booking", a channel manager" (interview #24). Some hosts have dedicated employees responsible for this activity. "Multi-channel is managed through a channel manager and the people in charge of booking" (interview #24). Also, many hosts of the second group show a multi-channel ability. "To sell apartments, I use Airbnb, Booking and our site" (interview #12). However, the prevalent focus is on Airbnb. "Booking generates more traffic, but I prefer working with Airbnb because these customers are much more polite. They have the idea that they come to my house, and they have respect" (interview #12).

Moving to presence of a revenue manager, the first two groups are not big enough to have a dedicated person in staff. "I formulate the prices" (interview #3). "I've never felt the need to have external support or a dedicated figure to formulate the prices" (interview #12). Some big hosts have a revenue manager in their staff. "The prices are formulated by the staff who take care of the booking and are familiar with the principles of revenue management" (interview #24). Nearly all hosts in group three have attended price training, while hosts in groups one and two report the opposite.

Pricing emerges as a central topic able to differentiate single versus multi listings hosts. The qualitative evidence confirms the importance of dynamic pricing, as shown in quantitative studies (Abrate et al., 2022).

*Guest communication and interaction*

The ability to interact with potential clients is a crucial activity for Airbnb hosts. Single hosts usually are enthusiastic to have a personal relationship with guests. In fact, these hosts are involved in many operating activities, as check-in, cleaning service (sometimes with the support of collaborators), and guest assistance. "I personally welcome my guests upon check-in" (interview #2). "The interaction with the potential customer is very intense. I also like to provide information about Milan. It's more of a friendly relationship than a professional one" (interview #5). The answers are similar for hosts belonging to the second group. By contrast, in the third group the interaction is partially mediated by the employees and collaborators, on one side, and technology, on the other. "We have digitized the

entire check-in process, thanks to digital locks" (interview #22). "Our company has eight employees. We also make use of external collaborators. Check-in is done by our staff" (interview #25). Response rate and response time is very efficient for all the hosts, without significant differences concerning the number of listings. In the interaction process the listing photos are considered very relevant. While single hosts prefer to realize by themselves the pictures, big hosts (group three) use more intensively professional photographers. "I've realized the photos by myself. I'd like to change them and have better quality images, but I've never trusted a professional photographer" (interview #2). "The photos used on the platforms are not changed often. However, if an apartment does not sell as it should, we intervene, perhaps even just changing the order and putting the most beautiful as the first photo. The photos were taken by a professional photographer who specializes in interiors" (interview #22). Another important difference between the host groups concerns the guest selection. Single hosts are more sensitive to select their guests and to avoid problems. "I do everything by myself. I host people in my house, and I want to know who comes" (interview #1). "I no longer use Booking because customers arrive who think they are in the hotel and therefore leave dirt, break objects and say nothing" (interview #12). Host belonging to the third group usually adopt instant booking and therefore do not select their guests. "We spend little time interacting with the customer before booking as we have adopted the instant booking system" (interview #22).

The second item is reputation. Hosts consider very important the reviews, more the score than the number. Reviews as so relevant that some Airbnb providers, during the start-up, prefer to apply cheap price to attract many guests and collect reviews. "During the first four months we applied very low prices. It has served to have a greater number of reservations and therefore increase the number of reviews. Once we reached a reasonable number, we were able to increase the prices" (interview #6). "Reviews are a key element in building trust to the listing" (interview #12). A difference among hosts emerges considering the ability of reviews to guide listing and service improvements. Host belonging to the first two groups usually have a strong and personal interaction with guests. Therefore, they are able to intervene when problems arise. "Weaknesses almost never emerge from the reviews because I intervene promptly during the stay when problems arise" (interview #14). By contrast, big hosts use more intensively reviews for identifying problems. "I happened to intervene on weaknesses that emerged from the reviews: for example, if it happens several times that they tell me that the apartment is too hot, I try to boost the air conditioning" (interview #22). The majority of big hosts have reported concrete examples of improvements introduced thanks to the reviews. Another important difference regards the time dedicated analysing the reviews. While small hosts affirm only to quickly read the reviews – "I spend little time analysing the reviews" (interview #4) –, large hosts invest more

time. "Every time I check out, I scan the reviews. They help me understand how each apartment is positioned" (interview #21).

Again, the professionalization degree deeply changes the guest interaction and the relevance of reputation. Concerning the guest relationships, professional hosts manage mainly indirectly the ties with clients, using technology, the opposite choice is made by the single host.

*Revenue management software*

The presence of software has a strong influence on the entire pricing process. Single hosts do not use software and Excel file. The support provided by the Airbnb platform is enough. Not surprising the multi-channel approach is not used and prices are mainly static or basically discriminated. By contrast, the third group of hosts largely adopt a software, mainly related to the benchmarking and pricing activity.

## CONCLUSIONS

Focusing on theoretical conclusions, the study supports the host classification in three proposed groups. The first threshold is one and the second is around ten and support the idea of professionalization degree. The rising number of managed listings, in fact, require a progressive creation of a firm, with employees and external collaborators, rising the fixed costs. By contrast, single host are widely involved in the operating activities (usually they realize everything by their self), are less skilled, especially in providing and using information to orient the pricing. Furthermore, the goals are different. Small hosts are more interested to select their guests and to preserve the listing. Therefore, they prefer maximizing price rather than revenue. Big hosts are organized as company, with employees and fixed costs. Therefore, they are "number" driven, researching more volume and revenue than price. Second, the four theoretical blocks used to understand the revenue management capability are relevant in explaining why and how the professionalization degree is able to change the pricing process.

The study is reach of possible empirical implications for Airbnb hosts and more generally for people involved in short-term rentals. The four blocks and sub-blocks provide concrete examples about the pricing formulation. Examples include how to organize and manage information and data analysis skills, as an important step to orient the pricing process. Moving to price, the relevance of dynamic versus static price and price versus revenue maximization play a central role. Professional host tend to adopt multichannel structure. The relationships between hots and guests are centered, in the case of single providers, on direct and personal ties. In the case of professional hosts, the guest interaction is

often mediated by technology (self-check-in, WhatsApp, Internet) and/or staff. The presence or absence of software is crucial to manage the entire revenue management capability.

The main study limit is the space constraint that limited the findings. For this reason, the article reports only the pricing components without providing the "overall picture" (how the four blocks and the sub-topics interact). By contrast the number of interviews is not perceived a limitation. In fact, there is a high overlapping between the interviews (especially for host pertaining to group one and two) and saturation is quickly reached. Said differently, additional interviews tend to repeat the same items.

## REFERENCES

Abrate, G., Sainaghi, R. and Mauri, A. G. (2022) "Dynamic pricing in Airbnb: Individual versus professional hosts", Journal of Business Research, Vol. 141, pp. 191-199.

Amit, R. and Schoemaker, P. J. H. (1993) "Strategic assets and organizational rent", Strategic Management Journal, Vol. 14, No. 1, pp. 33-46.

Bosma, J. R. (2021) "Platformed professionalization: Labor, assets, and earning a livelihood through Airbnb". Environment and Planning A: Economy and Space, Vol. 54, No. 4, pp. 595-610.

Chica-Olmo, J., González-Morales, J. G. and Zafra-Gómez, J. L. (2020) "Effects of location on Airbnb apartment pricing in Málaga", Tourism Management, Vol. 77, 103981.

Cocola-Gant, A., Jover, J., Carvalho, L. and Chamusca, P. (2021) "Corporate hosts: The rise of professional management in the short-term rental industry", Tourism Management Perspectives, Vol. 40, 100879.

Deboosere, R., Kerrigan, D. J., Wachsmuth, D. and El-Geneidy, A. (2019) "Location, location and professionalization: a multilevel hedonic analysis of Airbnb listing prices and revenue", Regional Studies, Regional Science, Vol. 6, No. 1, pp. 143-156.

Dutta, S., Zbaracki, M. J. and Bergen, M. (2003) "Pricing process as a capability: A resource-based perspective", Strategic management journal, Vol. 24, No. 7, pp. 615-630.

Eisenhardt, K. M. (1989) "Building Theories from Case Study Research", Academy of Management Review, Vol. 14, No. 4, pp. 532-550.

Oskam, J., van der Rest, J. P. and Telkamp, B. (2018) "What's mine is yours—but at what price? Dynamic pricing behavior as an indicator of Airbnb host professionalization", Journal of Revenue and Pricing Management, Vol. 17, No. 5, pp. 311-328.

Sainaghi, R. (2020a) "Determinants of price and revenue for peer-to-peer hosts. The state of the art", International Journal of Contemporary Hospitality Management, Vol. 33, No. 2, pp. 557-586.

Sainaghi, R. (2020b) "The current state of academic research into peer-to-peer accommodation platforms", International Journal of Hospitality Management, Vol. 89, 102555.

Sainaghi, R., Abrate, G. and Mauri, A. (2021) "Price and RevPAR determinants of airbnb listings: convergent and divergent evidence", International Journal of Hospitality Management, Vol. 92, 102709.

Sainaghi, R. and Baggio, R. (2021) "Are mom-and-pop and professional hosts actually competing against hotels?", International Journal of Contemporary Hospitality Management, Vol. 33, No. 3, pp. 808-827.

Sainaghi, R. and Chica-Olmo, J. (2022) "The effects of location before and during COVID-19: Impacts on revenue of Airbnb listings in Milan (Italy)", Annals of Tourism Research, Vol. 96, 103464.

Sainaghi, R. and Mauri, A. (2018) "The Milan World Expo 2015: hospitality operating performance and seasonality effects", International Journal of Hospitality Management, Vol. 72, pp. 32-46.

Sainaghi, R., Mauri, A. and d'Angella, F. (2018) "Decomposing seasonality in an urban destination: the case of Milan", Current Issues in Tourism, Vol. 22, No. 16, pp. 1919-1924.

Sainaghi, R., Mauri, A., Ivanov, S. and d'Angella, F. (2018) "Mega events and seasonality: The case of the Milan World Expo 2015", International Journal of Contemporary Hospitality Management, Vol. 31, No. 1, pp. 61-86.

Semi, G. and Tonetta, M. (2021) "Marginal hosts: Short-term rental supp.liers in Turin, Italy", Environment and Planning A: Economy and Space, Vol. 53, No. 7, pp. 1630-1651.

Tong, B. and Gunter, U. (2020) "Hedonic pricing and the sharing economy: how profile characteristics affect Airbnb accommodation prices in Barcelona, Madrid, and Seville", Current Issues in Tourism, Vol. 25, No. 20, pp. 3309-3328.

Vassilikopoulou, A., Kamenidou, I., and Priporas, C. V. (2022) "Negative Airbnb reviews: an aspect-based sentiment analysis approach", EuroMed Journal of Business, (ahead-of-print).

# LOVE AND LIES ON ONLINE DATING PLATFORMS COMPARED TO ONLINE TEACHING PLATFORMS - TRUST PROPENSITY

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## ABSTRACT

The objective of this research is to compare the trust propensity of love and lies on 'online dating platforms' with love and lies on 'online teaching platforms.' The advancement in technology allows for more sophisticated forms of dating and teaching than the traditional ones, namely dating in person, and teaching in class with cray on green/black board. Various theories, such as impression management, availability management and truth management, are used to explain communication patterns on these platforms. This research compares 'online dating platforms' to 'online teaching platforms,' more specifically the lies applied by users of both platforms and the deception originated from this behaviour. This is a mix of a quantitative and a qualitative research, aimed at validating the findings. This research consisted of several studies, involving 167 online daters in 2020 - 2023 and 68 online students in 2022 - 2023. advancement in technology allows for new added rather than substituted forms of lying. Dating and teaching communication patterns, however, demonstrate quite similar forms of lies and deception. Discussion and conclusions are followed by the study's limitation and recommendations for future research.

*Keywords: Online Dating Platforms, Online Teaching Platforms, Love and Lies, Deception, Digitalisation, Geert Hofstede's cultural dimensions*

## INTRODUCTION

The objective of this research is to compare the trust propensity of love and lies on 'online dating platforms' with love and lies on 'online teaching platforms.' The contribution to knowledge is to compare the nature of the lies on these two different platforms and to add to the discussion of trust propensity on both platforms: online dating and teaching. The research question is: "What do users lie about on online dating platforms compared to online teaching platforms?" Lying is a pattern of communication and therefore this study contributes to our understanding of how electronic social communication platforms influence users' selection of their lying tactics and topics. With this in mind, the advancement of technology helps to produce ever more sophisticated possibilities of diversification in online dating and online teaching. The platforms provide services such as simple written chat, and allow for voice recording, video calls, algorithms, matching through algorithms,

viewing of videos, including YouTubes, WhatsApp, Facebook, Instagram, Twitter. Helped by the 2020-2022 coronavirus pandemic, online services have experienced an accelerated usage even wedding celebrations are held more frequently online from the beginning of the year 2020 onwards, following a BBC report (https://www.bbc.com/news/av/technology-52471817). Dating apps have experienced the same increase, including phone calls, posting of a video introduction of yourself, and a video conclusion of the first date shared with everybody ( https://www.bbc.com/news/av/technology-52374300). BBC says the 'dating game is reinvented' on Apps like 'Love is Quarantine.' Online teaching platforms nowadays look more and more into combining 'Talent Management' with 'new managerialism' where Human Resource professionals and academics collaborate for a better recruitment and selection process of students for public and private universities (Taamneh et al, 2022). Moreover, this influences the way universities select, recruit, retain, and train talented students. By saying so, these students represent 'intellectual capital' and contribute to 'innovation performance', combined with 'big data' research (AL-Khatib, 2022). Since November 2022 and especially since March 2023 'Artificial Intelligence' combined with 'Sustainability' (Schulz et al., 2022) came into the centre of interest. Combining the possibility of treating 'big data' by matching of pairs in 'online dating' easily and preventing cheating in 'online teaching'. Both abilities, badly used, lead to deception.

Deception on online apps is generated from lies, say Markowitz and Hancock (2018). Therefore, this current research tries to mitigate the use of these lies. In previous studies, the author had researched lies on online dating platforms (Schinzel, 2020, 2021, 2022), combining them to Hofstede's cultural dimensions (Hofstede Insights, 2023 at https://www.hofstede-insights.com/).

This is a mix of a quantitative and qualitative research testing interpersonal trust propensity (Klein Woolthuis, Hillebrand, & Nooteboom, 2005), and lasting over different periods of time, starting in February 2020 until spring 2023. In the most recent research phase, started in December 2022 and ended in spring 2023, the author collected questionnaires from students, asking: "What are the differences in lies on 'online dating platforms' compared to 'online teaching platforms?" So far, 70 complete questionnaires were collected from 250 sent out questionnaires. There are limitations to this study, as bias may come from the fact that respondents are the author's own students. It is possible that only those participants replied who were honest and did not lie on 'online teaching platforms', as those who lied did not answer the questionnaire, not willing to admit they were cheating on their assignments.

In the study's first phase, from February 2020 to December 2020, the author contacted 131 people (men) in writing via an online dating platform, to meet 20 respondents face-to-face several times, and the second phase, the author interviewed 36 daters of both genders in semi-structured interviews. In

this phase the respondents were asked about the aspects they mainly lie about on online dating platforms during coronavirus times? Do they use different lies? 34 daters out of the 36 responded.

Findings indicate that there is an increase in digitalisation, in both dating and teaching. Remote dating and remote teaching / learning are the reality in spring 2023. This generates an increase in the lying culture not only on the online dating platforms, but consequently also on the online teaching/learning platforms. While students lie in face-to-face classes, they might lie differently on online teaching platforms. The research question is: How do they lie differently? What do they lie about?

In the previous phases of this research, the author researched the lying culture on online dating platforms and found daters to mainly lie about their posted photo, gender, age, availability, marital status, salary, profession, their real objective of being on the platform, sexual preferences, alcohol consumption, smoking habits, and traumatizing events in their lives.

As these lies. firstly, generate deception (Markowitz & Hancock, 2018), for honest daters, and, secondly, represent a threat to the benefit of Managers of these online dating platforms, the later do their maximum to keep activities such as lying, cheating, and criminal behaviour to a minimum.

With the objective of reducing the frequency of these lies, management of online dating platforms have introduced several measures, using technological advancement such as strict admission rules, checking for the correctness of daters' items most cheated / lied about: name, age, photo, residency, and profession. Daters allow for the evaluation of their criminal records, voice recording, video recording, to benefit from faster phone and video calls among daters, instead of losing time while chatting in written forms.

In this current study, the authors want to find out what students lie about on 'online teaching/learning platforms' and compare them to the lies on online dating platforms. And, secondly, of course, to find solutions to prevent these lies. What can be done to prevent students from lying, from cheating? Lying and cheating on what? And thirdly, to learn from errors made on 'online dating platforms' and vice versa.

Findings indicate that on online teaching platforms, it is impossible to lie about those data. On dating platforms daters lie about their name, age, photo, and income. Why is this not possible on online teaching platforms? Because these data on profession, salary, financial situation, family situation, married, with kids, are inspected diligently. All these data are inspected and validated by the online teaching institution.

With this, here the questions for **future research**: First: Why are online dating platforms not capable of checking these data more diligently? Second: Why are online teaching platforms so slow to apply changes for a more hybrid education?

The next sections present a review of the literature, followed by the method used for this study, and the findings. Discussion, conclusion, research limitations, and recommendations for future research follow.

## LITERATURE REVIEW

Following Markowitz and Hancock (2018), deception on online apps is generated from the lies users produce while dating online. As shown below, it is about impression management, availability management, truth management, false consensus effect and sustainability.

**Users of online dating platforms, following Schinzel (2022), lie about**: Their self-presentation such as age, height, weight, their gender (Women who pretend to be men and vice versa), their profile photos (photos 10 and more years younger), their name (Showing one name on the platform and using another name upon meeting), their age, their professional occupation their salary. They lie about their 'availability'. This includes their marital status: if they are single or not, and also if they are free to meet, or still in an emotional relationship or not. About sexual preferences, Alcohol consumption, Smoking habit and they lie about traumatizing events (Schinzel, 2022).

Users of **online teaching platforms lie for the following reasons** (Richard Curwin, 2013):

- I am the student who is under economic pressure. I need to succeed to earn money.
- I am the student who is under social pressure. I need to succeed my studies to have a social status.
- I am the student whose personality is to lie. I simply enjoy lying.
- I am the student who truly believes the lie
- I am the student who lies to get admiration from others
- I am the student who lies to avoid punishment
- I am the student who lies to gain a reward, a diploma, fame, a status
- I am the student who lies to protect others
- I am the student who lies for fun
- I am the student who lies to hurt others
- I am the student who lies to get even with others
- I am the student who lies because I don't trust anybody
- I am the student who lies because I just don't care, I am completely indifferent, I give a s…
- I am the student who lies to be accepted in a group or to be popular.

Again, just like in online dating, in online teaching, the question is about **availability**. Am I free to study, yes or no? Do I have time to study? Do I not have time because of other commitments like job, family, travel….

How can I cheat in online teaching classes? By somebody else doing my assignments. If somebody else performs the research for me, or the homework, or the data analyses, or the writing up. That is cheating.

With TurnitIn, it is nowadays impossible to do plagiarism, however, in earlier years, plagiarism was a big threat to credibility of education.

Most Online Learners lie to make themselves look more…. what? This is what we are going to try to find out.

*The reasons for deception on online dating platforms*

This deception is generated by the fact that most daters lie to make themselves more attractive. Upon meeting in person, the counterparty is deceit by the reality, by first misrepresenting social information (Corriero & Ton, 2016), and second, by how online appearances compare to in presence appearances (Hancock & Toma (2009), and, third, by personality traits (Ranzini & Lutz, 2017). There are four main strategies used in on-line dating platforms: Impression management, availability management, truth management and the false consensus effect. They are presented next.

*a) Impression management*

*Impression management* has the objective to appear more attractive to the partner, by modifying profile information in three areas"

1) physical attributes,

2) personal interests,

3) photos (Toma, 2015). Making the 'self' more attractive is the main objective, using impression management strategies such as photos which are not recent, nor authentic, making daters younger, taller (mostly men), and slimmer (mostly women). Ellison, Hancock and Toma (2012) compare the technique of online dating to job interviews, saying the settings are similar.

*The first impression management goal for daters*, after the initial self-presentation and the self-enhancement phase, should be to be romantically available and desirable, say Ellison, Heino and Gibbs (2006).

*The second impression management goal for daters* should be the decision whether to meet in person or not.

*b) 'Availability management'*

*Availability management* is the next strategy for daters, as nobody wants to appear too desperate by being always available, mobile communication makes it possible to control constantly the other's availability. However, daters lie about their marital status, pretending to be single, while being married and therefore not being available at all.

*c) 'Truth management'*

*Truth management* is the following strategy for daters. In everyday life it is already difficult enough to detect if somebody tells the truth or a lie and this is even more difficult to find out in online conversations. Deception is originated by lies, told by the partner, knowing that it is difficult to collect enough information about a person to be able to make the right judgement. This is the *Truth-Default Theory* of Levine (2014).

### d) 'False consensus effect'

*False consensus effect* is another strategy for daters. Epley (2015) shows that daters estimate the actions of other daters based on their own behaviour. The more they lie themselves, the more they estimate the partner also lies.

While most of the publications in the literature are about "lying in dating" (https://scholar.google.com/scholar?hl=en&as_sdt=0%2C31&q=lying+in+dating&btnG=      )      and deception, looking into differences based on personal characteristics, such as gender, age, education, marital status and physical attractiveness, this current research also looks into trust (Lewicki & Wiethoff, 2000) and trust propensity. This includes the balancing between benefits from trust and distrust on the online dating platforms, and the obvious risks daters run into using these platforms (Chen et al., 2021). Online dating has partially controversial information about whom you can trust or not, say Chen et al., (2021). They call it the decision paradox.

With '**sustainability**' coming into the focus of research over the last years, let us mention again the three pillars of sustainability: social life, the economy and the environment (Purvis, Mao, Robinson, 2019). Both online dating and online teaching represent these three pillars. They also constitute huge markets on their own, involving exactly that: social life, the economy and the environment.

## METHOD

This is a mix of a quantitative and qualitative research testing interpersonal trust propensity (Klein Woolthuis, Hillebrand, & Nooteboom, 2005), and lasting over different periods of time, starting in February 2020 until spring 2023. In the most recent research phase, started in December 2022 and ended in spring 2023, the author collected questionnaires from students, asking the following research question: "What are the differences in lies on 'online dating platforms' compared to 'online teaching platforms?" So far, 70 complete questionnaires were collected from 250 sent out questionnaires. There are limitations to this study, as bias may come from the fact that respondents are the author's own students. It is possible that only those participants replied who were honest and did not lie on 'online teaching platforms', as those who lied, did not answer the questionnaire, not willing to admit they were cheating on their assignments.

In previous study phases, in a first phase from February 2020 to December 2020, the author contacted 131 people (men) in writing via an online dating platform, to meet 20 respondents several times and in a second phase, the author interviewed 36 daters in semi-structured interviews daters from both genders about what aspects did users mainly lie about on online dating platforms during coronavirus times? Do they use different lies? 34 daters out of the 36 responded.

## FINDINGS

Findings are generally not only the 'deception' Markowitz and Hancock (2018) researched about, but mainly the increase in digitalisation (Schinzel, 2022), in both dating and teaching. Artificial Intelligence (Schulz et al., 2022) has its ever-increased importance in this field, where students constitute an 'intellectual capital' by contributing to 'innovation performance' (AL-Khatib, 2022). Also, online dating and online teaching platforms have to treat with 'big data'. Remote dating and remote teaching / learning are the reality in spring 2023, mainly preferred to in presence dating and teaching / learning. This generates an increase in the lying culture not only on the online dating platforms, but consequently also on the online teaching/learning platforms. While students lie in presence schools, they might lie differently on online teaching platforms. The research question is: How do they lie differently? What do they lie about?

This is new research, as well as the research by Lin and Yu (2023) on Artificial Intelligence in chatbots in educational contexts. The educational context is taking into account here, combined with trust propensity (Stefanidis et al., 2017). In the previous phases of this research, the author researched the lying culture on online dating platforms with the following findings: online daters mainly lie about all of the following: photo, gender, age, availability, marital status, salary, profession, their real objective of being there on the platform, sexual preferences, alcohol consumption, smoking habits, traumatizing events in their lives.

As these lies first generate deception (Markowitz & Hancock, 2018) for honest daters, and secondly represent a threat to the benefit of Managers of these online dating platforms, the later do their maximum to keep activity such as lying, cheating, criminality to a minimum.

With the objective of reducing the frequency of these lies, management of online dating platforms have introduced several measures to their online platforms, thanks to technological advancement such as: strict admission rules, checking for the correctness of dates items most cheated / lied about: name, age, photo, residency, profession. So, they ask for items such as: criminal records, voice recording, video recording, and faster phone calls among daters, faster video calls among daters, instead of losing time while chatting in written.

Now, in this current study, the author wants to find out what students lie about on 'online teaching/learning platforms' and compare them to the lies on online dating platforms. And, secondly, of course, to find solutions to prevent these lies. What can be done to prevent students from lying, from cheating? Lying and cheating on what? And thirdly, to learn from errors made on 'online dating platforms' and vice versa.

Findings are: on online teaching platforms, it is impossible to lie about those data, daters on online dating platforms lie about most: name, age, photo, salary. Why is this not possible on online teaching platforms? Because these data are checked seriously, including profession, salary, financial situation, family situation, married, with kids. All these data are checked for by the online teaching institution. Now, here the question for **future research**: Why are online dating platforms not capable of checking these data more seriously?

## ANALYSIS OF FINDINGS

This section discusses the responses in the interviews and questionnaires and presents these findings in relation to four research questions.

*Research Question 1: What do people lie about most on online dating platforms?*

Even though it is difficult to find out when daters tell the truth and when they lie, those users who lied would mainly lie about attributes such as their name, their gender, their photo, their age, their social status, their salary, or their marital status, resulting in deception. Nearly no one replied with the true level of their income. Other subjects that users would lie about include alcohol and smoking, and any other characteristics like profession, sports activities, and hobbies. To a lesser degree, other subjects may include gender, abuse, death in the family and crime. Although it must be restated that it is difficult to ascertain exactly when they lie.

Although it is difficult to believe, because it is challenging to check and prove, many daters claimed they do NOT lie about any question they are asked to answer on an on-line dating platform. They are trusting and trustworthy, they tell the truth about themselves, about their availabilities, and even their photos are genuine. They are honest and sincere, and honestly and seriously looking for an honest and serious new partner. The author had contact with 34 of these honest daters who insisted they had not lied or said anything which was not true. 5 even got upset about the presumption they were not truthful.

Here is their most frequent reply:

"I am not lying here, I am honest. I am seriously searching for a partner here." However, this is a general statement that does not tell much about their true motives or behaviours.

*Research Question 2: What do people lie about?*

Out of the 34 respondents of the 36 asked, 28 said they would NOT lie, 15 said that some people lie about different facts, like photos, name, age, weight, height, availability, marital status, income, or their real purpose for the online dating.

*Exemplary quotes:*

R1: "I am convinced that on the dating sites there is always a lot of lying. it is my opinion that in the anonymity of the internet there are many people who let their fantasies and imaginations free run … "

R2: "How on earth do you get this idea? I am here with serious intentions and wouldn't know why I should be lying!"

R3: "False identity and also a fake photo!"

R4: "Anyhow, it's been a while that I have met a man. You?"

R5: "Liars exist everywhere. I do not necessarily think that there are more on this platform."

*Research question 3: What do students on Online teaching platforms lie about most?*

Out of the 68 students-respondents who answered the questionnaire, 54 said they don't lie. The others said:

14 said they lied about their feelings. It is difficult to talk about feelings online, therefore it is convenient not to talk about feelings at all on an online teaching platform. They said, they had deaths in their family and didn't talk about it. While others, again, spoke openly about their deaths in their families and how much they were involved. One student had 34 deaths in his family in only one year time frame.

Or they cheated about assignments write-up. 5 admitted they were helped by others with the write-up.

This is the reason for lying, cheating as an online student: 6 students said, they felt left alone, isolated, and lost on the online teaching platform, they needed a lot of motivation to continue studying, as they really lacked motivation.

*Exemplary quotes:*

R1: "It would be nice to have more hybrid modules, where I could also talk to my tutor via video call."

R2: "I prefer the asynchronous online learning, without video or voice call, because of my tight time schedule and the time difference, I couldn't attend in person to any time obligations."

R3: "I do NOT lie; I am here to learn something for my life."

*Research Question 4: Comparison between lies on online dating platforms to lies on online teaching platforms.*

Daters on online dating platforms lie mostly about facts the students on online teaching platforms cannot lie about, simply because these data are checked meticulously by the administration office of the online school/university: age, photo, address, income, the purpose for being there.

Despite all the control mechanisms put in place, students on online teaching platforms cannot be controlled 100% either, just like online daters. Administration office cannot control if the student has time for his studies, or if he isn't helped by somebody else while doing his assignments. Online students might be cheating differently than in presence students, however, cheating has always been part of education in one way or another. Each and every one of us remembers having cheated in school in one way or another. Online cheating is just a continuation of it. Thanks to TurnitIn plagiarism is under control. If students perform their research by themselves remains to be proven. Following this current study, 60 out of 68 students say, they are not cheating. Saying that, cheating could be about all parts of a research: writing up, doing the literature review, data collection, findings, discussion, conclusion, references in APA style. All these parts could be done by somebody else than the student him/herself. 60 out of 65 say, they are here to learn themselves something for life.

Another point is congruent in both online dating and online teaching: users express their wish for hybrid forms of dating and teaching. 156 respondents out of 167 say they would like not only to be on the platform in writing, but also, technology permitting, with voice and video. In addition to the written online platform, both user types prefer to hear and see the others. However, one dater said, he would prefer the writing, as it allows for more anonymity.

Following this, the author checked the online dating platforms evolution over the last months, to find advancement in technology on online dating platforms, namely, by having added all these technological innovations to their platform over the last months: allowing for contact in writing, in audio, and in video. Online teaching platforms are not that fast in applying needed change. For the moment, they remain traditional, using communication in writing.

Discussion, conclusion, limitations, and recommendations for further research follow.


## DISCUSSION/CONCLUSION

The research question was: What do they lie about on online dating platforms compared to online teaching platforms? The contribution to knowledge is: to add this comparison to current use of both online dating and online teaching platforms, with the aim to make them more safe and more performant, in line with technological advancement (Vrontis, Thrassou, Weber, Shams, Tsoukatos, & Efthymiou, 2021).

The advantages and disadvantages of online dating platforms remain unchanged. Just like in non-digital life and dating in person, people lie about attributes such as name, age, career, salary, alcohol consumption, habits, vacation, sports, or general state of health. 'Digital Transformation' (Walvadkar & Kaufmann, 2021) allows for more sophisticated ways of online life.

The same applies to online teaching platforms. Just like in real school life, students may cheat about all items of their learning process: writing up, literature review, data collection, data evaluation, discussion, conclusion, and references. While Plagiarism is being taken care off through TurnitIn, these other points can be cheated on by students.

Honesty and trust are key to this study. Among some untruthful and lying people, the author found mostly trustworthy people who did not lie nor cheat in any way. They were honest and looking seriously for a serious partner. Such as students who mainly are honest and not cheating.

However, on online dating platforms, daters use different methods of impression management to improve the self-presentation (Ellison, Heino, & Gibbs, 2006) and availability (Ellison, Hancock, & Toma, 2012; Hancock and Toma, 2009; Toma, 2015).

Curwin (2013) shows what students mainly lie about, online or in presence teaching. These items could also be seen as items of self-presentation, to impress others or self, to punish others or self, to earn better money, to finish studies earlier, and to attract attention, just like in presence teaching.

Thanks to the Covid pandemic, the outcome of this research illustrated the difference in contacts, the distance in the contacts, the scarcity of contacts, the preference for virtual contacts, or meeting outdoors for a walk or a bike ride in the countryside instead of in restaurants, pubs, or bars. Daters prefer either meeting on their computers, smartphones, or somewhere outdoors.

While some daters are honest, others use different methods of impression management, mainly to improve self-presentation (Ellison, Heino, & Gibbs, 2006) and availability (Ellison, Hancock and Toma, 2012; Hancock and Toma, 2009; Toma, 2015). However, online dating platforms allow for some specific behaviour, combining love and lies in a peculiar way. This is what motivated the author to write up experiences in the form of this study. In addition, Artificial Intelligence could be used to further match daters or students and to provide better, more sustainable service on online platforms (Schulz et al., 2022).

One respondent openly stated that "However, this is difficult as both men and women nowadays do not dare to speak to other people on the street, in a café, in the supermarket, or at a dance event like they used to do years before. They are shyer in person than online." Another respondent had said: "The younger they get, the more online their life is. The young generation has all their friends online, none of them in person. While the older generation has friends mainly in person, and a few online."

The big winner of this 2020-2022 coronavirus pandemic is 'Digital Transformation' (Walvadkar & Kaufmann, 2021). In times of business under crisis, with digital transformation of Learning and Development, digitalisation has allowed for new ways of communication in both the personal and the educational spheres (Vrontis, Thrassou, Weber, Shams, Tsoukatos, & Efthymiou, 2021).

This current study shows the similarities between online dating and online teaching platforms. Technological advancement allows for more sophisticated use of both platforms, besides the writing. Users of both platforms prefer a certain 'hybrid' use, allowing for audio and video use options, additionally to the writing option. However, the lying structure has not changed. Lies will always continue to survive, despite all control mechanisms. The serious dater and/or serious student who is there to really find a partner / or to really learn something will be honest and not lie. Criminal activities of all kinds need to be eradicated at all costs to ensure the security and safety of users of both platforms.

## LIMITATIONS AND FURTHER RESEARCH

By being a single researcher, the number of people contacted was limited, as well as the number of interviews, email and messages in writing, meetings in person, and the number of interviews. Larger scale research would be necessary to allow for more statistical use of the data. However, the identity and purpose of the researcher could not be revealed to the online dating platform users, without making them suspicious of the author's objectives. Further research could allow for more sophisticated statistical applications, operating on a larger scale and interviewing more people. Additionally, respondents to the online teaching platforms are online students of the author. There might be several possible biases, first: only those students who do not cheat, filled in the questionnaire and replied; second, none of these students would say that they are cheating, despite the guaranteed anonymity of the study. The same respondents' reluctancy to admit abuse of on-line communication system was witnessed in another study (Levine, 2014).

**Future research** could investigate the following important questions: First: Why are online dating platforms uncapable of checking personal data more diligently? And secondly: Why are online teaching platforms so slow in applying the requested changes involved in more hybrid education? It could also make a comparison with negotiation techniques (Banai et al., 2014). A third direction of research could be 'Talent Management' and 'new managerialism' where Human Resource professionals and academics collaborate for a better recruitment and selection process of students for public and private universities (Taamneh et al, 2022), regarding how universities select, recruit, retain, train talented students. Fourth, and furthermore, future research could look into 'intellectual capital' and 'innovation performance', combined with 'big data' research (AL-Khatib, 2022). Fifth and last but not least, another option for future research could go into the direction of 'Artificial Intelligence' combined with 'Sustainability' (Schulz et al., 2022).

## REFERENCES

AL-Khatib, A.W. (2022), "Intellectual capital and innovation performance: the moderating role of big data analytics: evidence from the banking sector in Jordan", EuroMed Journal of Business, Vol. 17 No. 3, pp. 391-423. https://doi.org/10.1108/EMJB-10-2021-0154

Banai, M., Stefanidis, A., Shetach, A., and Ferhet, O.M. (2014), "Attitudes towards Ethically Questionable Negotiation Tactics: A Two-Country Study", Journal of Business Ethics, Vol. 123 No. 4, pp. 669–685. https://link.springer.com/article/10.1007/s10551-013-2016-4

BBC at https://www.bbc.com/news/av/technology-52471817

BBC at https://www.bbc.com/news/av/technology-52374300

Corriero, E. F., and Tong, S. T. (2016), Managing uncertainty in mobile dating applications: Goals, concerns of use, and information seeking in Grindr. Mobile Media and Communication, Vol. 4, pp. 121–141. doi:10.1177/2050157915614872. https://journals.sagepub.com/doi/abs/10.1177/2050157915614872

Craft, J.L. (2013), "A Review of the Empirical Ethical Decision-Making Literature: 2004-2011", Journal of Business Ethics, Vol. 117, pp. 221-259. https://link.springer.com/article/10.1007/s10551-012-1518-9

Curwin, R. (2013). What to do when students lie. Social & Emotional Learning (SEL). Accessed at https://www.edutopia.org/blog/when-students-lie-richard-curwin

https://link.springer.com/article/10.1007/s12144-021-01760-1

Ellison, N. B., Hancock, J. T., and Toma, C. L. (2012), "Profile as promise: A framework for conceptualizing veracity in online dating self-presentations", New Media and Society, Vol. 14, pp. 45–62. doi:10.1177/1461444811410395 https://journals.sagepub.com/doi/abs/10.1177/1461444811410395

Ellison, N., Heino, R., and Gibbs, J. (2006), "Managing impressions online: Self-presentation processes in the online dating environment", Journal of Computer-Mediated Communication, Vol. 11, pp. 415–441. doi:10.1111/j.1083-6101.2006.00020.x https://academic.oup.com/jcmc/article/11/2/415/4617726?login=true

Epley, N. (2015), "Mindwise: Why we misunderstand what others think, believe, feel, and want", Vintage, New York, NY:. http://www.sztukaleczenia.pl/pub/2017/1/Strony_od_sztuka_leczenia_01-2017-x4.pdf

Hancock, J. T., and Toma, C. L. (2009), "Putting your best face forward: The accuracy of online dating photographs", Journal of Communication, Vol. 59, pp. 367–386. doi:10.1111/j. 1460-2466.2009.01420.x https://academic.oup.com/joc/article-abstract/59/2/367/4098407

Hofstede insights (2023), https://www.hofstede-insights.com/ Accessed 14 April 2023.

https://scholar.google.com/scholar?hl=enandas_sdt=0%2C31andq=deceiving+in+romantic+dating+in+covid+tim eandbtnG=

https://scholar.google.com/scholar?hl=enandas_sdt=0%2C31andq=lying+in+datingandbtnG= )

https://scholar.google.com/scholar?hl=enandas_sdt=0%2C31andq=on-line+datingandbtnG=

https://scholar.google.com/scholar?hl=enandas_sdt=0,31andq=lying+on+online+dating+platforms

Klein Woolthuis, R., Hillebrand, B., and Nooteboom, B. (2005), "Trust, contract and relationship development", Organization Studies, Vol. 26 No. 6, pp. 813–840. https://journals.sagepub.com/doi/abs/10.1177/0170840605054594

Levine, T. R. (2014), "Truth-Default Theory (TDT): A theory of human deception and deception detection", Journal of Language and Social Psychology, Vol. 33, pp. 378–392. doi:10.1177/0261927X14535916 https://journals.sagepub.com/doi/abs/10.1177/0261927x14535916

Lewicki, R. J., and Wiethoff, C. (2000), "Trust, trust development, and trust repair", In M. Deutsch and P. Coleman (Eds.), The handbook of conflict resolution: Theory and practice, San Francisco, CA: Jossey-Bass, pp. 86–107

https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Lewicki%2C+R.+J.%2C+and+Wiethoff%2C+C.+%282000%29.+Trust%2C+trust+development%2C+and+trust+repair.+In+M.+Deutsch+and+P.+Coleman+%28Eds.%29%2C+&btnG=

Lewicki, R. J., McAllister, D. J., and Bies, R. J. (1998)", Trust and distrust: New relationship and realities", Academy of Management Review, Vol. 23 No. 3, pp 438–512. https://journals.aom.org/doi/abs/10.5465/amr.1998.926620

Li, P. P. (2007), "Towards an interdisciplinary conceptualization of trust: A typological approach", Management and Organization Review, Vol. 3 No. 3, pp. 421–445. https://www.cambridge.org/core/journals/management-and-organization-review/article/abs/towards-an-interdisciplinary-conceptualization-of-trust-a-typological-approach/9F922B02254F5D2CB70C7C5A8421E5CA

Lim, A. G. Y., (2020). https://www.simplypsychology.org/big-five-personality.html

Lin, Y. and Yu, Z. (2023), "A bibliometric analysis of artificial intelligence chatbots in educational contexts", Interactive Technology and Smart Education, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/ITSE-12-2022-0165

Markowitz, D.M., and Hancock, J.T. (2018), "Deception in Mobile Dating Conversations", Journal of

Communication, Vol. 68, pp. 547-569. https://academic.oup.com/joc/article/68/3/547/4986443?login=true

Mintu-Wimsatt, A., Garcia, R., and Calantone, R. (2005), "Risk, trust and the problem-solving approach: A cross cultural negotiation study", Journal of Marketing Theory and Practice, Vol. 13, No. 1, pp. 52–61. https://www.tandfonline.com/doi/abs/10.1080/10696679.2005.11658538

Olekalns, M. L, and Smith, P. L. (2009), "Mutually dependent: Power, trust, affect and the use of deception in negotiation", Journal of Business Ethics, Vol. 85 No. 3, pp. 347–365. https://link.springer.com/article/10.1007/s10551-008-9774-4

Purvis, B., Mao, Y. and Robinson, D. (2019), "Three pillars of sustainability: in search of conceptual origins", Sustainability Science, Vol. 14, pp. 681–695. https://doi.org/10.1007/s11625-018-0627-5

Ranzini, G., and Lutz, C. (2017), "Love at first swipe? Explaining Tinder self-presentation and motives", Mobile Media and Communication, Vol. 5, pp. 80–101. doi:10.1177/2050157916664559 https://journals.sagepub.com/doi/abs/10.1177/2050157916664559

Schinzel. U. (2020), "I am a Responsible Leader. Responsible Corporate Social Responsibility: The Example of Luxembourg", Business Perspectives and Research. Vol. 8 No 1, pp. 1-15. Sage. sagepub.com/journals-permissions-india, DOI: 10.1177/2278533719860019, journals.sagepub.com/home/bpr https://journals.sagepub.com/doi/full/10.1177/2278533719860019

Schinzel, U. (2021), "Business Under Crisis: Talent-Management and Responsible Leadership in Luxembourg in pandemic times", in: Thrassou, A. and Efthymiou, L. (ed.) (2021) Business Under Crisis. Palgrave Studies in Cross-Disciplinary Business Research.

Schinzel, U. (2022), "An Overview of Business Advancement Through Technology: Digitalisation of Love and Lies on Online Dating Platforms in Coronavirus Times: Business Advancement Through Technology", in: Thrassou, A. and Efthymiou, L. (ed.) (2022). Business Advancement through Technology Volume I. Palgrave Studies in Cross-Disciplinary Business Research. DOI: 10.1007/978-3-031-07769-2_5

Schulz, W.H., Franck, O., Smolka, S. and Geilenberg, V. (2022), "Applicable Knowledge for Sustainability. The Status of Artificial Intelligence in Industrial Production and the Impact of Future Sustainability", Grima, S., Özen, E. and Boz, H. (Ed.) The New Digital Era: Digitalisation, Emerging Risks and Opportunities (Contemporary Studies in Economic and Financial Analysis, Vol. 109A), Emerald Publishing Limited, Bingley, pp. 117-124. https://doi.org/10.1108/S1569-37592022000109A007

Stefanidis, A., Banai, M., Schinzel, U., Shetach, A., Erkus, A., Goelzner, H. and Ozbek, M.F. (2017), "Germanic vs Turkic Negotiators' Ethical Propensity and Formal Contracts: The Moderating Role of Trust", Academy of Management. AOM. https://doi.org/10.5465/ambpp.2016.15073abstract https://journals.aom.org/doi/abs/10.5465/ambpp.2016.15073abstract

Taamneh, A.M., Taamneh, M., Alsaad, A. and Al-Okaily, M. (2022), "Talent management and academic context: a comparative study of public and private universities", EuroMed Journal of Business, Vol. 17 No. 4, pp. 731-751. https://doi.org/10.1108/EMJB-08-2020-0088

Toma, C. L. (2015), "Online dating", In C. Berger, and M. Roloff (Eds.), The international encyclopedia of interpersonal communication Hoboken, NJ: John Wiley and Sons, Inc, pp. 1–5.

Triandis, H. C., and Suh, E. M. (2002), "Cultural influences on personality," Annual Review of Psychology, Vol. 53 No. 1, pp. 133–160. https://www.annualreviews.org/doi/abs/10.1146/annurev.psych.53.100901.135200

Triandis, H. C., Carnevale, P., Gelfand, M., Robert, C., Wasti, S. A., Probst, T., Schmitz, P. (2001), "Culture and deception in business negotiations: A multilevel analysis", International Journal of Cross Cultural Management, Vol. 1 No. 1, pp. 73–90. https://journals.sagepub.com/doi/abs/10.1177/147059580111008

Walvadkar, J.R. and Kaufmann, H.R. (2021). Business Under Crisis: Digital Transformation of Learning and Development, in: Thrassou, A. and Efthymiou, L. (ed.) (2021). Business Under Crisis. Palgrave Studies in Cross-Disciplinary Business Research.

Vrontis, D., Thrassou, A., Weber, Y., Shams, R., Tsoukatos, E., Efthymiou, L. (Eds) (2021), Business Under Crisis: Avenues for Innovation, Entrepreneurship and Sustainability. Book series: Palgrave Studies in Cross-Disciplinary Business Research, In Association with EuroMed Academy of Business, Palgrave Macmillan (Springer), Cham, Switzerland.

# CREATIVE ACCOUNTING IN MICRO, SMALL AND MEDIUM ENTERPRISES IN PORTUGAL

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## ABSTRACT

This paper intends to assess the use of creative accounting practices in Portuguese micro, small, and medium-sized enterprises while controlling for firm structure variables. The sample consists of 15 626 firms financial statements from 2014 to 2019. It has been found that the use of creative accounting practices is highly present in this group of firms. The variable that most influences creative accounting levels is taxation, which is even more relevant in microenterprises. Growth and debt are variables that strongly influence creative accounting levels in non-microenterprises. Family businesses do not differ significantly from non-family businesses regarding creative accounting levels. These findings can be important to several institutions and regulators, such as the Tax Authority, banks, European Structural and Investment Funds, and investors who frequently use financial statements to make decisions within the business environment.

*Keywords: Creative accounting, taxation, microenterprises, family business.*

## INTRODUCTION

Creative accounting is a controversial topic. It is considered one of the main enemies of financial statements users, as it misleads their decision-making and can cause enormous financial, economic, and social damage. Being a widely studied topic present in the scientific literature since the twentieth century, there are already a series of conclusions about creative accounting within companies. However, most of these studies focus on big companies, often listed on the stock exchange. And, therefore, the development of creative accounting practices among SMEs is somehow unknown and may even be quite different from what happens in bigger companies.

The main objective of this study was to investigate whether Micro, Small and Medium-sized Enterprises (MSMEs) in Portugal use creative accounting practices, and to try to identify their relationships with numerous structural variables. The analysis was conducted in legally formed MSMEs, located in Portugal, between 2014 and 2019. This study starts with literature review, which will fit the scientific studies already conducted on creative accounting practices, and their usefulness for this research. The following chapter is dedicated to the methodology used in this investigation, formulating the hypothesis of the study, describing the variables and the characterization of the sample. In the fourth chapter, follows the empirical results and discussion, and implications. Finally, its conclusions and the main contributions are presented.

## LITERATURE REVIEW

Creative accounting can be defined as a form of accounting in which, although all regulations are met, the flexibility of accounting standards is used to change or omit the results strategically, in order to impress third parties, "embellishing" the true reality of the company (Balaciu *et al.*, 2009; Duarte and Ribeiro, 2007; Jones, 2011; Niyama *et al.*, 2015). There are several actors who are involved in a company, direct or indirectly, such as managers, shareholders, employees, among others, usually called by stakeholders, who can be motivated to use creative accounting practices. However, not everyone has the power to make decisions within the company. The management of companies is centered on their managers and their owners, and the agency relationship between them is considered one of the main reasons for the use of creative accounting practices (Balaciu and Vladu, 2010; Tassadaq and Malik, 2015). The agency's theory deals with the separation between ownership and management of companies, assuming that individuals are opportunistic and seek to maximize their personal interests (Balaciu *et al.*, 2009; Jacobson, 2009). Conflicts of interest may arise from this relationship, and the agency's so-called problem arises when the principal's wishes and objectives conflict with those of the agent, and when it is difficult and expensive for the principal to verify whether the agent has behaved appropriately (Balaciu *et al.*, 2009; Tassadaq and Malik, 2015).

Motivations for creative accounting practices are dependent on companies' economic environment. In Anglo-Saxon countries, incentives can be divided into three types: capital market incentives, legal or contractual incentives, and regulatory and political incentives (Cunha, 2013). In Continental system countries, incentives are mainly related to the taxation context and to the costs associated with debt and its contractual relations (Othman and Zeghal, 2006). In the Portuguese economic context, the tax effect is one of the main incentives for creative accounting practices (Sousa *et al.*, 2019). Most of the Portuguese business composition consists of micro, small and medium-sized enterprises (PORDATA, 2021a). In this way, creative accounting practices are used to disclose positive results, but close to zero, avoiding or decreasing the tax burden companies would have to pay (Cunha, 2013; Moreira, 2008). This concern with managing low but positive earnings is seen as an attempt to reduce the high probability of an audit inspection by the Tax Authority (Moreira, 2008). However, there are also incentives for portuguese companies to increase their results, such as to get bank financing (Cunha, 2013; Moreira, 2008). In this specific case, according to Moreira (2008), creative accounting practices seek to change the results in the upward direction, since there is a great need for bank financing by Portuguese companies. Positive results can lead to more favorable financing conditions by banking entities.

Creative accounting can influence several financial statements, mainly in the balance sheet and income statement, but also in the disclosure of financial information (Duarte and Ribeiro, 2007; de Luca *et al.*, 2020). Creative accounting practices can lead to changes in earnings by increasing or reducing expenses or income, and variations in assets, liabilities and equity.

The literature is filled with models for the assessment of creative accounting practices. They are usually analyzed through three different methods, accrual-based methods, real earnings management, and combined model of earnings management, with accrual-based models being the widely used ones across literature (Blazek *et al.*, 2020) Accruals arise when there is a difference between the moment of recognition of cash flow and the moment of recognition of revenue or cost, and part of the revenue or costs have not yet translated into receipts or payments

(Cunha, 2013). Disregarding creative accounting, all accruals would result from the businesses normal activity. However, since this is usually not the case, it is necessary to calculate total accruals, so that they can be disaggregated into discretionary accruals, proxy of creative accounting practices, and non-discretionary accruals, arising from the company's normal activity (Eq. 1).

$$TA_{it} = NDA_{it} + DA_{it} \quad [1]$$

In which: $TA_{it}$ – Total accruals of i in period t; $NDA_{it}$ – non-Discretionary accruals of i in period t; $DA_{it}$ – Discretionary accruals of i in period t.

Jones (1991) suggested an accrual detection model, commonly used in the literature. The model uses linear regressions to estimate non-discretionary accruals (NDA) and, therefore, indirectly estimate the discritionary accruals (DA), from the assumption that NDA would be constant over time (Dechow *et al.*, 2015). The model assumes that NDA depend on the variation of revenues and the total fixed assets. This means that the volume of current accruals depends on the revenue and the volume of non-current accruals depend on the value of fixed assets. To solve the problem of creative accounting practices, through revenue, considered as NDA in the Jones model, the authors of the modified Jones model (Dechow *et al.*, 2015) changed the original model, correcting income with the variation in receivables, in which ΔRECit is the accounts receivable of company *i* at the end of period t (Eq. 2):

$$NDA_{it} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_3 \frac{PPE_{it}}{A_{it-1}} \quad [2]$$

In which: $NDA_{it}$ – Non-discretionary accruals of i in period t; $A_{it-1}$ – Total assets of i in the period t-1; $\Delta REV_{it}$ – Change in revenue of i in period t compared to the period t-1; $\Delta REC_{it}$ – Change in accounts receivable of i at the end of period t compared to the period t-1; $PPE_{it}$ – Property, plant and equipment of i in period t; $\alpha_{1,2,3}$ – Company-specific parameters.

DA is the proxy for the result of the $\varepsilon_{it}$ component (Dechow *et al.*, 2015). Estimates of company-specific parameters $\alpha_{1,2,3}$ are obtained through the following model, in period t (Eq. 3):

$$TA_{it} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_3 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad [3]$$

In which: $TA_{it}$ – Total accruals of company i in period t; $A_{it-1}$ – Total assets of i in the period t-1; $\Delta REV_{it}$ – Change in revenue of i in period t compared to the period t-1; $\Delta REC_{it}$ – Change in accounts receivable of i at the end of period t compared to the period t-1; $PPE_{it}$ – Property, plant and equipment of i in period t; $\alpha_{1,2,3}$ – Company-specific parameters; $\varepsilon_{it}$ – Random error of company i in period t.

## METHODOLOGY

To evaluate the extent to which Portuguese MSMEs use creative accounting practices, the following research question was defined: What is the influence of company's characteristics behind creative accounting practices in Portuguese MSME's?

To answer this research question, the following research hypotheses were formulated, as well as the theoretical support behind its formulation. Considering the portuguese economic and legal context, as well as some investigations in earnings management (Sousa *et al.*, 2019), the tax effect should be the main incentive for creative accounting practices. Thus, the use of creative accounting practices is expected, as a negative incentive, to minimize the tax burden. Some studies were conducted in order to investigate the relationship between creative accounting and family versus non-family businesses, suggesting that family businesses, when not associated by a significant number of financial professionals to support them, have higher levels of creative accounting practices when compared to non-family businesses (Paiva *et al.*, 2016, 2019). Although there are some literary contributions on discretionary accruals within SMEs (de Almeida et al., 2005; Sousa et al., 2019), it would be pertinent to understand the differences in the creative accounting practices in the universe of SMEs, between smaller and bigger companies. Therefore, hypothesis 1 is formulated.

Hypothesis 1: In Portugal, are structural characteristics of MSMEs related to the use of creative accounting practices?

To assess hypothesis 1, the regression present in Eq.4 was used. At the level of econometric specifications, it was decided to follow the same strategy of (Anton and Carp, 2020), using the OLS model with robust standard errors in clusters for each company, to obtain robust estimators without heteroskedasticity, the OLS fixed effects with robust standard errors in cluster for each company, and the OLS model with robust standard errors of Driscoll and Kraay (1998), which, according to Hoechle (2007), it is possible to obtain robust estimators to deal with heteroskedasticity, autocorrelation and cross sectional dependence. The formulation and description of the variables used in the econometric models (see Eq.4) are in Table 1.

| Variables to be included in econometric models | Abbreviation | Description |
|---|---|---|
| Absolute value of discretionary accruals | $|AD|_{i,t}$ | Absolute value of discretionary accruals t |
| Taxes | $imp_{i,t}$ | Total income tax t/Total assets t |
| Indebtedness | $end_{i,t}$ | Total Liabilities t/Total Assets sum t |
| Dimension | $dim_{i,t}$ | Ln (Total Assets t) |
| Growth | $cresc_{i,t}$ | Ln (Total Assets t) - Ln (Total Asset t-1) |
| Profitability | $roa_{i,t}$ | Net Income for Period t /Total Assets |
| Family business | $efamiliar_{i,t}$ | Dummy variable in which, family business = 0 and non-family business = 1 for year t |
| Microenterprise | $emicro_{i,t}$ | Dummy variable in which, small or medium enterprise = 0 and microenterprise = 1 for year t |
| Classification of Economic Activities | $i.codcae_i$ | Dummy variable representing the Classification of Economic Activities section of each sample company where: $1.codcae_i$ represents agriculture, hunting and related service activities;$5.codcae_i$ represents |

| | | construction of buildings; 8.codcae $_i$ represents accommodation and food services;14.codcae $_i$ represents human health and social work activities. |
|---|---|---|

Table 1. Description of dependent, control and experimental variables used in econometric models. Source: Own elaboration. Notes: Ln, natural logarithm;

$$|AD|_{i,t} = \beta_0 + \beta_1 imp_{i,t} + \beta_2 end_{i,t} + \beta_3 dim_{i,t} + \beta_4 cresc_{i,t} + \beta_5 roa_{i,t} + \beta_6 efamiliar_{i,t} + \beta_7 emicro_{i,t} + \beta_{8,9,10,11,12} i.\, year + \beta_{13,14,15} i.\, codcae_{\;i} \quad [4]$$

The financial information of the sample companies was collected from the Iberian Balance Sheet Analysis System (SABI), a database of Bureau Van Dijk. The years between 2014 and 2019 were considered for the study period. The defined period was selected with the aim of obtaining the most recent financial information from companies at the time of this study, during a period of stable economic growth (PORDATA, 2021b; Varzim, 2019). The guidelines of the European Comission were followed to define the limits of the sample companies, classifying it as Micro, Small and Medium (Comissão das Comunidades Europeias, 2003). Companies that did not have financial information for the period between 2013 and 2019 and for all study variables selected were excluded.

Although there are no accurate data, it is estimated that more than 70% of Portuguese companies are considered Family Businesses (Associação das Empresas Familiares, n.d.). A company, regardless of its size, may be classified as a family business if it meets the following requirements (European Comission, 2009, p. 10).

- The majority of decision-making rights is in the possession of the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children's direct heirs.

- The majority of decision-making rights are indirect or direct.

- At least one representative of the family or kin is formally involved in the governance of the firm.

- Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families or descendants possess 25 % of the decision-making rights mandated by their share capital.

However, in this research, for greater homogeneity, the guidelines of some scientific articles will be followed, in which it is considered that a company is familiar if the majority shareholder(s) is a singular person(s) or of the same family with at least 50% of the capital (Anderson and Reeb, 2003; Pinto and Augusto, 2014).

| Sample | | | |
|---|---|---|---|
| Family business | Non-family business | Micro Companies | Small and medium-sized enterprises |
| 86% | 14% | 79% | 21% |
| Obs.: 80 900 | Obs.: 12 856 | Obs.: 73 953 | Obs.: 19 803 |

Table 2. Sample description. Source: Own elaboration.

According to the analysis of Table 2, 86% of the sample companies are family businesses. The sample is similar to what is expected in the total universe of Portuguese companies. Microenterprises make up 79% of the observations in this study. In 2019, microenterprises constituted about 96% of the total universe of companies in Portugal (PORDATA, 2021a). This value is much higher than the sample, explained by the low survival rate that this type of company shows over the years.

## EMPIRICAL RESULTS AND DISCUSSION

Descriptive statistics are shown in Table 3. Discretionary accruals have an average value of -0.22, a median of -0.19 and a standard deviation of 1.04, indicating a very high dispersion. In relation to the absolute value of discretionary accruals, they have an average value of 0.46. The variable *imp* presented an average value of 0.02 and median 0.01 and the *end* variable a mean value of 1.16 with median 0.55. Performing descriptive statistics separately for microenterprises and small and medium-sized enterprises (see Table 3), the *imp* variable presented identical mean, median and standard deviations for both analyses, except for the minimum and maximum values. Regarding the *end* variable, microenterprises have an average debt value higher than small and medium-sized enterprises, suggesting that microenterprises resort to higher levels of debt in relation to their assets, compared to bigger companies. Discretionary accruals presented similar values for both situations.

| Variables | Average | Median | Standard deviation | Minimum | Maximum | Percentile 5% | Percentile 95% |
|---|---|---|---|---|---|---|---|
| *AD* | -0.22 | -0.19 | 1.04 | -23.55 | 25.74 | -0.95 | 0.50 |
| *\|AD\|* | 0.46 | 0.28 | 0.96 | 0 | 25.74 | 0.02 | 1.18 |
| *imp* | 0.02 | 0.01 | 0.04 | -0.32 | 2.85 | 0.00 | 0.06 |
| *end* | 1.16 | 0.55 | 3.98 | -1.82 | 442.27 | 0.05 | 3.90 |
| *dim* | 12.15 | 12.14 | 1.51 | 5.74 | 17.50 | 9.65 | 14.66 |
| *cresc* | 0.02 | 0.01 | 0.30 | -5.90 | 3.33 | -0.38 | 0.42 |
| *roa* | -0.06 | 0.02 | 0.67 | -64.07 | 26.80 | -0.64 | 0.27 |
| *efamiliar* | 0.14 | - | - | - | - | - | - |
| *emicro* | 0.79 | - | - | - | - | - | - |
| Microenterprises | | | | | | | |
| *AD* | -0.21 | -0.18 | 1.13 | -23.55 | 25.74 | -0.98 | 0.57 |
| *\|AD\|* | 0.49 | 0.28 | 1.04 | 0.00 | 25.74 | 0.02 | 1.29 |
| *imp* | 0.02 | 0.01 | 0.04 | -0.32 | 2.85 | 0.00 | 0.07 |
| *end* | 1.31 | 0.54 | 4.45 | -1.82 | 442.27 | 0.04 | 4.81 |
| *dim* | 11.80 | 11.81 | 1.39 | 5.74 | 17.01 | 9.48 | 14.06 |
| *cresc* | 0.01 | 0.01 | 0.31 | -5.90 | 3.33 | -0.41 | 0.42 |
| *roa* | -0.08 | 0.02 | 0.74 | -64.07 | 26.80 | -0.79 | 0.28 |
| *efamiliar* | 0.13 | - | - | - | - | - | - |
| Small and medium-sized enterprises | | | | | | | |
| *AD* | -0.27 | -0.23 | 0.65 | -15.17 | 25.65 | -0.86 | 0.28 |
| *\|AD\|* | 0.38 | 0.28 | 0.59 | 0 | 25.65 | 0.02 | 0.91 |
| *imp* | 0.02 | 0.01 | 0.03 | -0.08 | 0.92 | 0.00 | 0.06 |
| *end* | 0.63 | 0.56 | 0.71 | -0.13 | 21.90 | 0.13 | 1.15 |
| *dim* | 13.45 | 13.41 | 1.20 | 9.13 | 17.50 | 11.53 | 15.50 |
| *cresc* | 0.05 | 0.03 | 0.24 | -3.10 | 2.92 | -0.27 | 0.41 |
| *roa* | 0.03 | 0.03 | 0.21 | -14.36 | 3.78 | -0.12 | 0.23 |
| *efamiliar* | 0.17 | - | - | - | - | - | - |

Table 3. Descriptive statistics of the variables. Source: Own elaboration

After using Pearson's correlation matrix, no significant correlation between the variables was found, as the correlation values were between the interval 0.7 and - 0.7.

The existence of creative accounting practices is assumed when discretionary accruals are different from 0. From the analysis of Figure 1, over the several years of the sample, most of the values of discretionary accruals are different from 0. Observing the frequency distribution of discretionary accruals in Table 4, approximately 56% of

the values of discretionary accruals are substantially below 0. Therefore, the presence of creative accounting practices in the sample companies is prominent.

| Interval | | Relative Frequency | Cumulative frequency |
|---|---|---|---|
| -23,545 | -1,7764 | 1,58% | 1,58% |
| -1,7764 | -0,95492 | 3,42% | 5,00% |
| -0,95942 | -0,13345 | 51,36% | 56,36% |
| -0,13345 | 0,68801 | 40,20% | 96,56% |
| 0,68801 | 25,743 | 3,44% | 100,00% |

Table 4. Relative and accumulated frequency of discretionary accruals of the sample. Source: Own elaboration.
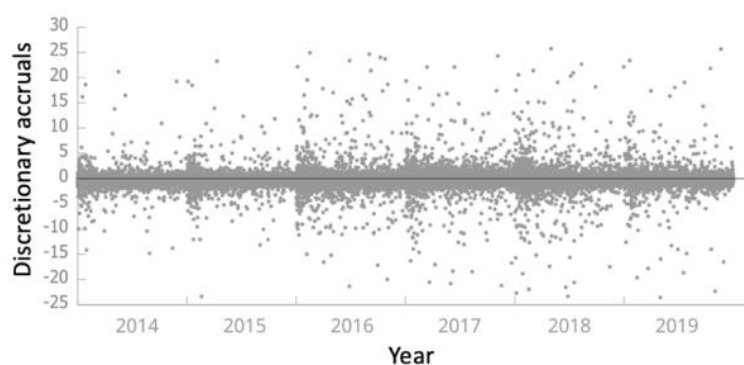


Figure 1.        Discretionary accruals over the years of the sample. Source: Own elaboration.

The results of the linear regressions are shown in Table 5. It is possible to assess that the coefficient of the *imp* variable has the most influence explaining discretionary accruals, being the highest. In addition, this coefficient is statistically significant in all models used in the study, at 1% in the OLS model, at 10% in the fixed effects model and 5% in the OLS model with robust standard errors of Driscoll and Kraay (1998). The results are in line with other investigations, in which taxes are highly influent in practices of earnings management (Sousa *et al.*, 2019). To evaluate the impact of family businesses among SMEs with discretionary accruals, the *dummy* variable *efamiliar* was used. From the analysis, it is concluded that the variable is not statistically significant in the model, reporting that, at the sample and in this specific model, being a family business has no impact on the discretionary accruals. Next, it is intended to understand if microenterprise set against small or medium-sized enterprises, show differences in discretionary accruals. The coefficient associated with the *dummy* variable *emicro* is statistically significant in all econometric models present in the study, at 1% in the OLS and OLS models with standard errors of Driscoll and Kraay (1998), and 5% in the fixed effects model. However, the coefficient value shows a negative sign, indicating that microenterprises in the sample tend to have lower discretionary accruals compared to small and medium-sized enterprises. However, the coefficient has a very low value and, therefore, it may be prudent to say that there are no significant differences between microenterprises and small and medium-sized enterprises.

|  | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
|  | OLS | FE - Fixed Effects | OLS with Robust Standard Errors of Driscoll and Kraay, (1998) |
| *imp* | 1,0436 *** | 0,7177 * | 1,0436 ** |
|  | (0.3860) | (0,4140) | (0,2931) |
| *end* | 0,0458 *** | 0,0053 | 0,0458 *** |
|  | (0,0115) | (0,0052) | (0,0110) |
| *dim* | - 0,0801 *** | - 0,3352 *** | - 0,0801 *** |
|  | (0,0082) | (0,0236) | (0,0192) |
| *cresc* | 0,7099 *** | 0,7760 *** | 0,7099 *** |
|  | (0,0355) | (0,0395) | (0,0610) |
| *roa* | - 0,2000 *** | - 0,0495 ** | - 0,2000 *** |
|  | (0,0435) | (0,0218) | (0,0442) |
| *efamiliar* | 0,0156 | - 0,0438 * | 0,0156 |
|  | (0,0110) | (0,0265) | (0,0112) |
| *emicro* | - 0,0660 *** | - 0,0371 ** | - 0,0660 *** |
|  | (0,0093) | (0,0166) | (0,0133) |
| *5.codcae* | -0,1757 *** | - | -0,1757 *** |
|  | (0,0083) | - | (0,0203) |
| *8.codcae* | 0,0345 *** | - | 0,0345 * |
|  | (0,0101) | - | (0,0166) |
| *14.codcae* | -0,0848 *** | - | -0,0848 ** |
|  | (0,0146) | - | (0,0326) |
| constant | 1,4372 *** | 4,515*** | 1,4372*** |
|  | (0,1168) | (0,2898) | (0,2668) |
| i.year | Yes | Yes | Yes |
| Observations | 93 756 | 93 756 | 93 756 |
| R-squared | 0,1654 | 0,0851 | 0,1654 |

Table 5. Econometric regression results. Note: Robust standard errors are referred to in parentheses and take into account the cluster at the enterprise level. The symbols ***, ** and * express statistical significance at levels of 1%, 5% and 10%, respectively. Source: Own elaboration

|  | Microenterprise | | | Small and medium-sized enterprise | | |
|---|---|---|---|---|---|---|
|  | Model 1 | Model 2 | Model 3 | Model 1 | Model 2 | Model 3 |
|  | OLS | FE - Fixed Effects | OLS (Driscoll and Kraay, 1998) | OLS | FE - Fixed Effects | OLS (Driscoll and Kraay, 1998) |
| *imp* | 1,2810*** | 0,8016* | 1,2810** | -0,8895 ** | -0,1032 | -0,8895 |
|  | (0,4148) | (0,4509) | (0,3358) | (0,3558) | (0,4691) | (0,6791) |
| *end* | 0,0433*** | 0,0054 | 0,0433*** | 0,2709*** | 0,1083 ** | 0,2709 *** |
|  | (0,0112) | (0,0052) | (0,0106) | (0,0505) | (0,0476) | (0,0633) |
| *dim* | -0,0932*** | -0,3739*** | -0,0932*** | -0,0010 | -0,1364*** | -0,0010 |
|  | (0,0095) | (0,0284) | (0,0226) | (0,0058) | (0,0355) | (0,0039) |
| *cresc* | 0,7412*** | 0,8140*** | 0,7412*** | 0,5635 *** | 0,5828 *** | 0,5635 *** |
|  | (0,0391) | (0,0440) | (0,0703) | (0,0798) | (0,0966) | (0,0819) |
| *roa* | -0,1994*** | -0,0501** | -0,1994*** | -0,0648 | -0,1345 | -0,0649 |
|  | (0,0436) | (0,0216) | (0,0447) | (0,0870) | (0,0835) | (0,1535) |
| *efamiliar* | 0,0215 | -0,0442 | 0,0215 | -0,0101 | -0,008 | -0,0101 |
|  | (0,0136) | (0,0337) | (0,0113) | (0,0146) | (0,0183) | (0,0111) |

| | | | | | | |
|---|---|---|---|---|---|---|
| *5.codcae* | -0,1857*** | - | -0,1857*** | -0,1401 *** | - | -0,1401*** |
| | (0,0103) | - | (0,0240) | (0,0123) | - | (0,0178) |
| *8.codcae* | 0,0197* | - | 0,0197 | 0,0896*** | - | 0,0896*** |
| | (0,0120) | - | (0,0201) | (0,0161) | - | (0,0132) |
| *14.codcae* | -0,1089*** | - | 0,1089 ** | 0,0861 *** | - | 0,0861*** |
| | (0,0161) | - | (0,0347) | (0,0188) | - | (0,0203) |
| constant | 1,5364*** | 4,8523*** | 1,5364*** | 0,2162 ** | 2,09673*** | 0,2162 * |
| | (0,1257) | (0,3356) | (0,2937) | (0,1016) | (0,4850) | (0,0873) |
| *i.year* | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 73 953 | 73 953 | 73 953 | 19 803 | 19 803 | 19 803 |
| R-squared | 0, 1683 | 0,0951 | 0, 1683 | 0,2005 | 0,1078 | 0,2005 |

Table 6. Robustness test. Note: Robust standard errors are referred to in parentheses and take into account the cluster at the enterprise level. The symbols ***, ** and * express statistical significance at levels of 1%, 5% and 10%, respectively. Source: Own elaboration.

When analyzing the robustness tests performed, presented in Table 6, some differences can be verified. Initially, by analyzing the coefficient of the *imp* variable, it assumes a higher value in relation to the model with the complete sample. That is, the *imp* variable has a greater impact on the explanation of discretionary accruals when the sample is restricted to microenterprises. Also, in the scope of taxation, we found that for non-microenterprises (small and medium-sized enterprises), the value of the *imp* variable coefficient presents a negative sign for the OLS method, not having statistical significance in the fixed effects model and OLS with standard errors of Driscoll and Kraay (1998). In view of these results, differences in taxes paid in discretionary accruals between microenterprises and non-microenterprises are revealed, being more relevant in microenterprises to explain discretionary accruals. Continuing, there are significant differences between the coefficients of the variables *end*, *dim*, and *roa* for the two subsamples. Indebtedness appears to have a greater impact explaining discretionary accruals for bigger companies, compared to microenterprises, with a much higher coefficient. On the other hand, the coefficients of the variables *dim* and *roa* do not show statistical significance among the subsample of small and medium-sized enterprises explaining discretionary accruals. Thus, we can sustain that for the model and subsample in question, the variables that measure the indebtedness and growth of the company are more important in explaining the discretionary accruals for non-microenterprises. In line with the total sample model, the *dummy* variable *efamiliar* does not have statistical significance for the two subsamples, attesting, once again, that this characteristic may not influence creative accounting practices in this study.

These findings show evidence of the importance of taxation, indebtedness and growth on explaining creative accounting practices. They concur with the existing literature in earnings management within portuguese SME's (Cunha, 2013; Moreira, 2008; Sousa et al., 2019). However, microenterprises showed significant differences in the variables that explain discretionary accruals, compared to small and medium-sized enterprises. Indicating that a discrete approach to both subsamples might have better outcomes analyzing discretionary accruals, and the variables that explain them.

The practical implications for policymakers, investors, banks and the tax authority are clear. Policymakers and the tax authority should consider the effect on creative accounting practices, while creating or changing tax law. On the same side, investors and banks must consider creative accounting practices, and the variables that influence them, in making unbiased decisions analyzing financial statements, especially regarding SME's.

## CONCLUSIONS

This study aimed to analyze how micro, small and medium-sized enterprises in Portugal behave towards creative accounting practices, and the influence that some of the structural and corporate governance variables have on their practices. It was corroborated by the suspicion of creative accounting practices within Portuguese micro, small and medium-sized enterprises. Taxation shows a strong relationship with creative accounting practices, being even more impactful within microenterprises. There were no differences in relation to creative accounting practices between family and non-family businesses. This study contributes to the scarce literature on the creative accounting of small companies. The results of this study may be important for various institutions and regulators, such as the Tax Authority, banking institutions, European structural and investment fund managers, and other investors. Knowing the vital economic relations that SMEs have with the various stakeholders, the quality of the accounting information of these companies should be guaranteed. This study found several limitations. Most of the companies in the sample are expected to use simpler accounting standards for SME's, which may eventually influence various financial items used in this study, as well as the variables used in the discretionary accrual's detection model. It is possible to notice the presence of *outliers* in the sample. Although there are mechanisms of smoothing of variables, such as *winsorize*, they were not used. For the future, it would be important to expand research in this area. In a post-pandemic context, it would be pertinent to understand the impact on the quality of financial information of the two years of health and economic crisis that companies had to face.

## REFERENCES

Anderson, R.C. and Reeb, D.M. (2003), "Founding-Family Ownership and Firm Performance: Evidence from the S&P 500", Journal of Finance, Vol. 58 No. 3, pp. 1301–1327, doi: 10.1111/1540-6261.00567.

Anton, S.G. and Carp, M. (2020), "The effect of discretionary accruals on firm growth. Empirical evidence for smes from emerging europe", Journal of Business Economics and Management, Vol. 21 No. 4, pp. 1128–1148, doi: 10.3846/jbem.2020.12734.

Associação das Empresas Familiares. (n.d.). "Empresas Familiares em Portugal", available at: https://empresasfamiliares.pt.

Balaciu, D., Bogdan, V. and Vladu, A.B. (2009), "A brief review of creative accounting literature and its consequences in practice", Annales Universitatis Apulensis Series Oeconomica, Vol. 1 No. 11, pp. 170–183.

Balaciu, D. and Vladu, A.B. (2010), "Creative Accounting Players and their gains and loses", The Journal of the Faculty of Economics - Economic, Vol. 1 No. 2 December, pp. 813–819.

Blazek, R., Durana, P. and Valaskova, K. (2020), "Creative Accounting as an Apparatus for Reporting Profits in Agribusiness", Journal of Risk and Financial Management, Vol. 13 No. 11, p. 261, doi: 10.3390/jrfm13110261.

Comissão das Comunidades Europeias. (2003), "Recomendação da Comissão de 6 de Maio de 2003 relativa à definição de micro, pequenas e médias empresas", Jornal Oficial Da Uniao Europeia, Vol. d, pp. 36–41.

Cunha, M. (2013), "Métodos Empíricos para Detetar Práticas de Manipulação de Resultados", Revista Da Ordem Dos Revisores Oficiais de Contas, Vol. 63, pp. 15–23.

Dechow, P.M., Sloan, R.G., Sweeney, A.P., Sloan, R.G. and Sweeney, A.P. (2015), "Detecting Earnings Management", Asian Financial Statement Analysis, Vol. 70, John Wiley & Sons, Inc., Hoboken, NJ, USA, pp. 73–105, doi: 10.1002/9781119204763.ch4.

Driscoll, J.C. and Kraay, A.C. (1998), "Consistent covariance matrix estimation with spatially dependent panel data", Review of Economics and Statistics, Vol. 80 No. 4, pp. 549–559, doi: 10.1162/003465398557825.

Duarte, M.R. and Ribeiro, M. da S. (2007), "Contabilidade criativa: algumas abordagens", Toc, Vol. 93, pp. 29–35.

European Comission. (2009), Final Report of Expert Group – Overview of Family-Business- Related Issues: Research, Networks, Policy Measures and Existing Studies.

Hoechle, D. (2007), "Robust standard errors for panel regressions with cross-sectional dependence", Stata Journal, Vol. 7 No. 3, pp. 281–312, doi: 10.1177/1536867x0700700301.

Jacobson, D.D. (2009), "Revisiting IT governance in the light of institutional theory", Proceedings of the 42nd Annual Hawaii International Conference on System Sciences, HICSS, pp. 1–9, doi: 10.1109/HICSS.2009.374.

Jones, J. (1991), "EARNINGS MANAGEMENT DURING IMPORT RELIEF INVESTIGATIONS", Journal of Accounting Research, Vol. 29 No. 2, pp. 193–228.

Jones, M.J. (2011), Creative Accounting, Fraud and International Accounting Scandals, Wiley.

de Luca, M.M.M., Viana, A.O.B., Sousa, K.D.F. de, Cavalcante, D.S. and Cardoso, V.I. da C. (2020), "Gerenciamento de resultados e republicação de demonstrações contábeis em empresas listadas na B3", RACE - Revista de Administração, Contabilidade e Economia, pp. 1–24, doi: 10.18593/race.23711.

Moreira, J.A.C. (2008), "Incentivos à manipulação dos resultados no contexto português : o impacto do Pagamento Especial por Conta ( PEC )", AECA Revista Da Associación Española de Contabilidad e Administración de Empresas, Vol. 83, pp. 66–69.

Niyama, J., Rodrigues, A.M. and Rodrigues, J. (2015), "Some thoughts on creative accounting and international accounting standards", Revista Universo Contábil, No. March, pp. 69–87, doi: 10.4270/ruc.2015104.

Othman, H. ben and Zeghal, D. (2006), "A study of earnings-management motives in the Anglo-American and Euro-Continental accounting models: The Canadian and French cases", International Journal of Accounting, Vol. 41 No. 4, pp. 406–435, doi: 10.1016/j.intacc.2006.09.004.

Paiva, I.S., Lourenço, I.C. and Branco, M.C. (2016), "Earnings management in family firms: Current state of knowledge and opportunities for future research", Review of Accounting and Finance, Vol. 15 No. 1, pp. 85–100, doi: 10.1108/RAF-06-2014-0065.

Paiva, I.S., Lourenço, I.C. and Dias Curto, J. (2019), "Earnings management in family versus non-family firms: the influence of analyst coverage", Revista Espanola de Financiacion y Contabilidad, Vol. 48 No. 2, pp. 113–133, doi: 10.1080/02102412.2018.1463764.

Pinto, A.P.S. and Augusto, M.G. (2014), "Are There Non-linear Relationships between Ownership Structure and Operational Performance? Empirical Evidence from Portuguese SMEs Using Dynamic Panel Data", International Journal of Business Administration, Vol. 5 No. 3, pp. 162–180, doi: 10.5430/ijba.v5n3p162.

PORDATA. (2021a), "Empresas: total e por setor de Atividade Económica", available at: https://www.pordata.pt/DB/Portugal/Ambiente+de+Consulta/Tabela (accessed 24 July 2021).

PORDATA. (2021b), "PIB (base=2016). Quanta riqueza é criada?", 10 September.

Sousa, A., Góis, C. and Viseu, C. (2019), "Earnings management in SMEs: Evidence from Portugal and Spain", International Financial Reporting Standards and New Directions in Earnings Management, IGI Global, pp. 101–26.

Tassadaq, F. and Malik, Q.A. (2015), "Creative accounting and financial reporting: Model development and empirical testing", International Journal of Economics and Financial Issues, Vol. 5 No. 2, pp. 544–551.

Varzim, T. (2019), "Economia portuguesa cresceu mais em 2016, 2017 e 2018", Jornal de Negócios, 23 September.

# STUDY OF THE KEY PERFORMANCE INDICATORS (KPIS) IMPLEMENTATION IN SUPPLY CHAIN MANAGEMENT

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## ABSTRACT

This article aims to analyze the literature review of multiple articles published in Europe, based on implementing the Key Performance Indicators (KPIs), only between 2017-2022. The idea arises from the critical importance of KPIs in measuring the performance of companies. Implementing KPIs in companies can bring immediate feedback on problems and better ways of management. With the help of Industry 4.0, which plays a fundamental role in supply chain management in today's modern times, this article proposed a framework using KPIs (considered only for finance, transport, sales, and inventory). The guiding pillars of this article are based on improving products/ services, increasing productivity/ efficiency, setting the company's goals/ decision-making, increasing customer satisfaction, and improving employer performance.

*Keywords: Key Performance Indicators (KPIs), Performance Measurement and Management, Implementation, Supply Chain, Industry 4.0.*

## INTRODUCTION

The current condition in the World Economy made companies understand that to succeed with competitors, they need to be quick, flexible, and focused on their company strategy, which has moved from a production or cost-oriented ideology to a strategic orientation. The current tools or instruments known as Key Performance Indicators (KPIs) assist in maintaining a high level of production performance.

KPIs are management tools or instruments so that an activity or process can be followed, controlled (if it deviates, it can be recognized for correction), and ensured to achieve the desired performance *(Setiawan & Purba, 2020).*

KPIs are essential for planning, supporting, and controlling management's decisions through company information. KPIs are essential for companies that intend to establish a performance management system based on measurable aspects of the company functions. KPIs help define and measure company goals essential for success and sustainability. The development of KPI indicators must be trustworthy and legitimate.

KPIs have a significant impact on the company if they are implemented with a good structure and systematically. Below are some positive impacts that companies receive when they implement key performance characteristics *(Atikno et al., 2021)*:

1.It is easier for their companies to either evaluate employee performance or reduce subjectivity.

2.Employees are motivated to work to achieve the company's objectives.

3.More measurable performance results can be used as a reference to reward the best-performing employees.

4.KPIs can provide a reference for the company to achieve goals because there are good guidelines for each employee and the company.

According to *(Parmenter, 2015),* there are three significant benefits of ascertaining a company's critical success factors and the associated performance measures:

1.A clarity of purpose, from aligning the daily staff actions to the company's success factors.

2.Improving performance through having fewer and more meaningful measures.

3.Creating wider ownership, empowerment, and fulfillment at all company levels.

This article aims to categorize and identify KPIs in supply chains based on viewpoints such as articles by authors/country/sector (activity)/year/benefits of implementation (results/ findings), and development for performance measurement.

## RESEARCH METHODOLOGY

### *Theoretical Framework*

In this article, using KPIs to measure each company's performance is considered an appropriate strategy. Multiple articles conducted in relation to Key Performance Indicators (KPIs) were gathered and identified based on author/s, sector, country, and research findings/ results. The literature review covers articles from international conferences/ journals covering KPIs in Europe from 2017 to 2022.

It was required to conduct the following steps to make this article understandable, straightforward, and precise:

*a. The first step* is to choose this article's research topic, "Key Performance Indicators," and to gather articles that relate to the issue in reputable databases like Google Scholar and Research Gate.

*b. The second step* is to map or filter the collected articles to only include those that address highly pertinent research questions for 2017–2022.

*c. The third step* is to list all pertinent articles according to the author(s), sector(s), activity(ies), country(ies), and findings/ results of article publication.

*d. The fourth step* is to list all pertinent articles according to only the European publication area of articles.

*e. The fifth step* is to identify strengths and weaknesses for implementing Key Performance Indicators

for other researchers/ companies.

More details on the literature review steps in this research are presented in Figure 1 (below):
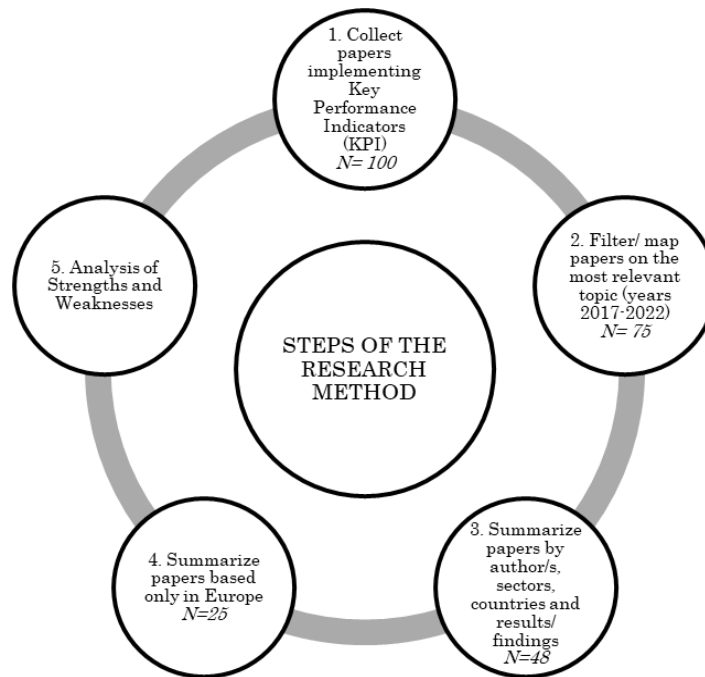


Figure 1. Theoretical Framework

### Data Collection

Data collection from the Theoretical Framework (Figure 1) in this article is reflected in Table 1 (below):

| Number | Author/s | Sector | Country | Findings/ Results |
|---|---|---|---|---|
| 1 | Dimitris Vordonis et al., 2022 | Information Technology | Greece | It is crucial to experiment with these cutting-edge technologies to learn about their limits because the advent of 5G will accompany many new ones. It is vital to experiment with these advanced technologies to learn about their limitations because the start of 5G will attend many new ones. |
| 2 | Ana Francisca Costa et al., 2022 | Manufacturing | Portugal | The system was the product of collaboration between academia and business, which allowed for the creation of a set of KPIs and a Dashboard that made it simple for the organization to begin tracking its performance. |
| 3 | M.C. Lopez Escalante et al., 2022 | Energy | Spain | In the first and fourth four-month periods, the module-to-cell ratio for modules made using 4.30-4.35W cells declined from 7.7 W to 6.5 W. |
| 4 | Radim Lenort et al., 2022 | Manufacturing | Czechia | The article's purpose was to outline a technique for choosing KPIs that could be used to evaluate how well smart logistics, technology, and applications performed in terms of sustainability. |
| 5 | Cecile Kremer et al., 2022 | Health | Belgium | Results imply that contact tracing in Belgium has successfully prevented further transmission, and those aware of their SARSCoV-2 exposure exhibited more guarded social interaction behavior. |
| 6 | Giuditta Contini & Margherita Peruzzini, 2022 | Manufacturing | Italy | The article summarized sustainability KPIs based on the Triple Bottom Line concept, which relates to social, economic, and environmental sustainability. Such KPIs (48 social indicators, 30 ecological indicators, and 39 economic indicators) might enable businesses to gauge their success in terms of corporate |

| | | | | |
|---|---|---|---|---|
| | | | | sustainability. |
| 7 | Pierre Gaillard, 2022 | Research | France | An investigation produced logical conclusions expressed as a second spatial derivative of a logarithm of an order determinant. |
| 8 | Foivos Psarommatis et al., 2022 | Finance & Accounting | Norway | The number of production scenarios is used to verify the resulting cost function. The case study illustrating the suggested cost modeling technique uses real-time and historical data from two industrial partners in the production of electronic circuits and tungsten metal. |
| 9 | Andra Luciana Turcanu & Carmen Gasparotti, 2021 | Transportation | Romania | Only through an adequate conception and organization in developing national fleets and ports can the Inland Waterway transport maintain its benefits as an objective need for modern national and international economies. |
| 10 | Andrew Brint et al., 2021 | Manufacturing | United Kingdom | The article compared how well the original set of twenty-eight KPIs performed to the performance of the smaller group of eight KPIs. The two TOPSIS time series maxima were concurrent, with a strong link between them. |
| 11 | Pedro Faria et al., 2021 | Energy | Portugal | By installing PV generation in public buildings and, ideally, altering the energy tariff to better match the PV generation profile, the study demonstrates how the KPI of the energy bill (and savings) changes in one year. Using and sharing PV power might result in up to 11.27% savings. |
| 12 | Shiran Esmaily et al., 2021 | Health | United Kingdom | The article demonstrates that a high-quality PB endoscopy service can be provided throughout the COVID-19 pandemic safely and efficiently. |
| 13 | Rick Gilsing et al., 2021 | Business model | Netherlands | The article explains how business model design may produce soft KPIs through deliberate language summaries. |
| 14 | Gianpaolo Sabia, 2020 | Wastewater treatment | Italy | The article suggests focusing on ten specific wastewater treatment plants. For three of the selected buildings, the margins for energy savings were more significant than 60%. |
| 15 | Carina Siedler et al., 2020 | Manufacturing | Germany | A Monte-Carlo simulation is performed to determine the range of potential new values for the OEE and NEE. The article assumes that the new values are minimum or maximum. Consequently, the OEE ranges from 60.7% in the worst case to 79.3% in the best case and the NEE from 60.8% in the worst case to 79.5% in the best case. |
| 16 | Joud Al Dakheel et al., 2020 | Energy | Italy | A study shows current gaps in the literature and is based on establishing a set of nine sets of standard performance measures for smart buildings. |
| 17 | Gerben M. Scheepmaker et al., 2020 | Transportation | Netherlands | The article established a toolset of SMART KPIs for rail operations impacted by the train-driving strategy. These KPIs include punctuality, energy use, driver workload, environmental pollution, upkeep costs, and brand perception. |
| 18 | Robert Joppen et al., 2019 | Manufacturing | Germany | In the article, a KPI notion for future production was provided. KPIs are connected to production changes relevant to Industry 4.0 in each framework. |
| 19 | Komninos Angelakoglou et al., 2019 | Research | Greece | The use of KPIs from the CITY Keys and SCIS projects is discussed in the article to simplify the evaluation process at the European level. |
| 20 | Witold Torbacki & Kinga Kijewska, 2019 | Transportation | Poland | A review of a collection of typical logistical factors related to industrial processes is presented in the article, which also considers sustainability and the tenets of the concepts of Industry 4.0 and Logistics 4.0. |
| 21 | Carlos Oliveira Cruz et al., 2019 | Construction | Portugal | The article included a roadmap of doable steps arranged in a matrix (double entry: each of the three levels of sustainability; and three levels of actions: operational, tactical, and strategic), as well as a list of KPIs to gauge its success. |
| 22 | Geanina Silviana | Information | Romania | When an innovation process is in progress, establishing KPIs is |

| | Banu, 2018 | Technology | | used to optimize it by designating actions to meet process goals consistently. |
|---|---|---|---|---|
| 23 | Giorgio Ante et al., 2018 | Manufacturing | Italy | The KPI framework offers manufacturing engineers and managers a valuable tool for assessing the effectiveness of the examined BPS. It also enables the discovery of correlations between the various KPIs, consistent with operational improvement. |
| 24 | Pritesh S. Morar et al., 2017 | Health | United Kingdom | Seven gastroenterologists and fourteen surgeons made up the panel of twenty-one experts. An agreement was reached on procedure specific KPIs for ileocaecal and perianal surgery for Crohn`s disease. |
| 25 | Nicole Stricker et al., 2017 | Manufacturing | Germany | A real-world application example used to demonstrate the impact of model parameter choice on optimization outcomes serves to validate the research. |

Table 1. Data collection

### *The Relationship between KPIs and Industry 4.0*

The interest in Performance Measurement and Management has increased in the last years worldwide, and one of the main reasons comes from the use of Industry 4.0. Nowadays is essential for managers/ directors to measure the performance of their company with KPIs using Industry 4.0. Industry 4.0 is the next step of the industrial revolution that can further transform production flow and change the communication between humans and machines, as well as the interaction between suppliers, producers, and customers (*Suleiman et al., 2022*).

 (*Mörth et al., 2020*) developed a framework for performance measurement through the determination of KPIs in operations management. As defined in ISO 22400, the framework classifies ten KPIs into different categories, depending on their purpose of use: throughput, cycle time, transport performance, transport utilization, time utilization, effectiveness, availability, reliability, energy efficiency, and overall equipment effectiveness.

This article develops a framework for Performance Measurement and Management in Industry 4.0, reflected in Figure 2 (below), owning to five functions, which are:

*1. Prepare for Performance Measures.*

*2. Analyze/ forecast sales/ revenues.*

*3. Key Performance Indicators (KPIs)* (considered only for finance, transport, sales, and inventory), which are:

a. Order fill rate.

b. Perfect order rate.

c. Cash-to-cash cycle time.

d. Customer order cycle time.

e. Inventory turnover.

f. On-time shipping.

g. Return on investment (ROI).

h. Inventory to sales ratio (ISR).

i. Estimated time of arrival (ETA).

j. Days sales of inventory (DSI).

k. Billing Accuracy.

l. Carrying cost of inventory.

*4. Real-time collection/ control of the results.*

*5. Analyze/ decision-making about the results.*
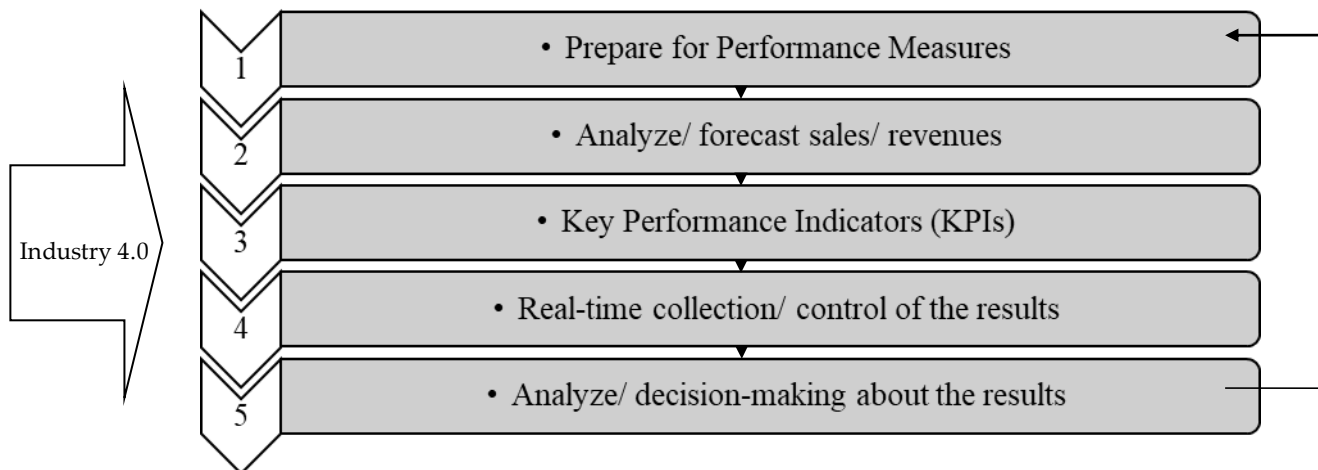


Figure 2: Development of KPIs in Industry 4.0

## RESULTS AND DISCUSSION

*Results from Data Collection*

Table 1 describes twenty-five articles (published between the years 2017-2022 only in Europe) that are related to the implementation of Key Performance Indicators based on the following elements:

- Author/s.

- Sector/ activity.

- Country.

- Findings/ results.

From the data collected from Table 1, the number of articles between the years 2017-2022 in this research is reflected in Figure 3 (below):
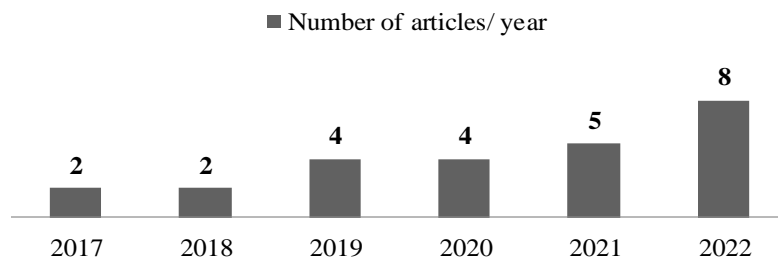
Figure 3: Number of articles by year

From the data collected from Table 1, the number of articles between the years 2017-2022 by country in this research is reflected in Figure 4 (below):
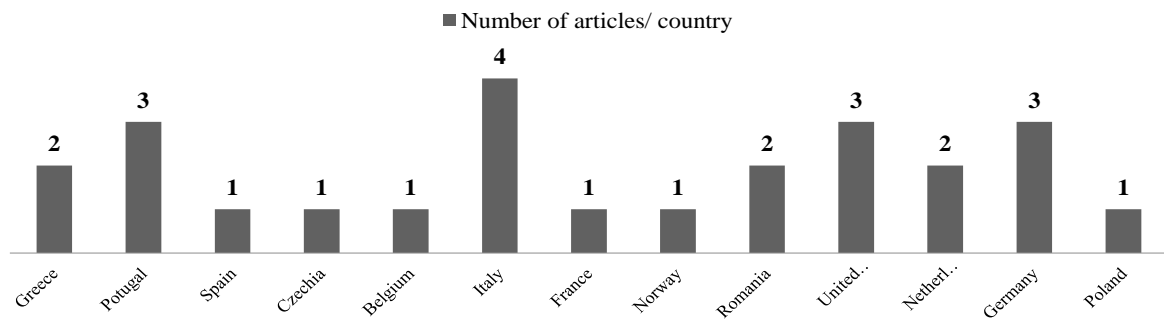


Figure 4: Number of articles by country

From the data collected from Table 1, the number of articles between the years 2017-2022 by sector in this research is reflected in Figure 5 (below):

Numbers of articles/ sector
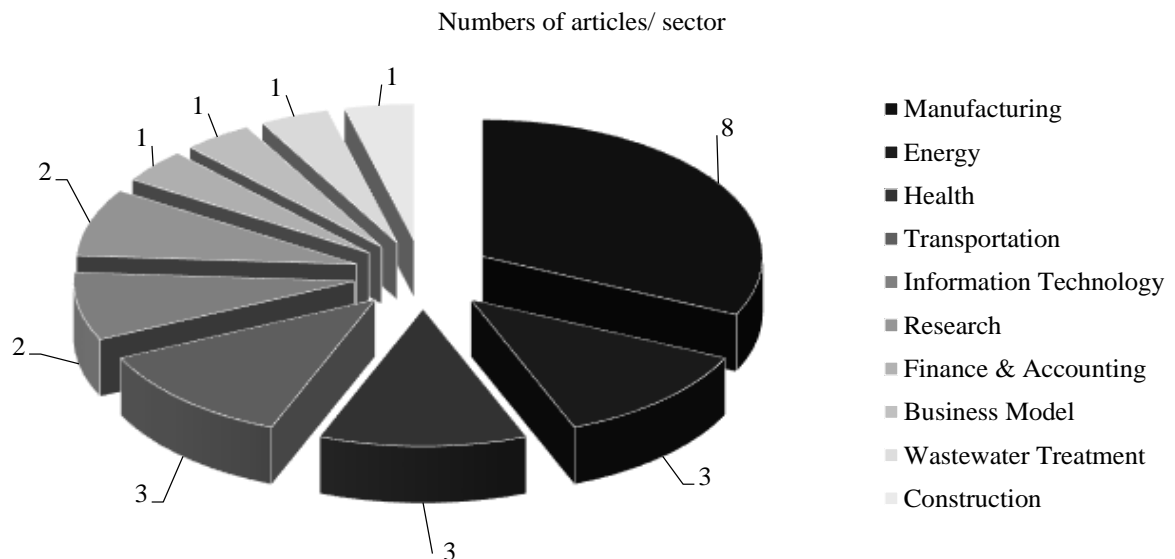


Figure 5: Number of articles by sector

From the data collected in Figure 4, this article concludes that:

- The most significant number of articles is published in Italy with four articles, followed by Portugal, United Kingdom, and Germany with three articles each, Greece, Romania, and the Netherlands with two articles each, Spain, Czechia, Belgium, France, Norway, and Poland with one article each.

From the data collected in Figure 5, this article concludes that:

- The most widespread sector handled is Manufacturing with 32%, followed by Energy, Health, and Transportation with 12% each, Information Technology and Research with 8% each, Finance & Accounting, Business Model, Wastewater treatment, and Construction with 4% each.

*Analysis of Strengths and Weaknesses*

The final step used in this article is the Analysis of Strengths and Weaknesses obtained from the data collected from the literature review.

*Strengths in the implementation of KPIs*

The implementation of KPIs provides many strengths for companies, as follows:

- Help make decisions,

- Help set the company`s goals,

- Help increase productivity/ efficiency,

- Help provide rewards or punishments when are necessary,

- Help improve the services,

- Help increase customer satisfaction.

*Weaknesses in the implementation of KPIs*

The implementation of KPIs provides some weaknesses for companies, as follows:

- Require a longer time for implementation,

- Require more work from employees of companies for implementation,

- Require a more practical system for implementation,

- Require an overwhelming amount of information.

KPIs implementation in companies has been mostly done to measure employee performance or management accountability.

## CONCLUSION

The three primary functions of Performance Measurement and Management in Industry 4.0 are Predictive Analysis, KPIs (Key Performance Indicators), and Real-time control/ Decision-making. This article proposes a framework for Performance Measurement and Management in Industry 4.0 using KPIs (considered only for finance, transport, sales, and inventory). The main functions of KPIs in Industry 4.0 are: to prepare for performance measures, analyze/ forecast sales/ revenues, real-time collection/ control of the results, and analyze/ decision-making about the results. Future research can apply KPIs in measuring the performance of productivity, information technology, human resources, finance/ accounting, sales, etc.

## REFERENCES

Setiawan Indra, and Purba Humiras Hardi, (2020), "A Systematic Literature Review of Key Performance Indicators (KPIs) Implementation", Journal of Industrial Engineering and Management, vol. 3, pp 200-208

Atikno Welly, Setiawan Indra, and Taufik Deni, (2021), "Key Performance Indicators Implementation: Literature Review and Development for Performance Measurement", Industrial Engineering and Management Systems, vol. 3, pp 189-197

Vordonis Dimitris, Giannopoulos Dimitris, Papaioannou Panagiotis, Tranoris Christos, Denazis Spyros, Rahav Ran, Altman Baruch, Bosneag Anne-Marie, Jain Shubham, Margolin Udi, Mawasy Bader, Oikonomou Kostantinos, and Markopoulos Ioannis, (2022), "Monitoring and Evaluation of 5G Key Performance Indicators in Media Vertical Applications", IEEE International Mediterranean Conference on Communications and Networking, vol. 1, pp 203-208

Costa Ana Fransisca, Pinto Ana, Mendes Ana Catarina, Quinteiro Ana Rita, Coelho Carla, Meira Carla, Pereira Isac, Marinho Jorge, Barbosa Josė, Cunha Natacha, Miranda Rui, Drumond Nuno, and Lima Rui, (2022), "Key Performance Indicators: A Perspective on Developing and Implementing Performance Indicators in a Textile Company Warehouse", Innovations in Mechanical Engineering, vol. 2, pp 317-328

Lŏpez-Escalante M.C., Peinado-Pėrez J.J., Palanco S., Ramos-Barrado J.R., and Martin F., (2022), "Silicon Solar Cell Production Line and Key Performance Indicators: A Case of Study at Front Size Serigraphy Stage", Solar Energy, vol. 242, pp 267-275

Lenort Radim, Wicher Pavel, Samolejová Andrea, Zsifkovits Helmut, Raith Chaira, Miklautsch Philipp, and Pelikanova Jana, (2022), "Selecting Sustainability Key Performance Indicators for Smart Logistics Assessment", International Scientific Journal about Logistics, vol. 9, pp 467-478

Kremer Cĕcile, Willem Lander, Boone Jorden, Oňate Wouter Arrazola, Hammami Naima, Faes Christel, and Hens Niel, (2022), "Key Performance Indicators of COVID-19 Contact Tracing in Belgium from September 2020 to December 2021", medRxiv

Contini Giuditta, and Peruzzini Margherita, (2022), "Sustainability and Industry 4.0: Definition of a Set of Key Performance Indicators for Manufacturing Companies", Sustainability, vol. 14, p 11004

Gaillard Pierre, (2022), "Rational Solutions to the KPI equation from Particular Polynomials", Wave Motion, vol. 108, pp 102828

Psarommatis Foivos, Danishvar Morad, Mousavi Alireza, and Kiritsis Dimitris, (2022), "Cost-based Decision Suppor5t System: A Dynamic Cost Estimation of Key Performance Indicators in Manufacturing", IEEE Transactions on Engineering Management, vol. 1, pp 1-13

Turcanu Andra Luciana, and Gasparotti Carmen, (2021), "Role of Key Performance Indicators in Port Management", European Integration-Realities, and Perspectives, Proceedings, vol. 16, p 1

Brint Andrew, Genovese Andrea, Piccolo Carmela, and Taboadas-Paerez Gaerardo J., (2021), "Reducing Data Requirements when Selecting Key Performance Indicators for Supply Chain Management: The Case of a Multinational Automotive Component Manufacturer", International Journal of Production Economics, vol. 233, p 107967

Faria Pedro, Lezama Fernandoi, Vale Zita, and Khorram Mahsa, (2021), "A Methodology for Energy Key Performance Indicators Analysis", Energy Informatics, vol. 4, pp 1-15

Esmaily Shiran, Yau Chia Chuin, Dwarakanath Deepak, Hancock John, and Vikramjit Mitra, (2021), "Impact of COVID-19 Pandemic on Key Performance Indicators in Pancreatobiliary Endoscopy: Prioritise, Minimize Risk, Keep Scoping and Training", Frontline Gastroenterology, vol. 12, pp 288-292

Gilsing Rick, Turetken Oktay, Ozkan Baris, Grefen Paul, Adali Onat Ege, Wilbik Anna, and Berkers Frank, (2021), "Evaluating the Design of Service-Dominant Business Models: A Qualitative Method", Pacific Asia Journal of the Association for Information Systems, vol. 13, pp 36-70

Sabia Gianpaolo, Petta Luigi, Avolio Francesco, and Caporossi Emilio, (2020), "Energy Saving in Wastewater Treatment Plants: A Methodology Based on Common Key Performance Indicators for the Evaluation of Plant Energy Performance, Classification, and Benchmarking", Energy Conversion and Management, vol. 220, p 113067

Siedler Carina, Langlotz Pascal, and Aurich Jan C., (2020), "Modeling and Assessing the Effects of Digital Technologies on KPIs in Manufacturing Systems", Procedia CIRP, vol. 93, pp 682-687

Aldakheel Joud Aljumaa, Del Pero Claudio, Aste Niccolŏ, and Leonforte Fabrizio, (2020), "Smart Buildings Features and Key Performance Indicators: A Review", Sustainable Cities and Society, vol. 61, p 102328

Scheepmaker Gerben M., Willeboordse Helen Y., Hoogenraad Jan H., Luijt Ralph S., and Goverde Rob M. P., (2020), "Comparing Train Driving Strategies on Multiple Key Performance Indicators", Journal of Rail Transport Planning and Management, vol. 13, p 100163

Joppen Robert, Enzberg Sebastian, Kűhn Arno, and Dumitrescu Roman, (2019), "Data Map- Method for the Specification of Data Flows within Production", Procedia CIRP, vol. 79, pp 461-465

Anngelakoglou Komninos, Nikolopoulos Nikos, Giourka Paraskevi, Svensson Inger-Lise, Tsarchopoulos Panagiotis, Tryferidis Athanasios, and Tzovaras Dimitrios, (2019), "A Methodological Framework for the Selection of Key Performance Indicators to Assess Smart City Solutions", Smart Cities, vol. 2, pp 269-306

Torbacki Witold, and Kijewska Kinga, (2019), "Identifying Key Performance Indicators to be Used in Logistics 4.0 and Industry 4.0 for the Needs of Sustainable Municipal Logistics by Means of the DEMATEL Method", Transportation Research Procedia, vol. 39, pp 534-543

Cruz Carlos Oliveira, Gaspar Patricia, and De Brito Jorge, (2019), "On the Concept of Sustainable Sustainability: An Application to the Portuguese Construction Sector", Journal of Building Engineering, vol. 25, p 100836

Banu Geanina Silviana, (2018), "Measuring Innovation Using Key Performance Indicators", Procedia Manufacturing, vol. 22, pp 906-911

Ante Giorgio, Facchini Francesco, Mossa Giorgio, and Digiesi Salvatore, (2018), "Developing a Key Performance Indicators Tree for Lean and Smart Production Systems", IFAC-PapersOnLine, vol. 51, pp 13-18

Morar Pritesh S., Hollingshead James, Bemelman Willem, Sevdalis Nick, Pinkney Thomas, Wilson Graeme, Dunlop Malcolm, Davies Justin R., Guy Richard, Fearnhead Nicola, Brown Steven, Warusavitarne Janindra, Edwards Cathryn, and Faiz Omar, (2017), "Establishing Key Performance Indicators and Their Importance for the Surgical Management of Inflammatory Bowel Disease–Results From a Pan-European, Delphi Consensus Study", Journal of Crohn`s and Colitis, vol. 11, pp 1362-1368

Stricker Nicole, Minguillon Fabio Echsler, and Lanza Gisela, (2017), "Selecting Key Performance Indicators for Production with a Linear Programming Approach", International Journal of Production Research, vol. 55, pp 5537-5549

Suleiman Zhanybek, Shaikholla Sabit, Dikhanbayeva Dinara, Shehab Essam, and Turkyilmaz Ali, (2022), "Industry 4.0: Clustering of concepts and characteristics", Cogent Engineering, vol. 9, p 2034264

Mörth O., Emmanouilidis Christos, Hafner N., and Schadler M., (2020), "Cyber-physical systems for performance monitoring in production intralogistics", Computers and Industrial Engineering, vol. 142, p 106333

# MEASURING ENTREPRENEURSHIP INTENTIONS: THEORETICAL-METHODOLOGICAL ASPECTS

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## ABSTRACT

This article aims at identifying entrepreneurial intention assessment possibilities and presenting a conceptual framework for assessing entrepreneurial intentions. The theoretical evidence revealed that although entrepreneurial intentions are determined by individual self-determination, the latter can be influenced through entrepreneurship promotion. Entrepreneurship is a multifaceted and heterogeneous activity; therefore, it is essential to understand entrepreneurship assessment challenges to achieve effective investment by policymakers in supporting entrepreneurship and developing an entrepreneurial society. Despite of the usually conscious and voluntary decision to become an entrepreneur and despite of entrepreneurial intentions as the first incentives motivating a person to undertake a new activity, it is not straightforward to determine appropriate indicators of entrepreneurial intentions measurement. Based on the study, in the future, a pilot assessment of entrepreneurial intentions could be conducted to refine an entrepreneurship intention measurement questionnaire as a methodological tool.

*Keywords: Entrepreneurship, entrepreneurial intention measurement, indicators, entrepreneurship promotion, Theory of Planned Behavior*

## INTRODUCTION

The definition of entrepreneurship and the development of a conceptual framework for the assessment of entrepreneurial intentions have two interrelated problems. First, the entrepreneurship definition is hindered by difficulties in conceptualizing and quantifying theoretical models of the entrepreneurial process, second, the lack of consensus and concreteness hinders the development of a theoretical model of entrepreneurship assessment. This article aims at: 1) identifying functional definitions and theories of entrepreneurship confirming that entrepreneurship is a dynamic, complex, and multifaceted phenomenon; 2) identifying the tools for assessing entrepreneurship and entrepreneurial intentions most often mentioned in scientific literature and used in research; the strengths, and weaknesses of these tools; 3) presenting a conceptual framework for assessing entrepreneurial intentions. It has been observed that there is a lack of research that examines in detail

the existing tools for assessing entrepreneurial intentions and refines the relevant assessment model based on them. From a theoretical point of view, this study contributes to existing entrepreneurship research by adding new insights into the measurement practices of entrepreneurial intentions, noting the potential influence of entrepreneurship promotion on intentions. Entrepreneurial intentions are greatly influenced by personal, individual, and attitude, however, as the review of scientific sources shows, the benefits of entrepreneurship promotion initiatives cannot be denied: promoting entrepreneurship contributes to strengthening confidence, developing an understanding of financial and business issues, and encouraging the desire to start one's own business. Although entrepreneurial intentions arise from the personal choice of an individual as evidenced by the existing methodologies for assessing entrepreneurial intentions, most of which are based on The Theory of Planned Behavior (TPB), the choice can be influenced through entrepreneurship promotion initiatives. So far, the research efforts are limited to the study of A. Petronytė et al. (2019), who conducted a small-scale study that aimed at explaining whether there is a relationship between entrepreneurial intentions and entrepreneurship promotion. However, the research results built on a relatively small sample did not show a correlation between the analysed elements. In the current stage of economic development, which G. Dudzevičiūtė (2015) associates with the growing scale of global trade, intensifying competition in international markets, political unrest, technological changes, the growing problem of natural resource scarcity, growing migration and unemployment, demographic changes, there is a need to systematize economic and theoretical knowledge about entrepreneurship for two reasons. First, entrepreneurship is considered an inseparable part of a canonically functioning market economy: it is claimed that without entrepreneurship, the market economy and the whole society cannot exist and develop. Second, it has been observed that business activity creates conditions for qualitative change and the development of economic relations (Low, 2009). Today, entrepreneurship is widely recognized as a driving force for sustainable economic growth, as entrepreneurial individuals create new businesses, promote and shape innovations, accelerate structural changes in the economy, and introduce new competition, thereby contributing to productivity growth (OECD, 2017). According to Y. Chandra (2018), entrepreneurship is a dynamic, rapidly growing research field with a long intellectual tradition. Its intellectual roots are associated with the works R. Cantillon, F. Knight, and J. Schumpeter, who laid the foundations of the definition of entrepreneurship and dissected its relationship with innovation, economic growth, and uncertainty. The focus on entrepreneurship and its potential for economic development and job creation has led to the recognition of entrepreneurial individuals who play an essential role in the economy.

## THE CONCEPT OF ENTREPRENEURSHIP AND ENTREPRENEUR

Entrepreneurship as an individual activity aimed at profit has been known since ancient times. According to S. Low (2009), the concept of "entrepreneurship" has played an important role in academic literature for about 250 years and has become a focus of much research interest in the last three decades. The term "entrepreneurship" comes from the French word "entreprendre", which means "to start something, undertake", used to describe a person who organizes and manages a business or businesses and takes risks in doing so (Žvinklys et al., 2006; Difference between entrepreneur...). According to J. Žvinklys et al. (2006), an entrepreneur is a natural person who sets up a business and undertakes to implement a risky idea to obtain profit. This person usually transfers the established company to entrepreneurs, and the latter carries out economic and commercial activities.

To date, researchers in the field of entrepreneurship have not provided an unanimously accepted definition of entrepreneurship (Gwija et al., 2014). It is argued that the reason for the lack of a universal definition is that entrepreneurship is studied in many disciplines, which has led to many opinions about its meaning (Nafukho et al., 2010; OECD, 2015). Most economic, psychological, and sociological studies show that entrepreneurship is a process, not a static phenomenon. Entrepreneurship is about change and is also associated with questions of choice. Existing definitions of entrepreneurship often refer to the functional role of entrepreneurs and include coordination, innovation, uncertainty, capital supply, decision-making ownership, resource allocation issues, etc. To be consistent and systematic, it is worth analyzing entrepreneurship starting from the two approaches towards entrepreneurship concepts that are often distinguished in the literature: the functional and the interdisciplinary ones. The latter approach is closer to the current period when the theory of entrepreneurship is developed at a more concrete level, related to the disciplines of applied economics and management. The concepts include the entrepreneurship theory developed by the German historical school and the institutional concept. Concepts based on a functional point of view do not consider entrepreneurship as an independent object of research, they emphasize the functional role of entrepreneurship in the economy. This is especially reflected in the works of the first researchers who studied entrepreneurship.

Around the 20th century, in the mid-2000s, entrepreneurship research gained some momentum by emphasizing a person-centered approach to predicting entrepreneurship based on psychological traits and human characteristics (Braguinsky et al., 2009; Chandra, 2018; Kopycinska et al., 2009). From a psychological point of view, it is acceptable to divide the concepts of entrepreneurship and entrepreneur into two groups. The first one analyzes the factors that make an entrepreneur stand out from society, the second one distinguishes the characteristics of human behavior that can be defined as entrepreneurship, regardless of the conditions in which a person operates. Considering these aspects, psychologists define entrepreneurship as a process of creating new value that takes place over some

time, with efforts, also considering financial, psychological, and social risks, which enables a person to generate profit and feel satisfied and independent. Alternatively, an entrepreneur is defined as a person who has certain characteristics that enable him to undertake a specific activity.

During a study of the psychological characteristics of an entrepreneur in 1960, D. McClelland explained entrepreneurship according to the need for achievement. The researcher drew attention to the following characteristics of successful entrepreneurs: locus of control, ambition, optimism, desire for autonomy and independence, and need for personal value and power (Doran et al., 2018). J. Palidauskaitė (2007), analyzing the theories of motivation in her work, states that D. McClelland paid special attention to the individual's need for power. According to the scientist, individuals with a strong need for power are characterized by a desire to do everything better, they are more motivated, like to solve complex problems, and take responsibility for successes and failures. He also noted that such individuals prefer jobs or work situations that allow them to be personally responsible for results. D. Kopycinska et al. (2009) state that proactive people have six main characteristics: operational dynamism, leadership skills, ability to see opportunities and act in conditions of risk and uncertainty, creativity, independence, ability to adapt to conditions, and intrinsic motivation. Another researcher, J. Timmons, analyzed the characteristics of an entrepreneurial person. According to him, an entrepreneur is an active person who demonstrates initiative, looks for new solutions to improve processes or methods, and has leadership and cooperation skills with others. Another important characteristic is the ability to act, especially to overcome the risks and uncertainties associated with each activity of the individual, as well as the ability to adapt to the changing environment and those around him and the internal motivation that is necessary for the person to act consistently and efficiently and to obtain profit.

Around mid-20th century the "third wave of entrepreneurship theory" came to, characterized by special attention to the individual characteristics of the entrepreneur, his abilities to respond appropriately to economic and social changes, attention to managerial abilities and independence in choosing and making decisions. Attention was also drawn to the special role

of entrepreneurship as an economic regulatory system (C. Brown et al., 2013).

A detailed analysis of the concept of entrepreneurship and entrepreneur showed that the content of entrepreneurship is interpreted differently. In summary, it can be noted that entrepreneurship is reflected in various actions of an individual: to introduce innovations, search and realize the opportunities that have arisen, take risks, create a new reality, and implement ideas. It is a special type of human activity that positively impacts both the environment and the creative individuals themselves. Entrepreneurs use personal initiative and take risks to create new business ventures, and

innovative ways to solve current problems, overcome challenges, or meet the needs of a clearly defined market.

## THEORETICAL ASPECTS OF ENTREPRENEURSHIP ASSESSMENT

Scientific sources show that the assessment of entrepreneurship can be carried out from two points of view – the individual's and the economic entity's (Figure 1).
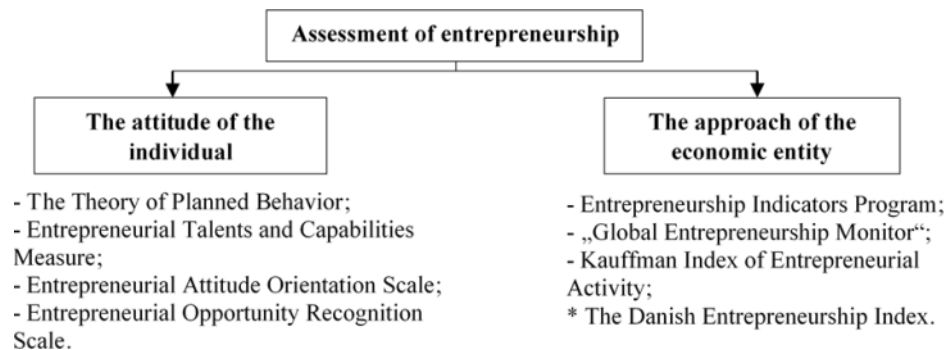


Figure 1. Approaches to entrepreneurship assessment (Source: created by the authors)

Given that this study aims to examine the specifics of entrepreneurial intention assessment, the following describes the assessment of entrepreneurship from the individual's point of view.

Over the past decade, much of the entrepreneurship literature has focused on analyzing attitudes that determine entrepreneurial behavior. Academic entrepreneurship research has traditionally focused on the personality traits, characteristics, and "special" skills of entrepreneurs, including general personality traits, achievement motivation, risk propensity, locus of control, opportunity recognition, etc. (A. Steenekamp et al., 2013). However, many researchers (Huefner, 2016; Ismail et al., 2013; Fernandez et al., 2015; Steenekamp et al., 2013) unanimously admit that the traditional "trait approach" has not been successful in entrepreneurship research. Although traditional methods are considered useful in simplistic studies that rely on the study of traits for exploratory and descriptive purposes to explain some aspects, such as: why and what kind of people become entrepreneurs, researchers conclude that attitudes and behavior approaches are more effective in the field of entrepreneurship research.

According to M. Fernandez et al. (2015), R. Robinson presented three main methods for tracking a person's entrepreneurial attitudes: demographic data, personality, and attitudinal theories. The mentioned methods are related to certain problems that make them unsuitable for assessing the characteristics of entrepreneurs (Ismail et al., 2013). The demographics approach has taken many forms, with some researchers investigating why children of entrepreneurs are more likely to become entrepreneurs themselves, while others have looked at aspects of wealth, gender, and access to social capital as influencing entrepreneurial intentions. Such a methodology is of limited utility due to its static nature, demographic indicators identify who practices entrepreneurship, but do not indicate

actual orientations or attitudes. It also potentially narrows so-called "entrepreneurial intentions" by associating them only with historically more entrepreneurially oriented groups.

The personality trait approach also has its drawbacks. First, the method measures the constructs that are more latent, consistent, and not specifically focused on entrepreneurship. Second, there is no conceptual convergence between different measures of entrepreneurship. Finally, because traditional personality models are based on fixed traits, they do not allow for changes in a person's characteristics that might be expected, for example, through educational experiences, developing a person's skills and mindset. This is especially true when tracking growth (progress) as an indicator of program success. The fundamental disadvantage of a person's attitude is that, just like skills and qualities, it changes over time - thanks to various situations, through an interactive process with the environment, but when a person's attitude is measured, it is possible to predict his future actions (Salilew, 2017).

According to N. Ismail et al. (2013), the Theory of planned behavior (TPB) (I. Ajzen) has become the most popular theoretical framework used in entrepreneurial intention research. B. Robinson et al. (2010) agree that personal attitudes are a better approach for characterizing the entrepreneur than approaches focused on personal characteristics or demographic indicators, which have constituted most of the previous research analyzing entrepreneurial intentions. The literature mentions that the problem is not the psychological characteristics that distinguish entrepreneurs from other individuals, the problems are more related to the theories and methods used to determine these characteristics. Since its creation (1985, I. Ajzen), TPB has become one of the most popular models for predicting human social behavior. The creation of the theory is associated with 1980. I. Ajzen and M. Fishbein developed the Theory of Reasoned Action, which stated that behavior is determined by intentions, attitudes (beliefs about a behavior), and subjective norms (beliefs about the behavior of other people). Later, the theory was extended to the TPB, in which behavioral control (beliefs about the ability to perform a specific behavior) and intentions predict behavior. Added to the attitudes and subjective norms that comprise the theory of reasoned action, a major contribution of TPB is the concept of perceived behavioral control, defined as an individual's perception of the ease or difficulty of performing a certain behavior. However, the great popularity of the method may have led to considerable criticism and debates regarding it (Ajzen, 2012).

In the entrepreneurship literature, the attitude approach is mainly based on the TPB, according to which, a person's behavior can be predicted by considering the intentions, and the intentions, in turn, can be predicted based on the attitude towards the behavior. E.g., the more strongly a person decides to sort the waste (intention), the more likely they are to start doing so (behavior). The study of intentions is mainly devoted to proximal behavior, not long-term goals, but it is recognized that TPB is suitable for entrepreneurship research (The Theory of...). J. Huefner et al. (2014) examined the theoretical adequacy

of the TPB, by considering four additional factors believed to influence entrepreneurial intentions: personality traits, situational factors, demographics, and prior entrepreneurial experience. The study showed that previous entrepreneurial experience, in contrast to personality traits and situational or demographic factors, significantly increased the level of entrepreneurial intention predicted by the TPB. Entrepreneurial intentions essentially derive from opportunity perception and the desire to act, which derives from control beliefs. According to A. Gird et al. (2014), perceived behavioral control and attitude toward entrepreneurship had a significant, positive correlation with entrepreneurial intentions. The TPB consists of the following six parts, which define the factors influencing a person's intention to do a certain act:

1. Attitude. It is an understanding of how favorable or unfavorable a person's specific behavior - action choice is. The objective results of the act are examined;

2. Behavioral intention. It is related to the motivational factors that influence a certain behavior, the greater the intention to act (deed), the more likely the action will be performed;

3. Subjective norms. These include a person's beliefs about whether their peers and significant others think they should perform a particular action;

4. Social norms. Unlike subjective norms, they are related to behavioral standards established in society. It refers to the usual norms of behavior in a group, society, or larger cultural environment. Social norms are considered normative (standard) in a group of people;

5. Perceived forces. This means that there are factors (forces) that can facilitate or hinder a person's chosen behavior. Perceived power means the possibility of a person's perceived control over each of these forces, the smaller the possibilities, the weaker the desire to act;

6. Perceived behavioral control. It involves a person's perception of the ease or difficulty of implementing a chosen behavior. Perceived behavioral control varies across situations and actions, so a person's perception of behavioral control differs depending on the situation. The sixth construct of the theory was added last and created the transition from the Theory of Reasoned Action to the Theory of Planned Behavior. A. Steenekamp (2013) contradicted the previously mentioned A. Grid et al. (2013) and stated that attitude towards entrepreneurship (the first criterion) had the greatest influence on entrepreneurial intentions, while perceived behavioral control and subjective norms had statistically weaker significance.

Z. Sušanj et al. (2015) research paper indicates a correlation between a person's entrepreneurial characteristics, intentions, and behavior. Therefore, some researchers have investigated the indirect effects of entrepreneurial characteristics on entrepreneurial intentions through entrepreneurship attitudes. One of the key approaches is self-efficacy (belief in one's ability to create a successful business). Higher perceptions of self-efficacy are associated with greater intrinsic motivation for

entrepreneurship, long-term investment of effort, and greater resistance to obstacles. The perception of self-efficacy was found to be the most significant and reliable predictor of entrepreneurial intentions and entrepreneurial behavior. However, the belief that we are capable of something does not always equate to the desire to actively act in the relevant field, therefore, the awareness of the desirability of a specific behavior is also important (Desirability of entrepreneurship). Researchers define entrepreneurial desirability as the degree to which a person finds the opportunity to start a business favorably. This perception can reflect internal - attractive and unattractive career standards and can also be conditioned by the external environment: social pressure, laws, etc. The authors argue that the strongest impact on entrepreneurial intensity is perceived and evaluated opportunities and entrepreneurial self-efficacy. Another aspect determining the attractiveness of entrepreneurship is the desirability of entrepreneurship, which shows the attitude towards actions and social norms. The perceived feasibility and desirability of an idea (action) are necessary elements for the realization of an intention. Together these elements form the credibility of entrepreneurship as a career opportunity - the basis on which a person forms entrepreneurial intentions.

Considering the above, a predictive model of entrepreneurial intentions is formed (Figure 2). Entrepreneurial self-efficacy and the desirability of entrepreneurship are the main factors determining entrepreneurial intentions, other entrepreneurial characteristics - entrepreneurial potential and inclination to entrepreneurship influence the aforementioned factors and have a direct and indirect influence on entrepreneurial intentions (Figure 2).

Entrepreneurship is the evolution of business innovation and growth, but all business activity begins at the individual level and some individuals have more potential than others. The Measure of Entrepreneurial Talents and Abilities, META is the latest psychometric test (intro-
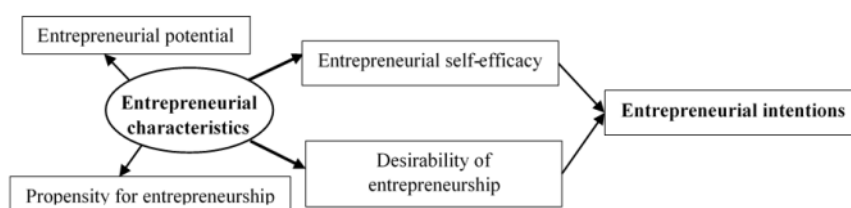


Figure 2. Factors determining entrepreneurial intentions (Source: created by the authors, based on Sušanj et al. (2015)

duced in 2013) that determines entrepreneurial potential to help businesses develop and retain entrepreneurial talents. The test was designed by experienced researchers from the Goldsmiths University of London, Global University of London, and New York University in collaboration with the Harvard Business Finance Laboratory and the United Kingdom Government. META is the result of an extensive 4-year research program, tested on more than 100,000 people in ten languages in 25 countries

of the world. It is the only approved commercial tool for determining entrepreneurial talent (Measure of Entrepreneurial...).

The most popular entrepreneurship assessment methods based on the attitude approach (Entrepreneurial Attitude Orientation Scale, EAO, Entrepreneurial Opportunity Recognition Scale, and Attitude to Entrepreneurship Test) are united by the assessment of entrepreneurship, based on the subject's approach to the presented constructs, which, according to the authors of the methods, determine a person's entrepreneurship.

J. Huefner et al. (2016) sought to compare the effectiveness of four scales often used in entrepreneurship research to distinguish entrepreneurs from non-entrepreneurs: The Entrepreneurial Quotient, EQ, the EAO scale, Myers-Briggs Type Indicator, MBTI and. The Herrmann Brain Dominance Instrument, HBDI, was used to distinguish between entrepreneurs, owner-managers, and non-entrepreneurs. Discriminant analysis showed that each scale, except for EQ, was equally effective in differentiating between entrepreneurs, managers, and non-entrepreneurs. Given the nearly equal effectiveness, the scale choice depends on the research questions. MBTI and HBDI may be best, if personality types or individual preferences in a broader context than entrepreneurship are researched. If the study is only about entrepreneurship, EAO is the best tool. If the research objective is to minimize the number of non-entrepreneurs misclassified as entrepreneurs, the entrepreneurship ratio would be the best choice. The scientist noted that his study was not designed to find out whether psychological characteristics determine entrepreneurial success, although psychological characteristics play an important role, they can easily be overshadowed by other factors, such as market pressure, national economy, funding opportunities, etc.). However, even if psychological characteristics play a minor role in the expression of entrepreneurship, an understanding of what role they play must be part of a general theory of entrepreneurship.

According to F. Leutner et al. (2014), meta-analyses showed that there is a certain personality profile related to a person's determination or intention to start a business, this type of person is characterized by a high level of conscientiousness and a low level of neuroticism, openness, and endurance. It can be argued that the Big Five theory can also explain the differences in entrepreneurial behavior among individuals. D. Pupavac et al. (2015) sought to find out whether extraversion is linked to greater entrepreneurial potential. They claimed entrepreneurs are usually enthusiastic, able to lead, not giving up, proactive, and "jumping forward". Successful entrepreneurs are constantly and actively seeking new business opportunities.

According to the Big Five theory of personality, the character traits that correspond to this behavior are extraversion and openness to new experiences. The researchers conducted the study with 195 students at one of the largest polytechnic institutes in Croatia, Rijeka. The goals of the research are to gain

specific knowledge about student extroversion, to find out whether students, distinguishing entrepreneurial students (the institution has a professional study of entrepreneurship program), meet these parameters, and to indicate the importance of an extroverted personality in creating new business enterprises. The main premise of the study is that entrepreneurship students are more extroverted. However, the study revealed that there were no significant differences in extraversion between all the students who participated in the study. Students of both entrepreneurship studies and other study programs are divided between extroversion and introversion. This should not be surprising since, according to Mr. Mountjoy (2014), most people are neither introverts nor extroverts, many are ambiverts with traits common to both personality types. S. Moyer (2016) stated in his article that optimism is usually a desirable trait, but in fact, it can even harm an entrepreneur, for example, excessive optimism can "suppress" the ability to adequately assess the environment. Learned abilities such as social skills and "behavioral intelligence" also have an impact on business success. According to the researcher, individuals with emotional intelligence are more likely to engage and take innovative entrepreneurial actions. An entrepreneur's social skills are also an important factor in their success. With a high level of social skills, entrepreneurs can gain access to potential partners (investors), customers, and many other resources that would otherwise be unavailable. It is noted that gender also influences the genesis and psychology of the entrepreneur. Research findings show that women have a stronger genetic influence on becoming an entrepreneur, while men are more influenced by the environment around them.

The mentioned tools are designed to analyze entrepreneurship concerning an individual, but on a global scale, countries are evaluated and compared based on objective, measurable data, which are organized into various indices and other comparable, numerically meaningful forms.

## THEORETICAL MODEL OF ENTREPRENEURIAL INTENTION ASSESSMENT

Even though empirical research on entrepreneurial intentions of individuals is rather extensive, it is observed that there are no studies related to the development of a refined framework for assessing entrepreneurial intentions, but there are studies that examine the effects of various factors on entrepreneurial intentions. J. Llados Masllorens et al. (2022) sought to determine the significance of financial skills on entrepreneurial intentions. The main conclusion is that financial skills increase awareness of business opportunities, but do not significantly affect the emergence of entrepreneurial intentions. M. Alshagawi et al. (2022) examined the influence of TPB, social evaluation, and entrepreneurial risk perception in predicting entrepreneurial intentions. Researchers found that perceived attitude and behavioral control are important predictors of entrepreneurial intentions. Social assessment of entrepreneurship is insignificantly related to entrepreneurial intentions but influences

both perceived attitude and perceived behavioral control. The study highlighted the significant negative role of risk perception on entrepreneurial intentions. Similar research results were obtained by M. Ukil et al. (2023), however, their study adds to previous research only by noting that resilience moderates fear of failure and enhances entrepreneurial intentions. Y. Al-Mamary et al. (2020) used two popular models – TPB and Entrepreneurial Attitude Orientation (EAO) to assess the factors influencing entrepreneurial intentions. The findings showed that attitude toward behavior, self-efficacy, autonomy, risk-taking, initiative, and competitive aggressiveness are positively related to the entrepreneurial intentions of business students. The study also showed that most of the dimensions of the TPB and EAO models were the main determinants of entrepreneurial intentions. T. Lopez et al. (2021) tested a model to estimate the relationship between students' entrepreneurship education programs and entrepreneurial intentions. The TPB method was used in the study. Entrepreneurship education programs are useful only in the short term and should aim to encourage students by helping to remove unfounded fears and threats associated with starting a business.

Most researchers have developed ad hoc research instruments, which are relatively difficult since there are considerable differences between the measures of the constructs of those instruments. According to F. Linan et al. (2009), J. Salilew (2017), N. Ismail et al. (2013), B. Robinson et al. (2010), Z. Sušanj et al. (2015), the personal attitudes (attitude) method is better than the commonly used methods based on individual characteristics or demographic characteristics, the shortcomings of the mentioned methods were analyzed by N. Ismail (2013) and M. Fernandez et al. (2015), whose critique is presented in the preceding section. Attitudes are said to measure the extent to which, based on individual values, positively or negatively, a person evaluates a certain behavior. For this purpose, it is important to have a statistically robust and theoretically sound measure.

To create an optimal theoretical model, it is important to delve deeper into the structure of models that assess entrepreneurial intentions. It is possible to single out six main models, most often mentioned in the literature, for the assessment of entrepreneurial intentions (Table 1).

| Model | Author, year | About model | Elements |
|---|---|---|---|
| „Shapero Entrepreneurial Event Model" | Shapero, 1982 | The model was developed to identify the interplay between cultural and social factors that can lead an individual to start a business. | 3 elements are evaluated: 1) Perceived desirability; 2) Perceived feasibility; 3) Determination to act. |
| The Theory of Planned Behavior, TPB | Ajzen, 1991 | Assuming that any behavior requires some level of planning that can be predicted by assessing the intention to perform that behavior. | 6 parts are evaluated: 1) Attitude; 2) Intensity of behavior; 3) Subjective norms; 4) Social norms; 5) Perceived forces; 6) Perceived behavioral control. |
| Entrepreneurial attitude orientation, EAO | Robinson et al., 1991 | Based on attitudinal and entrepreneurship theories. The aim is to separate entrepreneurs from non-entrepreneurs. | Explains the attitude through 4 scales: 1) Innovation; 2) Personal control; 3) Need for achievements; 4) Self-confidence. |

| „Intentional basic model" | Krueger and Carsrud, 1993 | Examines the relationship between attitude and entrepreneurial intentions using a scale that provides greater flexibility in analyzing exogenous influences, attitudes, and intentions. | There is a lack of data on the specific elements that make up the model. |
|---|---|---|---|
| Model of entrepreneurial potential | Krueger and Brazeal, 1994 | Model based on Shaper and Ajzen models. The first 2 elements of the model create probability, which, together with the third element, creates potential. Potential, combined with attraction, creates intent. | 3 constructs are evaluated: 1) Perceived desirability (attitude and social norms); 2) Perceived feasibility (self-efficacy); 3) Credibility. |
| „Davidsson model" | Davidsson, 1995 | The author has put a lot of effort into building a model based on previous work and models, and his biggest contribution is the inclusion of the belief variable as a predictor of entrepreneurship and entrepreneurial action. In addition, he contributed to the association of a person's personality profile with his attitude toward entrepreneurship. | The model states that intentions can be influenced by beliefs, which can be defined in 3 aspects: 1) General attitude; 2) I look at individual areas; 3) Current situation. |

Table 1. Models on the application of personal intention research in the field of entrepreneurship (Source: created by the authors based on Ferreira et al., 2011)

According to the models presented in Table 1, entrepreneurial intentions are influenced by: a person's attitude (e.g.: general and individual fields; to entrepreneurship as a career path, etc.), needs (e.g.: the need for achievements), values, characteristics (e.g.: confidence/self-belief), beliefs (e.g.: perceived desirability and feasibility of behavior; perceived control of behavior). It can be said that every person's intention related to entrepreneurship are determined by psychological factors, i.e. personality characteristics, perception, and motivation, as well as social and cultural factors, which form a significant part of the personality.

Thus, a considerable number of research studies have confirmed the applicability of TPB developed by I. Ajzen for entrepreneurship research, despite some conflicts between the tests that have taken place. F. Linan et al. (2009) claim that the measurement of cognitive variables is characterized by great difficulties, due to which, in the past, most of the conflicts arose. I. Ajzen called the cognitive variables influencing the intention motivational "antecedents", arguing that more favorable antecedents would increase the intention to undertake an activity (Linan et al., 2009). Of course, situational factors also influence entrepreneurial intentions. These external factors (economic situation, perceived difficulty of implementation, influence of other people through social pressure) affect an individual's attitude toward entrepreneurship.

The theoretical model of the entrepreneurship intentions measurement consists of 2 parts:1) Entrepreneurial intentions; 2) Encouraging entrepreneurship. A description of these parts and a general model of the connection are presented later in this subsection.

**Part I of the theoretical model is entrepreneurial intentions**. Built on the models of I. Ajzen (1991) TPB and other authors (Table 1), F. Linan et al. (2009) developed a model of entrepreneurial intentions. The author describes entrepreneurial intentions as a conscious state of mind of a person, directing his attention (and therefore his experience and actions) towards a specific goal (object) or ways (means) to achieve that goal. The model draws attention to 4 main factors - antecedents which are often mentioned in the models of other authors:

- A person's approach to behavior (Ajzen, 1991; Shapero, 1982; Krueger et al., 1993; Davidsson, 1995; Grid et al., 2014; Salilew, 2017, Y. Al-Mamary et al., 2020, etc.);

- Subjective norms (Ajzen, 1991; Shapero, 1982; Krueger et al., 1993; Salilew, 2017, etc.);

- A person's "self-efficacy" (Ajzen, 1991; Salilew, 2017; Kopycinska et al., 2009; Sušanj et al., 2015). Authors agree that these factors influence entrepreneurial intentions, although some of them expand the number of antecedents, e.g., I. Ajzen's model consists of even 6 elements.

- Entrepreneurial intentions (Linan et al., 2009).

F. Linan et al. model developed in 2009 responds to the experience, strengths, and weaknesses of previous entrepreneurship research. According to F. Linan et al. (2009), except for the added demographic variables, the model is equivalent to the PET described by I. Ajzen and has also been used in studies by other researchers: Autio et al. (2001); Erikson (1999); Fayolle et al. (2006); Kolvereid (1996); Kolvereid et al. (2006); Krueger et al. (2000); Reitan (1998); Veciana et al. (2005) and others. All three antecedents, according to F. Linan et al.'s (2009) methodology, have a block of questions assigned to them and are measurable.

**Part II of the theoretical model is the promotion of entrepreneurship.** A review of scientific literature shows that there is a positive relationship between education and entrepreneurship. For example, Ferreira et al. (2011) and Oosterbeek et al. (2010) found that among students, education had the greatest effect on willingness to start a company. Research shows that early entrepreneurship education influences the attitude of young people when choosing a direction in their career field. However, in addition to formal education, there are other means of promoting entrepreneurship. This includes creating business-friendly opportunities and supporting start-ups. However, J. Ferreira et al. (2011) note that the initial decision to undertake entrepreneurial activity is particularly influenced by the knowledge acquired during education (formal or informal) and the motivation aroused.

Not so long ago, ~2005-2007, the interest of researchers in entrepreneurship education programs increased (Veciana et al., 2005; Chand et al. 2006; Fayolle et al. 2006; Lee et al., 2006; Brodie et al., 2007; Pihie et al., 2007; Tang et al., 2007, etc.) (Ferreira, 2011). They observed that the entrepreneurship process begins even before the start of the activity. and it is important that the educational policy is aimed at the development of young people's attitudes and the creation of pedagogical materials related

to entrepreneurship education. According to F. Linan et al. (2009), the studies conducted confirmed the assumption that personal attitude is very important in explaining entrepreneurial intentions, while, according to J. Ferreira et al. (2011), an educational focus on personal attitude formation can be significant for the business creation process and even help to overcome perceived barriers to entrepreneurship.

N.J. Muofhe et al. (2011) state there is a direct and indirect relationship between entrepreneurship promotion and entrepreneurial intention. The latter manifests itself through the antecedents mentioned earlier. Entrepreneurial intentions are also influenced by external factors beyond the control of individuals, such as: economic, political, and social ones. The researchers created an integrated model of intentions, which, in its structure, corresponds to model presented in Figure 3.1 by adding the element "promotion of entrepreneurship". He included this element based on W.G. Dyer's (1995) entrepreneurial career model, which shows that an individual's education is one of the factors that influence career socialization.

The model presented by N.J. Muofhe et al. (2011), also included external factors, but their analysis would require a larger amount of information about the economic, political, and social factors of the analyzed territory, their possible impact on entrepreneurial motivation, since these factors can influence the desire of individuals to start a business. Involving schools, higher education institutions, training providers, business development services, local authorities, and local businesses is crucial in creating the conditions for entrepreneurship to emerge and develop. This ecosystem and its sustainability influence a person's entrepreneurial intentions, therefore, the assessment of the impact of this element on intentions is included in the theoretical model (N.J. Muofhe et al., 2011). Thus, based on the discussed parts of the model, the final theoretical model of entrepreneurial intention assessment is drawn (Figure 3). The promotion of entrepreneurship influences an individual's entrepreneurial intention through the effect on personal attitude for perceived behavioral control influences opinions of others
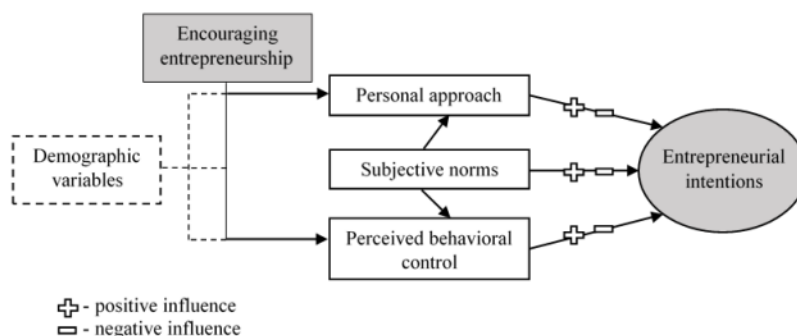


Figure 3. A theoretical model for assessing entrepreneurial intentions (Source: created by the authors based on Linan et al. 2009; Moufhe et al., 2011; van Dalen et al., 2008; Nikolova et al., 2015; Salilew, 2017)

about entrepreneurship (subjective norms) (Figure 3). The methodological part of the study details these elements and the evaluation criteria. The mentioned elements can have a positive "+" or a negative "-" influence, and their total sum determines the final entrepreneurial intention, or a person's entrepreneurship. It is convenient to analyze the received data by dividing the respondents into 2 categories - characterized by high entrepreneurship "+", characterized by low entrepreneurship "-", in this way, it is possible to see the evaluations of the respondents of individual categories and conveniently compare both categories.

## CONCLUSION

The overview of the scientific literature on the assessment of theoretical-methodological aspects of entrepreneurial intentions allows stating that most of research efforts have been focused on employing the TPB model. Considering other researchers' suggestions, we formed a model for researching entrepreneurial intentions as a derivative framework. We state that personal approach, subjective norms, and perceived behavioural control serve as the main determinants of entrepreneurial intentions, where subjective norms affect both personal approach and perceived behavioural control, and where the latter two are under the impact of entrepreneurship encouragement. Moreover, in this model, demographic variables moderate the relationship a) between entrepreneurship encouragement and personal approach, and b) between entrepreneurship encouragement and perceived behavioural control.

We suggest refining the measurement scales of the constructs and testing this conceptual model empirically by conducting a survey of a targeted group of individuals employing statistical data analysis methods such as regression analysis and moderation analysis. This analysis could lead to identifying statistically significant relationships between the variables, indicating the strength and direction (+/–) of the tested impacts.

Further research could focus on refining a measuring scale for the construct of entrepreneurial encouragement or developing its subscales.

## REFERENCES

Ajzen, I. (2012), "The theory of planned behaviour. In Handbook of theories of social psychology", Sage Publishing. pp. 438-459.
Al-Mamary, Y. H., Abdulrab, M., Alwaheeb, M. A., & Alshammari, G. M. (2020), "Factors impacting entrepreneurial intentions among university students in Saudi Arabia: testing an integrated model of TPB and EO", Education & Training, Vol. 62 No. 7/8, 2020 pp. 779-803.
Alshagawiand, M., & Ghaleb, M. M. (2022), "Entrepreneurial intentions of university students in the Kingdom of Saudi Arabia", International Journal of Innovation Science.
Boutillier, S. (2014), "The theory of the entrepreneur: from heroic to socialized entrepreneurship", University of Littoral-Lille Nord de France.

Braunerhjelm, P. (2010), "Entrepreneurship, Innovation and Economic Growth – Past experiences, current knowledge and

policy implications", The Royal Institute of Technology, available at: https://www.diva-portal.org/smash/get/diva2:484894/FULLTEXT01.pdf

Braguinsky, S., & Klepper, S. (2009), "Schumpeterian entrepreneurship", Atsushi Ohyama, University of Illinois, Urbana Champaign.

Brown, C., & Thornton, M. (2013), "How entrepreneurship theory created economics", Quarterly Journal of Austrian Economics, 16(4), pp. 401-420, available at: https://mises.org/library/how-entrepreneurship-theory-created-economic

Chandra, Y. (2018), "Mapping the evolution of entrepreneurship as a field of research (1990-2013): A scientometric analysis", Department of Public Policy, City University of Hong Kong, Hong Kong SAR, China.

Difference between entrepreneur and businessman. Available at: https://cofounderslab.com/discuss/difference-between-an-entrepreneur-and-a-businessman

Doran, J., McCarthy, N., O'Connor, M. (2018), "The Role of entrepreneurship in stimulating economic growth in developed and developing countries". Research Article.

Dudzevičiūtė, G. (2005), Ekonomikos plėtros pagrindai. Generolo Jono Žemaičio Lietuvos karo akademija. Vilnius.

Fernandez, P., & Lanuza, I. M. (2015), "Entrepreneurship, togetherness, and emotions: a look at (postcrisis?) Spain", Journal of Management Inquiry, 24(4), pp. 424-428.

Ferreira, J. J. M., Finisterra do Paco, A. M., Raposo, M., Rodrigues, R. G., & Dinis, A. (2011), "Entrepreneurial intention among secondary students: Findings from Portugal", International Journal of Entrepreneurship and Small Business, 13(1); pp. 92-106.

Gwija, S., Eresia-Eke, C., Iwu, C. (2014), "The Link between Entrepreneurship Education and Business Success: Evidence from Youth Entrepreneurs in South Africa". Economics, 5(2); 2014. pp. 165-175.

Huefner, J., Hunt, H., Robinson, P. (2016), "A comparison of four scales predicting entrepreneurship". Academy of Entrepreneurship Journal 1(2), pp. 56-80. Available at: https://www.researchgate.net/publication/284698514_A_comparison_of_four_scales_predicting_entrepreneurship/references

Ismail, N., Jaffar, N., & Hooi, T. S. (2013), "Using EAO model to predict the self-employment intentions among the Universities' undergraduates in Malaysia". International Journal of Trade, Economics and Finance, 4(5); pp. 282-287.

Kopycinska, D., Bernat, T., Korpysa, J. (2009), "Researching Students Entrepreneurship skills in Post-Socialist Countries: A Multi-Country Survey". Transformations in Business & Economics.

Leutner, F., Ahmetoglu, G., Akhtar, R., Chamorro-Premuzic, T. (2014), "The relationship between the entrepreneurial personality and the Big Five personality traits. Personality and Individual Differences". pp. 58-63.

Linán, F. & Chen, Y.W. (2009), "Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions". Entrepreneurship Theory and Practice, 33(3); pp. 593-617.

Llados-Masllorens, J., & Ruiz-Dotras, E. (2021), "Are women's entrepreneurial intentions and motivations influenced by financial skills?". International Journal of Gender and Entrepreneurship Vol. 14 No. 1, 2022; pp. 69-94.

Lopez, T., Alvarez, C., Martins, I., Perez, J. P., & Roman-Calderon, J. P. (2021), "Students' perception of learning from entrepreneurship education programs and entrepreneurial intention in Latin America, Entrepreneurial intention in Latin America; pp. 419-444.

Low, S. A. (2009), "Defining and Measuring Entrepreneurship for Regional Research: A New Approach. Dissertation". University of Illinois at Urbana-Champaign. Available at: https://works.bepress.com/sarah_low/1/

Measure of Entrepreneurial Talents and Abilities (META). Available at: https://jvrafricagroup.co.za/catalogue/assessment/measure-of-entrepreneurial-talents-and-abilities/

Mountjoy, P. (2014), "Introvert or extrovert? Most of us are ambiverts". The Washington Times. Available at: https://www.washingtontimes.com/news/2014/dec/31/introvert-or-extrovert-most-us-are-ambiverts/

Moyer, S. (2016), "Applying Trait Theory to Determine the Causalty of the Entrepreneur's Success". Southeastern University. Available at: https://firescholars.seu.edu/cgi/viewcontent.cgi?article=1045&context=honors

Muofhe, J. N., & Toit, W. F. (2011), "Entrepreneurial education's and entrepreneurial role models' influence on career choice". University of Johannesburg, Johannesburg, South Africa. SA Journal of Human Resource Management/SA, 9(1); pp. 1-15.

Nafukho, F., Muyia, M. H. (2010), "Entrepreneurship and socioeconomic development in Africa: A reality or myth?", Journal of European Industrial Training.

Nikolova, M., & Graham, C. (2015), "Well-being and emigration intentions: new evidence from the gallup world poll". The University of Maryland, College Park IZA, Maryland, United States. Available at: https://conference.iza.org/ conference_files/transatlantic_2015/nikolova_m9715.pdf

OECD. Entrepreneurship at a Glance 2017. Available at: https://read.oecd-ilibrary.org/employment/entrepreneurshipat-a-glance-2017_entrepreneur_aag-2017-en#page1

OECD. Entrepreneurship at a Glance 2015. Available at: https://www.oecd-ilibrary.org/industry-andservices/entrepreneurship-at-a-glance-2015_entrepreneur_aag-2015-en

Oosterbeek, H., van Praag, M., Ijsselsten, A. (2010), "The impact of entrepreneurship education on entrepreneurship skills and motivation". European Economic Review, 54(3); pp. 442-454.

Palidauskaitė, J. (2007), Motyvacijos unikalumas valstybės tarnyboje. Viešoji politika ir administravimas.

Petronytė, A., Ulbinaitė, A. (2019), "Evaluation of the Relationship Between Youth Entrepreneurship and Emigration Intentions: Theoretical-Methodological Aspects". Proceedings of 6th International Scientific Conference Contemporary Issues in Business, Management and Economics Engineering.

Pupavac, D. (2015), "Extroverted personality as an advantage in entrepreneurship". Polytechnic of Rijeka, Rijeka, Croatia, available at: https://hrcak.srce.hr/149535

Robinson, B., & Roberts, L. P. (2010), "Home-based entrepreneurs, commercial entrepreneurs and white-collar workers: a comparative study of attitudes toward self-esteem, personal control and business growth". Journal of Small Business & Entrepreneurship, 23(3), pp. 333-353.

Salilew, G. F. (2017), "Assessing Entrepreneurial Attitude Orientations of Graduating Students at University of Gondar". European Journal of Business and Management, 9(22); pp. 13-23.

Sušanj, Z., Jakopec, A., & Krečar, I. M. (2015), "Verifying the model of predicting entrepreneurial intention among students of business and non-business orientation". Management, 20(2); pp. 49-69.

Steenekamp, A. G. (2013), "An assessment of the impact of entrepreneurship training on the youth in South Africa". North-West University; pp. 94-192.

Terjesen, S., Wang, N. (2013), "Coase on Entrepreneurship". Small Bus Econ; pp. 173-184.

The Theory of Planned Behavior. Available at: http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories3.html#headingtaglink_3

Ukil, M. I., & Jenkins, A. (2022), "Willing but fearful: resilience and youth entrepreneurial intentions", Journal of Small Business and Enterprise Development Vol. 30 No. 1, 2023; pp. 78-99.

van Dalen, P. H., & Henkens, K. (2008), "Emigration intentions: mere words or true plans? Explaining international migration intentions and behavior". Tilburg University, Tilburg, Netherlands.

Žvinklys, J., Vabalas, E.V. (2006), Apie verslo kalbą. Available at: http://elibrary.lt/resursai/DB/LB/LB_pinigu_studijos/Pinigu_studijos_2006_01_06.pdf

# THE RELATIONSHIP BETWEEN THE ORGANIZATION'S EMOTIONAL CLIMATE, LIFECYCLE AND LEADERSHIP STYLE

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## ABSTRACT

The aim of the study was to establish the presence or absence of a link between the organisation's life cycle, leadership style and the organisation's emotional climate. The author conducted a quantitative study in 8 different types of organisations to determine the relationship between the emotional climate of the organisation, the life cycle and leadership style. The study was limited to the identification of 3 leadership styles - transactional, transformational and Laissez-faire - and the life cycles of organizations were divided into two parts - growing and ageing organizations - based on Adizes' methodology.

The results showed that a leadership style can have a significant impact on the emotional climate of an organization: a transformational leadership style improves the emotional climate in ageing organizations, while a transactional worsens it. Liberal leadership is not a factor in the emotional climate as the organization ages, but its application in growing organizations can worsen the emotional climate. The study also showed that the emotional climate of an organization has an impact on the life cycle of the organization: a growing organization has a more positive emotional climate. However, it is not statistically significantly correlated with the ageing life cycle of the organization: even in an ageing organization, employees can feel emotionally well. The impact of transformational leadership on the emotional climate is independent of the lifecycle of the organization and has a positive impact on both growing and ageing organizations. There is no link between a manager's leadership style and the lifecycle of an organization, but the wrong leadership style can lead an organization into an ageing lifecycle.

*Keywords: Organization life-cycle; leadership styles; emotional climate;*

## INTRODUCTION

Most modern organizations last 15-20 years, but there are those that last centuries because they are able to make the right decisions for their particular stage in the organization's lifecycle. In the face of global crises (the COVID-19 pandemic, the threat of war, climate change) change management has

become more relevant than ever. The role of a leader is a crucial part of the success of an organization: managements' leadership and behavior determine the emotional climate of the organization, which can be used to tell which stage of it's development the company is and what issues are characteristic. A manager's ability to make the right decisions based on the problems inherent in an organization's lifecycle can make a difference to the organization's lifecycle and to employee job satisfaction.

This paper explores the relationship between the emotional climate of an organization, the lifecycle stage and the leadership style of the manager. Organizational lifecycles have been studied by a variety of authors (Miller and Friesen, 1984; Richard 2006; Freeman and Engel, 2007; Jawahar and McLaughlin, 2001): some making distinctions based on the size of the organization, others providing less detailed characteristics or not including the decline phase. The classification of organizational lifecycle stages developed by Adizes (2015) in the 1980s is based on many years of practice, and this article therefore draws on the organizational lifecycle stages identified in Adizes' methodology. There is not much research on the emotional climate of an organization in Lithuania, but it is becoming increasingly popular. In a broader sense, there is some research on the relationship between managerial leadership style and organizational climate (Jenkins, 2019; Sekerka, Fredrikson, 2008) and its impact on performance (Mumford, Scott, Gaddis and Strange, 2002; Goussak, Webber and Ser, 2011), but the relationship between organizational emotional climate, the organization's lifecycle stage and managerial leadership style has not been studied. This study seeks to answer the question of which leadership style is most conducive for creating a favorable emotional climate in an organization for it to move into the high-performance phase of the development lifecycle.

The **aim of this paper is to** establish the relationship between the emotional climate of an organization, its lifecycle and leadership style. The findings of the study would have practical use by identifying how the emotional climate changes with the lifecycles of an organization and what leadership styles managers should adopt in order to integrate their organizations and keep them thriving for as long as possible.

The **paper makes the following assumptions:** emotional climate is significantly correlated with organizational lifecycle; leadership style has a significant impact on organizational emotional climate; organizational emotional climate and managerial leadership style have an impact on organizational life cycle. These assumptions are tested by quantitative research - a quantitative survey of eight different types of organizations. The survey is based on four validated questionnaires: Elsa Peña-Suárez, José Muñi et al. A questionnaire to determine the emotional climate of the organisation (Q15), a questionnaire to determine the lifecycle of the organisation (Q11) based on the Adizes methodology, and a questionnaire developed by Bass and Avolio (1995) *Multifactor Leadership Questionnaire* Form 6-S (Q21) to determine leadership style.

## LITERATURE REVIEW

*Organizational lifecycles and the emotional climate of the organization*

The organization develops in stages, in cycles rather than a linear process. The concept of "lifecycle" to describe the lifecycle of an organization was first used by Boulding in 1950 (von Wobesser, 2016). Many authors have studied organizational lifecycles: Greiner (1997), Adizes (2015), Zakarevičius (2002), Freeman and Engel (2007), Baird and Meshoulam (1998), Jawahar and McLaughlin (2001), Richard (2006), Miller and Friesen (1984), and Lester (2003), among others. Usually organizational lifecycles are divided into 2 to 10 phases. Not all authors have distinguished a stage of decline. Each stage is characterized by certain patterns. Moving from one cycle to the next requires strategic change, new objectives, changes in structure and working methods.

Freeman and Engel (2007) distinguished two development cycles: realization of business ideas and revenue generation. The first cycle ends with the sale of prototypes of the product or services to the customer, the second begins with the generation of revenue from the goods or services, and the feedback received from customers provides a clear roadmap for the way forward. Richard (2006) also distinguished between two phases of organizational life. He points to the early stages (formation and growth) and the later stages (maturity and decline).

Three organizational lifecycles were identified by Baird and Meshoulam (1988). The authors divided the activities of an organization into three cycles: birth, maturity and decline. They are defined as building blocks, where activities provide the basis for subsequent phases. They do not distinguish between the death of an organization, because companies do not seek it, but can rebuild/revitalize themselves in response to environmental factors.

The lifecycle of an organization is divided into 4 cycles by Jawahar and McLaughlin (2001). The authors define cycles of birth, growth, maturity and rebirth, without distinguishing between decline and death. Each stage of development has its own characteristics. In the initial birth phase, a business plan is developed and implemented, and the viability of the business and its subsequent progression to the next phase depends on securing the cash flow. In the growth phase, once the survival issue has been overcome, the organization is looking for growth opportunities, investment, stability and structure. The maturity phase has a slower growth rate, but is considered the most successful of all the phases, with high revenues, operational efficiency, stability and proactivity. As an organization moves from maturity to decline, there is a period of transition - a rebirth - during which managers take steps to build on past achievements, or at least some of them.

The five cycles of organizational growth have been identified by Greiner (1997), Miller and Friesen (1984) and Lester (2003). Greiner identified only the growth cycles and argued that in each of the 5 cycles there is a long-term period of opportunity and a period of crisis caused by major shocks.

He identified creativity as an opportunity in the first phase of the organization's development, and the need for leadership as a potential crisis. In the second phase, purposeful leadership is essential, but there is a crisis of autonomy. In the third stage, delegation offers opportunities, allowing for expansion and growth, while excessive owner control is a threat. In the fourth phase, growth is possible through coordination, but the threat of bureaucracy is already looming. In the fifth phase, growth is possible through cooperation - the crisis is overcome through new structures and programmes that give employees a break.

Miller and Friesen (1984) distinguish between the following organizational lifecycles: birth, growth, maturity, revival and decline. Lester (2003) also refers to stages of growth but also of decline. He identified the stages of existence, survival, success, renewal and decline. I. Adizes (1979) methodology distinguishes 10 life cycles of an organisation: pre-marital; infancy; Go-Go, adolescence; prosperity, stability, aristocracy, early bureaucracy, bureaucracy, death. Most organizations do not move from one life cycle to the next in the traditional sense (Lester and Parnell, 2002; Miller and Friesen, 1984), so Adizes (1979) suggests 5 categories that indicate that an organization ceases to exist without moving on to the next stage: accidental love affair; death of an infant; founder's family trap; and divorce (premature aging, unrealized entrepreneur).

| AUTHORS | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| | BEGINNING | DEVELOPMENT | MATURITY | DIVESRIFICATION | DECLINE |
| Freeman and Engel (2007) | Realising of business ideas and generating revenue | | | | - |
| Richard (2006) | Early (formation and growth) | | Late (maturity and decline) | | |
| Baird and Meshoulam (1988). | Birth | Maturity | | | Decline |
| Jawahar and McLaughlin (2001) | Birth | Growth | Maturity | Revival | - |
| Greiner 1972 | Innovation | Orientation | Delegation | Collaboration | - |
| Miller and Friesen (1984) | Birth | Growth | Maturity | Revival | Decline |
| Lester (2003) | Existence | Survival | Success | Renewal | Decline |
| Adizes (1979) | Pre-marital; Infancy | Go-Go Adolescence | Prosperity | Stability | Aristocracy, Early Bureaucracy, Bureaucracy, Death |

Table 1 Models of organizational lifecycles

This article draws on Adizes' (2015) stages of the organizational lifecycle, which combines many of the authors' categorizations and is based on practice, while analyzing the challenges for the leader at each stage of the organizational lifecycle, and the leadership styles required. I. Adizes (1979) methodology distinguishes 10 stages of the life cycle of an organization: pre-marital stage; infancy; Go-Go,

adolescence; prosperity, stability, aristocracy, early bureaucracy, bureaucracy, death. According to Adizes (2015), the life cycle of an organization is determined by two factors: flexibility and level of control. According to the level of control and flexibility, Adizes divides all organizational life cycles into two parts: growing and aging organizations. Each cycle has its own specific managerial behavior and the resulting emotional climate for employees.

Growing organizations *(Pre-marital, Infancy, Go-go, Adolescence, Prosperity)* succeed by taking risks, they are more concerned with getting things done than with getting them right. In such organizations, problems are seen as challenges to be overcome and new opportunities to be created. The leader is a very important part of the organization, he or she is the driving force behind it, and changing the leader can change the whole organization. It is important for employees at this stage to know the purpose of their work and to create as much value as possible for their customers.

In ageing organizations *(Stability Cycle, Aristocracy, Early Bureaucracy, Bureaucracy, Death)*, employees are risk-averse and outperform their expectations because they no longer have such high ambitions. It becomes more important to document what has been done than to do a better job. In such organizations, the achievement of the organization's objectives or the pursuit of higher profits becomes more important than the customer. Employees are evaluated on their personal qualities, not on their contribution to the goal. To change such an organization, you need to change the whole system, not just the leader. Each lifecycle of an organization offers different opportunities and challenges for employees, which is why emotional well-being is an important indicator of where an organization is in its lifecycle.

The **emotional climate of an organization** is a long-term characteristic of the internal environment of an organization that is experienced by its members and influences their behavior (Taguiri, 1968). The emotional climate of an organization is determined by the values, goals, beliefs and attitudes of the organization, the influences of the social environment (Tran, 1998) and the manager's behavior (Kelner et al., 1994; Momeni, 2009), and their leadership style. Organizational climate measures how employees feel in their work environment, the interpersonal relationships fostered among team members and the contribution they make to the overall performance. The climate is created by its leader through the values, culture and working environment of the organization, helping employees feel important and empowered to achieve their goals.

*Theoretical analysis of the leadership style, emotional climate and organizational life cycle*

A manager's leadership style is one of the key factors influencing the emotional climate of an organization and the relationship between managers and employees (Dele, Nanle, & Abimbola, 2015). Research on emotional climate and leadership styles is still lacking (Mumford et al. (2002); Jung et al.

(2003). In recent years, managerial leadership style has been seen as an important variable in relation to the organizational environment (Samul, 2016). This paper will look in more detail at three leadership styles, which are differentiated according to the aspect of social interaction: transactional, transformational and "Laissez-faire" (or liberal style).

A *transactional leader* maintains distance between employees, often setting high standards for tasks and giving short deadlines, which can lead to tension in the organization when the leader is not liked. Employees are afraid to make suggestions, to object, to react creatively to situations. The transactional leader unilaterally sets the organization's policies, procedures for achieving goals, team relationships and incentives and penalties (Van Vugt et al. 2004). On the other hand, a transactional leader can keep employee engagement and motivation high by choosing the right incentives. In such organizations, employees are result-oriented, but can often feel fear and tension that if they don't achieve their goals, they will be punished.

A *transformational leader* seeks to motivate others by challenging them and creating an atmosphere of trust in the organization. He transforms his follower, so that the followers feel trust and respect for the leader. Employees believe in the leader, are inspired by the vision and feel important because their individual needs are taken into account. Such a leader encourages the search for new solutions, fosters creativity and provides psychological security. Followers have higher productivity, job satisfaction and commitment to the organization. (Fiaz, Su, Ikram, Saqib, 2017). The organization is characterized by active communication from the bottom to the top and vice versa. A leader creates an atmosphere where employees feel psychologically safe and not afraid to speak up or be wrong.

A *laissez-faire leader* supports a loose organizational culture with an informal environment. Employees are given the freedom to make decisions, which means that subordinates can use their own opinions to make decisions without being subjected to strict policies or procedures (Gill, 2014). Such leaders avoid advising employees on their decision-making, which increases employee responsibility but also creates good conditions for development and learning about the necessary tools for organizational growth (Eagly, Mary, Schmidt and van Engen 2003). In such an organization, employees are often in conflict over roles and responsibilities because the manager does not take ownership of his or her role. In addition, they feel less committed to the organization because the manager does not provide feedback nor motivates the employees (Bass, Avolio, 1997).

In growing organizations, the leadership style depends on the lifecycle of the organization. In **the pre-marital phase**, it is essential to motivate your team and inspire them to work together, to be creative; **in the infancy phase** you need to focus on the result and the activities to be carried out, which is why the leader needs to be more controlling, ambitious, with deadlines that are not always comfortable,

and to manage in a centralized way. The **Go-Go phase** requires both a focus on results (transactional management) and the maintenance of creativity (transformational management). **In adolescence** there's sharing of responsibilities and the search for an identity in the organization, and the increase in decision-making, which can lead to a temporary loss of control, so adopting a liberal leadership style and not being actively involved in the organization's decision-making could exacerbate the situation. **In prosperity**, employee engagement is high, targets are still ambitious and creativity is encouraged. In this cycle, a manager could choose a transformational leadership style and set high goals to motivate his/her employees, thus psychologically empowering them, while a transactional manager would only reduce the sense of responsibility and creativity. **In a cycle of stability**, the organization stops growing, so it starts to lose creativity and lack new ideas. A transformational leader in this cycle would take care of his or her employees, reward performance, adopt more flexible working conditions and foster community, while a liberal leader in this cycle would share responsibilities with followers.

In ageing organizations (**aristocracy, early bureaucracy, bureaucracy and death)**, employees have low levels of engagement, lack creativity, high levels of internal conflict, low levels of control and low levels of goal orientation**.** A liberal leader can impose too little control in these cycles, and employees themselves will be less engaged, leading to consistently poor results. A transactional leader will set goals and demand obedience, but will not react to the emotional state of team members and will not see that they are no longer able to innovate and achieve goals.

In summary, a leader should choose a leadership style that not only enhances the productivity and effectiveness of the employees, but is also appropriate to sustain the organization in its life-cycle phase of prosperity, as this will determine whether the  will move to a higher level of growth, become obsolete or maybe return to prosperity.

## METHODOLOGY

*Aims, objectives, methods and sample of the study*

The **aim of the study is to** establish the relationship between the leadership style of the CEO and the emotional climate of the organization and it's lifecycle. The **research question is:**  what is the relationship between the emotional climate of the organization, the lifecycle and the leadership style in the selected organizations? **Type of research -** quantitative. **Participants -** employees and managers of selected organizations.

The study proposes and tests nine hypotheses: **Hypothesis 1:** Emotional climate ($x^1$) has a statistically significant correlation with organizational lifecycle. **Hypothesis 2:** Leadership style ($x^2$) has a significant impact on the emotional climate of the organization. **Hypothesis 3:** The emotional climate

of the organization ($x^1$) and the leadership style of the CEO ($x^2$) have an impact on the organization's lifecycle. **Hypothesis 4:** The leadership style of the CEO ($x^2$) has an impact on the organization's life cycle. **Hypothesis 5:** There is a positive relationship between liberal leadership style and positive emotional climate. **Hypothesis 6:** There is a positive relationship between a growing organization and a positive emotional climate. **Hypothesis 7:** There is a positive relationship between a liberal leadership style and a negative emotional climate. **Hypothesis 8:** There is a positive relationship between an ageing organization and transactional leadership style. **Hypothesis 9:** There is a positive relationship between a growing organization and transformational leadership style.

The **method** chosen for the study is a quantitative survey. Eight organizations participated in in the survey, they operate in: public administration, accommodation, transport, tourism and catering companies and two educational institutions. During the empirical study 290 respondents from 8 organizations were interviewed, in all organizations more than 50% of the workforce were respondents. In order to determine the relationship between the variables, the correlation analysis method — Spearman's correlation coefficient *r*- was applied. To calculate the results of the study, t-test, Kolmagorov-Smirnov, Shapiro-Wilk tests, regression and moderator analyses were performed.

*Explanation of the factors to be measured and the constructs used to measure them.*

A short 15-question construct developed by Elsa Peña-Suárez, José Muñi, Ángela Campillo-Álvarez, Eduardo Fonseca-Pedrero and Eduardo García-Cueto (2013) was chosen to measure the emotional climate. The questionnaire to identify the lifecycle of an organization was developed by the author according to the methodology of I.Adizes (2015) (11 questions). The questionnaire uses a type of opinion rating scale, which requires the respondent to give an opinion about an object by selecting one object rather than another according to the given characteristics (Dikčius, 2011). It divides the life cycles of organizations into two groups: growing and ageing organizations. The following lifecycles fall into the category of growing organizations: *Infancy; Go-Go, Adolescence* and *Prosperity*. The group of ageing organizations includes the *Stability, Aristocracy, Early Bureaucracy, Bureaucracy* and *Death* cycles. The description for a *growing organization* was weighted (1) and for *an ageing organization (2)*.

To measure leadership style, a short form of the *Multifactor Leadership Questionnaire 6-S (MLQ-6S )* developed by Bass and Avolio (1992) was used, consisting of 21 questions. This instrument is a reliable tool to identify which leadership style - transformational, transactional or Laissez-faire - is used by the leaders of an organization.

## RESEARCH RESULTS

In order to maintain confidentiality obligations for the organizations studied, in this article refers to

them to by letters rather than names. Thus, the emotional climate survey shows that the most favorable emotional climate is perceived by the employees of organizations "B" (mean 3.91) and "C" (mean 3.98). The emotional climate is also quite positive in the "F" (mean 3.6) and "G" (mean 3.62) organizations. Employees of „E" (mean 3.3) and „H" (mean 3.4) organizations have a less positive view of the emotional climate in their organizations. The emotional climate of the organizations„A" (mean 3.0) and „D" (mean 2.9) had the lowest scores.

The Lifecycle Survey revealed that respondents considered 3 of the organizations in the survey to be in the growth phase of their lifecycle, while 5 in the ageing phase. Organizations „B", „C" and „D" are growing organizations, while „A", „E", „F", „G" and „H" are ageing organizations. In all growing organizations, employees care about their work objectives, are committed to doing a good job, willing to take responsibility and see problems as opportunities. These organizations have a clear reward system in place, which is an important factor in increasing job satisfaction and motivation. In growing organizations, employees are rewarded for taking more risks, thus motivating them to take on more ambitious challenges.

In all the ageing organizations, the inertia created has been very pronounced, the loss of control is evident, and change requires an adjustment of the whole system, not just the manager. They are also more likely to succeed by setting more achievable goals, i.e. they are motivated to stand still and not challenge themselves.

The third part of the questionnaire, the Multifactor Leadership Questionnaire (Form 6-S) developed by Bass and Avolio (1992), was designed to determine the leadership styles of the organizational leaders. The average of the factors for each leadership style shows that transactional leadership style is more pronounced in organizations 'A' (mean –4.2), 'C' (mean –4.3), and 'G' (mean –3.75), but not as pronounced in organization 'G' as in the other two.

According to the employees of organizations 'B' and 'F', the most important factors for the managers of these organizations are those that correspond to the transformational style, but this style is much more pronounced in the organization 'B' (mean 4.5) than in 'F' (mean 3.8). The "Laissez-fire" leadership style is characteristic of the three organizations „E", „D" and „H". It is strongest in the organization "E" (mean 4.5) and weaker in the "D" (mean 3.5) and "H" (mean 3.7).

Analyzing the expression of the individual factors in the 8 organizations, we can see that, according to the employees of the participating organizations, 3 are in the growth cycle and 5 are in the ageing phase. Leadership styles (transactional, transformational, Laissez-faire) are used in both growing and ageing organizations. The assessment of the emotional climate of the organizations shows that some are more positive and others more negative.

| ORGANIZATION | PREVAILING LEADERSHIP STYLE | ORGANIZATION LIFECYCLE | AVERAGE EMOTIONAL CLIMATE SCORE |
|---|---|---|---|
| ORGANIZATION "A" | TRANSACTIONAL | AGING | 3,0505 |
| ORGANIZATION "B" | TRANSFORMATIVE | GROWING | 3,9163 |
| ORGANIZATION „C" | TRANSACTIONAL | GROWING | 3,9822 |
| ORGANIZATION "D" | LIBERAL | GROWING | 2,9611 |
| ORGANIZATION "E" | LIBERAL | AGING | 3,3179 |
| ORGANISATION "F" | TRANSFORMATIVE | AGING | 3,6577 |
| ORGANIZATION "G" | TRANSACTIONAL | AGING | 3,6200 |
| ORGANIZATION „H" | LIBERAL | AGING | 3,4489 |

Table 2 Results of the study

The study shows that there is a statistical relationship between emotional climate and organizational lifecycle. The Pearson correlation coefficient was used to determine the relationship between these two quantitative indicators. The results showed a weak correlation (coefficient 0.420) between emotional climate and organizational life cycle. A correlation is statistically significant at the 0.01 level. This means that the correlation is statistically significant, there is a positive statistical relationship between the emotional climate of the organization and the leadership style (p. < 0.001).

An independent t-test was used to identify the difference between the lifecycle and the emotional climate in both growing and ageing organizations. The average emotional climate score for a growing organization was found to be (3.7865), and (3.2276) for an ageing one, suggesting that **there is a relationship between a growing organization and a positive emotional climate**. (p. 0,025).

The Pearson correlation coefficient showed that there is a correlation between a leadership style and the emotional climate of the organization (coefficient - 0.682, p. < 0.001). A correlation is statistically significant when the level of statistical significance is 0.01.

The regression analysis of the relationship between organizational emotional climate and leadership style in growing and ageing organizations showed that the data is suitable for analysis due to the Adjusted R square coefficient being at 0.489, the Durbin Watson coefficient at 1.995 and the VIF being less than 4, meaning the x's are not correlated. Emotional climate in ageing organizations has been found to be directly related to transformational leadership styles and inversely related to transactional leadership styles. It can be concluded that the transformational leadership style improves the emotional climate in ageing organizations, while the transactional leadership style worsens the emotional climate in such organizations. Liberal leadership is not an influencing factor for emotional climate in the ageing cycle (p. >0.05) According to the Standardized coefficient Betta, it can be concluded that the regressor of the transactional (0.826) leadership style in the model is more

influential than the transformational one (-0.96), with a p<0.05, and therefore statistically more significant.

The regression analysis shows that there is a direct relationship between transactional and transformational leadership styles and the emotional climate of a growing organization. As these leadership styles become more pronounced in growing organizations, the emotional climate improves. There is also a negative statistical relationship between liberal leadership style and positive emotional climate in growing organizations, i.e. there is a positive relationship between liberal leadership style and negative emotional climate in growing organizations. Therefore, it can be concluded that the use of the Laissez-faire leadership style worsens the emotional climate of the organization in the cycles of growth. Staff feel that the organization needs to have systems in place to create the foundation for a growing organization, but managers have left everything to their own devices. In ageing organizations, this hypothesis has not been confirmed.

The Persson's coefficient shows that there is a correlation between the manager's leadership style and the organization's life cycle (coefficient value 0.299, p. < 0.001). Regression analysis shows that emotional climate also has a direct relationship with the organization's life cycle (unstandardized coefficient 0.305, p.<0.01). The data is suitable for analysis due to the Adjusted R square coefficient of 0.489, the Durbin Watson coefficient of 0.255 and the VIF being less than 4, which means that x is uncorrelated with each other. No statistical relationship was found between the  leadership style and organizational lifecycle (p>0.05). There is no statistical relationship between an ageing organization and a transactional leadership style (Person's coefficient = 0.134). It is possible that the relationship was not established as only the leadership style of the top manager was measured, and when the whole team is in charge it does not necessarily manifest itself strongly in the field of management. Also the organizations studied are very different and not all of them are currently being managed effectively as shown by the results of the emotional climate survey.

 In the next stage of the study, the statistical relationship between the emotional climate and the life cycle of the organization was analyses. The Pearson correlation coefficient was used to determine the relationship between these two quantitative indicators. The results show **a** weak **relationship (coefficient 0.299)** between **emotional climate and the lifecycle of an organization.** A correlation is statistically significant at the 0.01 level. Meaning there is a positive statistical relationship between the emotional climate of the organisation and the leadership style (p. < 0.001).

A regression analysis of the relationship between the emotional climate of the organization and the leadership style in an ageing organization showed that liberal leadership has a p-value > 0.05, meaning the factor does not influence the emotional climate in an ageing organization. It also found a positive relationship between transformational leadership style and the emotional climate in ageing

organizations. A leader adopting a transformational leadership style in ageing organizations could improve the emotional climate.

The results also show that there is a negative statistical relationship between transactional leadership style and the emotional climate in an ageing organization. This means that the more transactional the leadership style, the worse the emotional climate becomes.

A moderator analysis of how the impact of leadership styles (x) on emotional climate (y) depends on the organization's lifecycle (w) found that the impact of Laissez-faire leadership on emotional climate depends on the organization's lifecycle. The effect of transformational leadership on the emotional climate is independent (p>0.05) of the organization's lifecycle, which means that transformational leadership has a positive impact on the organization across all lifecycles. The impact of transactional leadership on the emotional climate depends on the lifecycle of the organization, as we found before: in growing organizations it has a positive impact on the emotional climate, while in ageing ones it has a negative one.

| Leadership style | r. | p. |
|---|---|---|
| LIBERAL | 0,0674 | 0000 |
| TRANSFORMATIONAL | 0,0033 | 0,1044 |
| TRANSACTIONAL | 0,0762 | 0 |

Table 3 The moderating role of organizational lifecycle (w) on the emotional climate (y) for different leadership styles (x)

Moderator analysis was used to calculate the effect of the lifecycle of a growing organization (w) as a moderator between leadership styles (x) and emotional climate (y). The study shows that the link between a positive emotional climate and the leadership style chosen is stronger in growing organizations.

| Leadership style | r.2 | p. |
|---|---|---|
| LIBERAL | 0,0098 | 0,0268 |
| TRANSFORMATIVE | 0,0060 | 0,0253 |
| TRANSACTIONAL | 0,0889 | 0,000 |

Table 4 Results of the moderating effect of a growing organization's life cycle (w) on the relationship between leadership styles (x) and emotional climate (y)

To summarize, 9 hypotheses were developed at the beginning of the study. Of these, 5 were confirmed, 2 were partially confirmed and 2 were not confirmed. The results of the study showed that hypotheses 1, 2, 6, 8 and 9 were supported: emotional climate was found to be significantly correlated with the lifecycle of an organization; leadership style has a significant impact on the climate of the organization; there is a positive correlation between a growing organization and a positive evaluative climate; there is a positive correlation between an ageing organization and a transactional leadership style; and there is a positive relationship between a growing organization and a transformational leadership style.

Hypotheses 5 and 7 were partially confirmed. A positive relationship was found between a liberal leadership style and a positive climate in an ageing organization but a negative relationship in a growing organization. A positive correlation was also found between a liberal leadership style and a negative climate in a growing organization. Hypotheses 3 and 4 were not supported as there was no statistically significant relationship between organizational lifecycle and leadership style, this is because organizations of different styles have been studied and their leaders do not always use the most appropriate leadership style to lead effectively across lifecycles.

## CONCLUSIONS

The results of the study show that a leadership style can have a significant impact on the emotional climate of an organization: Transformational leadership in ageing organizations improves the emotional climate, encourages employees to think creatively, unleashes their inner potential, and gives them hope; Transactional leadership in ageing organizations creates additional tension and competition at an already difficult stage, thus worsening the emotional climate even further.

A manager's liberal leadership style is not a factor in the emotional climate as the organization ages, but its use in growing organizations can worsen the emotional climate in the later stages of organizational growth, when the organization is expanding, responsibilities are increasing and the manager is not taking enough responsibility.

Meanwhile, the impact of transformational leadership on the emotional climate is independent of the lifecycle of the organization and has a positive impact on both growing and ageing organizations.

The results also show that the emotional climate can be good in an ageing organization. It is believed that employees can feel emotionally well if they are not set ambitious goals and the organization is not committed to change.

## REFERENCES

Adizes, I. K. (2015). Managing Corporate Lifecycles. Volume 2: Analyzing Organizational Behavior and Raising Healthy Organizations . Adizes Institute Publications. Kindle Edition.
Adizes, I. K. (2015). Change management. Euroimprint. Kaunas.
Bass, B. M., Avolio, B. J. (1995). Sample Items From the Multifactor Leadership Questionnaire (MLQ) Form 5X-Short. Viewed: 2022-01-01. Online access: https://www.academia.edu/30400319/Sample_Items_From_the_Multifactor_Leadership_Questionnaire_MLQ_Form_5X_Short.
Baird, L., Meshoulam, I. (1988). Managing two fits of strategic human resource management. Academy of Management Review, No. 13, pp. 116-128, Available from: 20201-06-06. Online access: http://cursos.itam.mx/sastre/lecturas/baird88.pdf
Dele, O. A., Nanle M., Abimbola S. O. (2015). Impact of Leadership Style on Organizational
Climate in the Nigerian Insurance Industry 2015; 1(3): 45-52. Viewed: 2021-06-09. Online access: http://www.aascit.org/journal/ijbim

Freeman, J., Engel, J. S. (2007) . Models of Innovation: Startups and Mature Corporations. California Review Management. No.: 50, page(s): 94-119. Viewed: 20201-06-06. Online access: https://negocios.udd.cl/files/2013/08/1.2-Models-of-Innovation-Startups-and-Mature-Companies.pdf

Fiaz M., Q., Amir I., Saqib A. (2017). Leadership Styles and Employees' Motivation: Perspective From an Emerging Economy. The Journal of Developing Areas. Viewed: 20201-06-06-0 Accessed 20201-06-0: https://muse.jhu.edu/article/662834/pdf

Greiner, L. E. (1997). Endogenous Growth Cycles - Arrow's Learning by Doing Reconsidered. Journal of Macroeconomics, Vol. 18: 587-604. Viewed: 20201-06-06. Online access: https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1741-6248.1997.00397.x

Greenwood, J. (1992). The social constitution of emotions. New Ideas in Psychology, 10, pp. 1-18. Viewed: 2021-06-07. Online access: https://www.sciencedirect.com/science/article/abs/pii/0732118X9290042X

Gregory W. Goussak, Jon K. Webber, Elliot Ser (2011) Applying the full range leadership model to managing employees in the las vegas casino-gaming industry. The Journal of Gambling Business and Economics Vol 5 No 1 pp 47-67.

Jawahar, I. M., Mclaughlin, G. L. (2001). Toward a Descriptive Stakeholder Theory: an Organizational Life Cycle Approach. Academy of Management Review VOL. 26, no. 3, pp. 397-414. Viewed: 2021-06-06. Online access: http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=e0327e36-382f-4e05-8988-c5b0dbd33ac4%40sessionmgr4007

Kelner, S. Rivers, C. & O'Connell, K. (1994). Managerial style as a behavioural predictor of organisational climate. Boston: McBer.

Lester, D. L., Parnell, J. A., Carraher, S. (2003). Organizational life cycle: a five stage empirical scale. The International Journal of Organizational Analysis, No. 11, p.339-354. Viewed: 2021-06-06. Online access: http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=bef2a25d-7624-4335-be31-061baab3761e%40sdc-v-sessmgr01&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=12015857&db=bth

Miller, D., Friesen, P. H. (1984). A longitudinal study of the corporate life cycle. Management Science, No. 30: p. 1161-1183 Accessed: 20201-06-06. Online access:. http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=bfd3da08-9ac2-4849-86fa-a816451b7a54%40pdc-v-sessmgr03

Momeni. N. (2009). The relationship between mangers' emotional intelligence and the organisational climate they create. Public Personnel Management, Volume 38, No. 2.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. Leadership Quarterly, 13(6), 705-750. Viewed: 2022-05-20. Online access: DOI: 10.1016/S1048-9843(02)00158-3.

Richard, O. C., Ford, D., Ismail, K. (2006). Exploring the performance effects of visible attribute diversity: the moderating role of span of control and organisational life cycle. The International Journal of Human Resource Management, Žiūrėta: 20201-06-06. Online access: http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=bef2a25d-7624-4335-be31-061baab3761e%40sdc-v-sessmgr01

Peña-Suárez E., Muñi J., Campillo-Álvarez Á., Fonseca-Pedrero E. and García-Cueto E. (2013). Assessing organizational climate: Psychometric properties of the CLIOR Scale, Psicothema, Vol. 25, No. 1, 137-144. Viewed: 2022-01-02. Available online: doi: 10.7334/psicothema2012.260).

Tran, V. (1998). The role of emotional climate in learning organisations. The Learning Organization, No. 5, pp. 99-103. Viewed: 20201-06-07. Online access: https://doi.org/10.1108/09696479810212060

Taguiri, R. (1968). The concept of organizational climate. In Organizational climate: explorations of a concept, R. Taguiri, G. Litwin (eds.). Cambridge, Massachusetts: Harvard University Press, p. 11–32.

Von Wobesser, L.H. (2016), Life cycle in organizations: A stationary shop case study. Journal of Bussiness Case Studies, 12, p. 35-40. Viewed: 2021-06-06. Online access: https://clutejournals.com/index.php/JBCS/article/view/9561.

Van Wugt, M(2004). "A comprehensive model of organizational leadership: the leadership action cycle" International Journal of Organizational Theory and Behavior 7(2), 173-208

Dikčius, V. (2011) The principles of questionnaire development, Vilnius University, Faculty of Economics, Department of Marketing, Vilnius 2011, p. 47.

# HOW TO SURVIVE A PANDEMIC. THE OUTLOOK OF ITALIAN RESTAURANT FIRMS.

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## ABSTRACT

The pandemic of COVID-19 has had a tremendous impact on practically every part of daily life, including the restaurant and food service industry. Changes in consumer behavior, preferences, and expenditure have also resulted from the epidemic, prompting eateries to adapt their business models and implement new food safety practices. The purpose of this study is to investigate how the pandemic has affected the business model, food security, and financial stability of restaurant owners and managers in northern Italy. The study examines the strengths and limitations of each company's restaurant operations and makes advice for how businesses may be better prepared for future disruptions using three theoretical models as comparison tools. This research seeks to discover how restaurant businesses adapted to the crisis and maintained revenue, with adjustments in business models allowing for revenue collection even while venues were closed. Customers were reassured by food safety practices, leading them to consume restaurant-prepared food even amid the health crisis (First, Brozina, 2009). However, changes in business models resulted in greater expenses, which were aided by navigating new liquidity demands with discounts offered by banking institutions and government assurances. Understanding the pandemic's influence on food safety, financial management, and general business operations is essential for restaurant survival. This study offers insights into how the pandemic has altered these components, as well as factors that can help restaurant companies plan and control actions in times of crisis. Using the three theoretical models, the study assesses the models' strengths and shortcomings and identifies links, overlaps, and complementarities.

*Keywords: Covid-19, Management, Business Model, Framework Theory, Food Safety, Restaurants, Food Delivery, Take Away.*

## INTRODUCTION

A significant impact of the COVID-19 epidemic may be seen in almost every facet of our daily existence (Harapan et al., 2020). The restaurant and food service sector are one that has been particularly heavily damaged (Gomes et al., 2022). Supply chains have been affected, customer

behavior has altered because of the epidemic, and businesses have had to adjust to new health and safety regulations (Norris et al., 2021). In this essay, we will examine the effects of the COVID-19 epidemic on the restaurant and food service sectors, as well as the implications for the sector's future.

One of the most immediate effects of the COVID-19 pandemic on the restaurant and food service industry has been the disruption of supply chains. Many countries have implemented lockdowns and travel restrictions, making it more difficult to transfer food supplies, resulting in a shortage of some ingredients. According to a report from the Food and Agricultural Organization of the United Nations, the COVID-19 pandemic has impacted food availability and cost in several countries (FAO, 2020).

The business model of a restaurant requires constant market and consumer choice adaptation as well as external market and environmental variables and new consumption patterns (Saebi et al., 2017). To ensure that customers are safe and healthy in this endeavor, food safety procedures are crucial (Aday and Aday, 2020; Barendsz, 1998). The capacity to properly manage finances and control expenditures makes financial management of restaurants another crucial component of restaurant management (Dalbor and Upneja, 2002). Due to the low product margin in this sector, even slight changes might have a big impact on profitability (Kimes et al., 1998).

The COVID-19 pandemic has had a substantial negative influence on the restaurant business, leading to a significant change in consumer spending, preferences, and behavior. To adapt to the new environment, many restaurants had to adjust their business models, which included laying off employees, lowering menu offerings, and putting in place new food safety procedures (Norris et al., 2021). The economic effects of the epidemic have also increased the importance of financial management. Restaurants have been forced to implement cost-cutting measures including renegotiating lease agreements, combining suppliers, and reducing waste.

It will be critical for restaurant owners and managers to comprehend how the pandemic would affect food safety, money management, and overall business operations. Running a successful restaurant requires managing costs, executing adequate food safety procedures, and adapting to shifting market conditions.

The same measures that other types of companies, in crisis, have had to take in order to have a significant impact on long-term survival. (Chatzoudes et al., 2022)

These factors were already significant, but the COVID-19 pandemic has further emphasized their significance and made them even more crucial for restaurant survival. It therefore turns out to be very important to understand how the pandemic has impacted these aspects, which are among the most crucial in running a restaurant.

The current article aims to investigate how the pandemic has impacted the business model, food security, and financial stability of restaurateurs. Seven restaurant companies in northern Italy were investigated, with a good heterogeneous product mix, from bistro to American-branded franchises, from micro-enterprise size with only one outlet, to medium-sized enterprise size with about ten restaurants under assets.

This article also aims to contribute some considerations from the pandemic that can be very useful for restaurant companies to plan and control the actions to be taken in cases of more or less severe crisis.

Finally, the research questions of this paper can be summarized as follows:

-          What is the changing made in the business model?

-          What actions have been taken to ensure food safety?

-          Have the actions taken allowed for continued collection of revenue and has new funding been sought?

Our study is based on three theoretical models that are commonly used as comparison tools to assess and contrast how each company's restaurant operations were impacted by its business strategy, food safety practices, and financial stability. These three models are frequently used individually but these can be used merged to identify various connections, overlaps, and complementarities between the models. By employing them incrementally, this article takes advantage of synergies that enable a thorough evaluation of strengths and weaknesses and offers suggestions for how businesses can be better prepared for future disruptions.

Using this three-framework model and analyzing the results jointly, we expect to find how restaurant companies adapted to cope with the crisis. We expect to find, from the analysis of the responses, that the change in business model allowed restaurants to maintain a share of revenue even when the halls were closed to the public, that food safety practices reassured customers, leading them to consume the food prepared by restaurants even in the full health crisis. We also think that it emerges that the change in business models led to higher costs toward the restaurant but that these, in addition to most fixed costs, may have been supported by maneuvering new demands for liquidity, given the discounts granted by banking institutions, thanks to government guarantees. We also hope that some data will emerge that we do not yet know and that may help us better understand the situation in the pandemic period.

## 2. THEORETICAL BACKGROUND

The following paper presents a theoretical background for a scientific study that explores three different models: changing in business model, financial stability, and food safety procedures. Each of these models has its unique characteristics and has been extensively studied in academic literature. The objective of this paper is to review the current state of knowledge on these three models and provide a theoretical foundation for the proposed study.

*2.1 Changing Business Model*

The process through which businesses alter their value propositions, revenue streams, and cost structures in order to respond to changes in the marketplace is referred to as modifying their business model. In recent years, this paradigm has drawn a lot of attention in the academic literature, notably in the area of strategic management.

The study by Chesbrough (2010), which developed the idea of "open business models," is one significant contribution in this field. Chesbrough suggested that for businesses to remain competitive in a market that is changing quickly, they must open up their business models by working with outside partners, sharing resources, and utilizing outside innovation.

The study of Teece (2010) is a significant addition to the literature on changing business models. Teece emphasized the value of dynamic capabilities, or a company's capacity to adjust to shifting market conditions and develop novel business models that are consistent with its long-term objectives. Firms with great dynamic capabilities, he contended, are better positioned to thrive in volatile markets. Norris (2021), who discusses how the restaurant industry modified its business models during the COVID-19 epidemic, makes an additional contribution that is tailored specifically for restaurant enterprises and the shift in their business model during times of crisis. As a final tool for outlining and visualizing a company's business strategy, Osterwalder and Pigneur (2010) created the Business strategy Canvas. Entrepreneurs and managers frequently analyze their business models using the Business Model Canvas to find opportunities for innovation and improvement.

Overall, the framework for evolving business models offers a useful lens for comprehending how businesses adjust to shifting market conditions and maintain competitiveness over time. The writings of Chesbrough, Teece, Osterwalder, and Pigneur provide significant insights into the fundamental factors that influence the development of innovative business models.

*2.2 Food Safety Procedures*

New health and safety regulations have also been implemented in the restaurant and food service sectors because of the COVID-19 epidemic. Guidelines on social distance, hygiene, and the usage of

personal protective equipment (PPE) including masks and gloves have been released by governments all around the world. Businesses now have to invest in new equipment and train staff in new procedures as a result of these rules (WHO, 2020). To ensure social distance between customers, many restaurants had to alter their layouts. As a result, fewer tables and chairs have been used, which has reduced the number of customers who can be served at one time. According to a recent investigation, "social distance measures have decreased restaurant maximum occupancy by an average of 50%, resulting in a substantial drop in revenue for many businesses." (Hayashi et al., 2020)

The food service industry is a vital component of the global economy, providing employment and sustenance to millions of people. This industry includes restaurants, cafes, food trucks, and other food-related businesses, which operate at various levels of the supply chain, from farming to processing to distribution. However, like all industries, the food service sector is vulnerable to economic fluctuations and financial instability.

Food safety procedures are critical for ensuring the safety of the food supply chain. The concept of food safety procedures has been extensively studied in academic literature, and it has gained significant attention due to the potential health risks associated with contaminated food (Barendsz, 1998). According that study, food safety procedures involve the identification, assessment, and management of food safety hazards, and becomes very important in avoiding serious, food-borne diseases such as salmonella (Tietjen and Fung, 1995).

One of the most important factors that affect food safety procedures is the level of compliance by food producers and suppliers. According to Scharff (2019), non-compliance with food safety procedures can result in significant economic and health costs. Therefore, it is important to monitor and enforce compliance with food safety procedures to ensure the safety of the food supply chain (Hobbs and Kerr, 1992).

*2.3 Financial Stability*

Financial stability is the state in which financial markets and institutions can manage and absorb risks without suffering significant disruptions to their daily operations. A sound financial system is essential for the economy's overall health because it encourages investment, economic growth, and job creation. On the other hand, financial instability (Crockett, 1996) and high uncertainty (Iannuzzi, Berardi, 2010) can cause economic downturns, credit crunches, and unemployment, all of which have detrimental effects on both businesses and people (Crockett, 1996).

Due to its reliance on consumer spending and the supply chain, the food service sector is especially susceptible to financial instability. Consumers are more likely to cut back on non-essential purchases, like eating out, when they are experiencing financial difficulty. The profitability of restaurants and

other food-related businesses can be impacted by supply chain disruptions, such as changes in the price of ingredients or transportation expenses. (Caetano et al., 2021).

Additionally sensitive to exogenous shocks like natural catastrophes, pandemics, and geopolitical crises is the food service industry. These events have the potential to disrupt the regular flow of the economy and lead to financial instability. For instance, the COVID-19 epidemic has had a substantial impact on the restaurant industry, forcing numerous restaurants to close permanently or reduce their operations (De Freitas and Stedefeldt, 2020).

Financial insecurity has a variety of effects on the food service industry. For starters, during economic downturns, customers tend to cut back on non-essential purchases such as dining out. According to the studies conducted by Blanchard, a slight increase in the unemployment rate results in a much more consistent percent drop in restaurant sales (Blanchard and Summers, 1986). Similarly, some studies discovered that during the 2008 financial crisis, non-chain restaurants in the United States witnessed a drop in sales and profitability, with those in lower-income areas suffering the most (Koh et al., 2013).

Natural catastrophes, pandemics, and geopolitical crises can all have a significant impact on the food service industry. The COVID-19 pandemic is an excellent example of how an external shock can impair industry operations. According to the National Restaurant Association (2020), the pandemic forced the closure of over 110,000 restaurants in the United States, costing over 2.5 million jobs.

The topic of cash flow and default risk is crucial in finance and banking, and it has received substantial scholarly attention. The cash flow of a corporation is described as the money that goes in and out of it, whereas the default risk is the chance of a firm being unable to repay its obligations. The relationship between cash flow and default risk is complicated since organizations with good cash flow are less likely to default, but those with insufficient cash flow are more likely to default. (Amiti and Weinstein, 2018). The size and age of a company can also impact its cash flow and default risk. Small and young companies tend to have weaker cash flow and are more likely to default compared to larger and more established companies (Aulia and Wijaya, 2020).

## 3. MATERIALS AND METHODS

As analytical tools for analyzing, we used the three theoretical models outlined above to compare and evaluate these frameworks have affected the food service industry (fig.1), using input from semi-structured interviews.
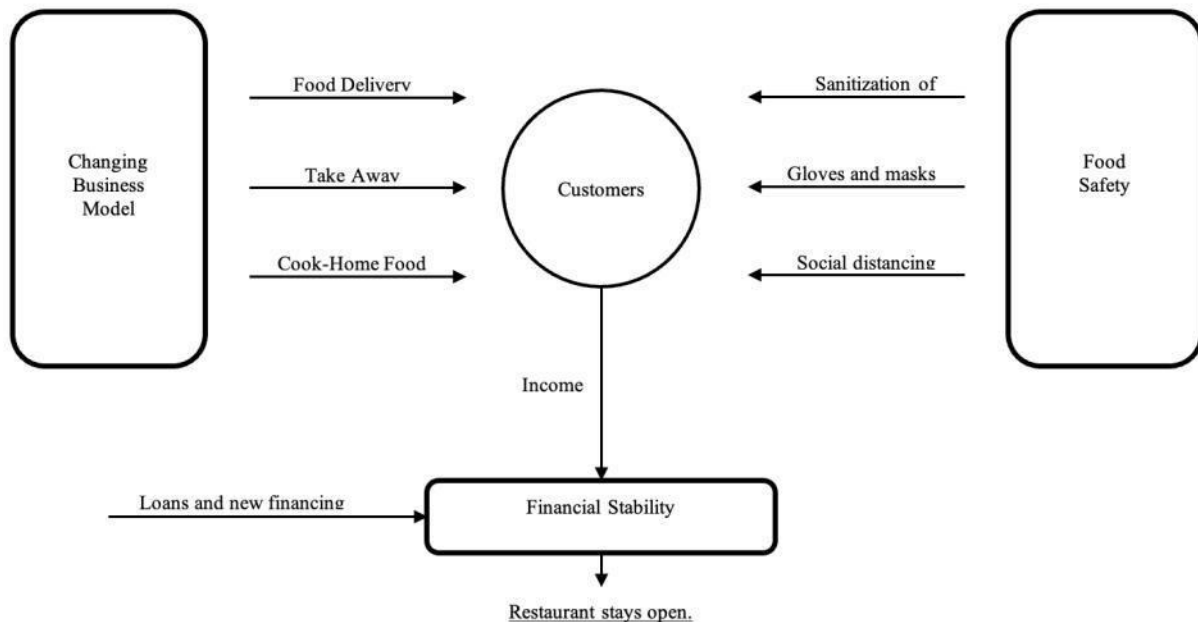
Figure 1. How the three theoretical model can impact a restaurant.

In this context, the research focuses on analyzing three key frameworks: business model, financial stability, and food security, to understand how these factors affected the survival of restaurants during the pandemic. The business model represents the structure and strategy by which an enterprise runs its business. During the pandemic, many restaurants had to rethink their business model to adapt to the new norms of social distancing and the forced closure of premises. For example, most of them decided to shift to a delivery or takeout service model, or on creating packages of meals ready for cooking at home. In this way, the business model proved to be a crucial factor in the survival of restaurants during the pandemic. Financial stability represents the company's ability to maintain a balance between income and expenses, and to meet the costs of running the business. During the pandemic, financial stability was challenged for many restaurants, particularly those that had high fixed costs, such as room rent. In addition, reduced revenues made it more difficult for businesses to meet operating costs and food safety expenses. In this sense, financial stability proved to be a key determinant of restaurant survival.

Food safety represents the degree of food safety and hygiene guaranteed by a restaurant. During the pandemic, food safety was a growing concern for consumers, who were trying to avoid any risk of contagion. Restaurants that invested in food safety measures, such as regular sanitization of surfaces, use of gloves and masks by staff, and management of social distancing within the restaurant, were able to reassure their customers and provide them with greater peace of mind.

Although the use of these measures, some of which were mandatory, was an additional cost added to the already considerable fixed costs that had to be met.

Using the above three-frame model, we expect to find what factors, resulting from the change in business model and Food safety influenced consumers so that they would continue to buy from restaurants. It is also expected that these factors would also indirectly influence the financial stability framework. Since due to the continued consumption of customers, the monetary inflow, although reduced, did not stop. Thus, enabling the restaurant to pay its costs and avoid closure or default. In addition, we expect that one of the major factors influencing financial stability is that of new credit lines acquired by the business, thanks to an emergency "temporary framework" created by the Italian state. Thanks to this enablement and facilitation, the businesses affected by the pandemic crisis, in the 2020-2022 period, could access new bank financing at a subsidized rate, as part of the guarantee supporting the financing-between 80 percent and 90 percent, depending on whether they were new applications or renegotiations of financing-was issued directly by the Italian state, thus being able to have easier access to liquidity and at a lower price, this was called "Temporary Framework". (Camera dei Deputati, 2021)

*3.1 Data Collection*

This scientific paper utilizes a semi-structured interview method to collect data from firms in the food service industry. The data collection period spans from October 2022 to March 2023. The interview followed a general interview guide that was adjusted to fit each firm and respondent role. The interview guide was structured in the same way for all respondents, and questions were open-ended and divided into four categories. The first category explored changes made in the business model, the second category examined actions taken to ensure food safety, the third category focused on revenue collection and new funding sought, and the fourth category evaluated the effectiveness of the actions taken in keeping restaurants open. For each category, the interviewers asked specific questions to delve deeper into the responses provided by the respondents. Overall, the semi-structured interview method allowed for a comprehensive and detailed exploration of the various aspects of the firms' experiences during the pandemic.

The existence of contingency plans and information regarding their scope, infection control measures, any staffing challenges or solutions, market and demand dynamics, changes in demand and the organization of Food Delivery logistics, implications for the economic situation of businesses and investment, raising new capital, the cost of financing, how cash flows were defended, implementation of new solutions, and how soon after they were implemented should be some examples of topics to be interviewed about. Also, specific instances of the pandemic that affected some businesses were

examined, and participants were invited to raise any other issues they felt were pertinent. The respondents received transcripts of the pertinent comments for fact-checking, clarification of any misconceptions, and approval. interview answers

The input from the interviews was then categorized in accordance with the three analytical models' formative components. We aimed to satisfy the requirements of objectivity, verifiability, validity, and application for qualitative data analysis with this method of analysis.

*3.2 Firms dimension and description*

To make the scientific study as heterogeneous as possible and not create bias by going to interview companies of a particular size, seven restaurant companies with different sizes of employee turnover and number of outlets were analyzed. Some of the respondents had eight outlets, restaurants under major U.S. brand names, more than two hundred employees, and a turnover of about eight million. Others, on the other hand, had a larger number of outlets, again under large American brand name and with more than three hundred employees and a turnover of more than ten million euros. Smaller companies with independent brands but well recognized in the area were also interviewed, for example, one company had two stores, fifteen employees and a turnover of about one million euros. Other companies, on the other hand, had three stores, eight employees, and a turnover of more than eight hundred thousand euros. Finally, micro-companies with only one store, about five employees, and a turnover of just under three hundred thousand euros annually were also considered. They were taken as heterogeneously as possible, to have the greatest diversity of responses, to have a joint analysis that can be as true to reality as possible.

# 4. RESULTS

The current section will report the findings for each of the companies surveyed. Following the three categories derived from the theoretical frameworks presented in the previous sections, (1) Business Model Change; (2) Food Safety; (3) Financial Stability.

*4.1 Business Model Change*

*4.1.2 Food Delivery*

The interviews with restaurants that have used Food Delivery as a sales channel revealed that the process was not as simple for all enterprises. Smaller restaurants with less structured operations found it challenging to create a production chain to sell their products via Food Delivery. In contrast, larger restaurants were able to implement this sales channel more efficiently. The reasons for this gap could be linked to larger restaurants' access to resources and infrastructure, which were better equipped to handle the logistics of meal delivery. Larger restaurants, for example, might set up a separate

manufacturing line or dedicated team for meal delivery orders, whereas smaller businesses frequently lacked the room, manpower, and finances to do so. Smaller restaurants encountered budgetary difficulties in developing a meal delivery system, in addition to operational challenges. They may lack the financial means to invest in the necessary technology or manpower to make meal delivery a realistic alternative.

Despite these obstacles, it is critical for restaurants to examine the advantages of introducing meal delivery as a sales channel. With the rise of meal delivery services, it has become increasingly necessary for restaurants to adapt to changing consumer preferences and demands. Restaurants may grow their customer base and revenue streams by implementing Food Delivery. However, before launching on this new sales channel, restaurants should carefully examine their resources and capabilities.

*4.1.2 Take Away*

The COVID-19 pandemic brought about a significant shift in the way that restaurants operate, with many establishments forced to adapt to new restrictions and regulations. One of the main challenges faced by restaurants during this period was the need to maintain social distancing measures to prevent the spread of the virus. As a result, many restaurants were forced to close their doors or limit their operations to takeout and delivery services. According to interviews with restaurant owners and managers, only those establishments who were already using takeout services prior to the pandemic were permitted to use this channel even during the restrictions. Because these restaurants had already created the infrastructure and processes required to accommodate takeout orders, they were more positioned to respond to changing conditions. Another key factor in determining a restaurant's ability to use takeout during the pandemic was its physical layout. Restaurants with a window or outlet to the outside were able to use this method more effectively, as it allowed customers to place their orders and collect their food without having to enter the restaurant itself. This helped to reduce the risk of transmission and allowed restaurants to continue operating in a safe and sustainable manner.

Also, relatively large multi-store chains found it difficult to implement takeout services during the pandemic because they couldn't do so in all their locations. Due to architectural constraints, only restaurants that were architecturally predisposed to offering takeout services could do so. As a result, some of the chain's restaurants were forced to close or limit their operations during the pandemic, while others were able to continue operating through takeout and delivery services.

*4.1.3 Cook-home Food*

The survey results on the use of a specific sales mode by restaurants were unexpected, as none of the surveyed restaurants reported using this method. This led us to believe that this sales mode was used

by a small number of restaurants, and only those with specific food preparation or delivery requirements. One possible explanation for the low adoption of this sales channel is that many restaurants were unaware of its potential benefits. Alternatively, they may have encountered operational challenges or concerns about food quality and safety that prevented them from effectively utilizing this sales mode. We believe that this sales mode was used by restaurants that had special requirements for food preparation or delivery. Restaurants that serve extremely cold or hot food that cannot be delivered already cooked, for example, may have used this sales mode to ensure that their food reaches customers in the best possible condition. This could have included using specialized packaging or delivery methods to keep the food at the proper temperature and quality.

Furthermore, restaurants that require special preparations for their food may have used this sales mode as well. Restaurants that offer custom or made-to-order dishes, as well as those that require specialized cooking equipment or techniques that cannot be replicated in a delivery setting, may have been included.

While none of the surveyed restaurants reported using this sales mode, we believe it was used by a small number of establishments with specific food preparation or delivery requirements. More research may be required to better understand the potential benefits and challenges of this restaurant sales mode.

*4.2 Food Safety*

*4.2.1 Surface Sanitation*

According to the survey, each restaurant performs sanitation procedures at least twice a day. To ensure the hygiene and safety of the food and the restaurant environment, these procedures were carried out using appropriate and effective cleaning products. When some of the restaurant staff was found to be infectious, extra precautions were taken to protect the restaurant's cleanliness and prevent the spread of the disease. The restaurant provided ozone-based steam sanitation treatment for the entire establishment. This additional sanitation process aids in the elimination of the virus and other potentially harmful microorganisms, ensuring that the restaurant remains safe and healthy for both customers and employees. Ozone is a highly effective cleaning agent because it can kill a wide range of pathogens and bacteria, making it an ideal solution for situations where sanitation is critical.

*4.2.2 Masks and Gloves*

Gloves were commonly provided in some settings, such as food preparation and handling, prior to the COVID-19 crisis to ensure food hygiene and safety. However, in response to the pandemic, additional measures were implemented to prevent the virus from spreading. To reduce the risk of transmission, every employee in the restaurants surveyed was required to wear both a mask and

gloves. This protocol was implemented throughout the restaurant, including the kitchen, dining area, and other workspaces. Not only does the use of gloves help to prevent the spread of the virus, but it also ensures the hygiene and cleanliness of the food and the restaurant environment. However, in some cases where workers had to interact with people outside the restaurant or where keeping a safe distance between workers was impossible, a transparent face shield was provided. Face shields are an effective way to protect both the wearer and those around them from respiratory droplets that may be released while speaking. Overall, these precautions have been implemented to ensure the safety and well-being of both employees and customers, as well as to help prevent the virus from spreading within the restaurant setting.

### 4.2.3 Social Distancing

The restaurant industry was heavily impacted by the various restrictions put in place to contain the virus's spread throughout the pandemic. Restaurant dining rooms were completely closed during the pandemic's most severe periods, and restaurants were only permitted to offer take-out or delivery services. This was a necessary precaution to ensure the safety of customers and employees, as well as to prevent the virus from spreading. Restaurants were gradually allowed to reopen their dining rooms as the situation improved and restrictions were lifted. However, strict rules were implemented to ensure the safety of all parties involved. According to the interviews, these rules included limiting the number of diners at a table to four or six.

Furthermore, to gain access to businesses, including restaurants, a "Green Pass" or a certificate of vaccination was required, which had to be validated by the business manager at the entrance. The government implemented this measure to help contain the spread of the virus and ensure that businesses could operate safely. The Green Pass or vaccination certificate proved that the individual had been vaccinated against COVID-19, had recovered from the virus, or had recently tested negative. This reduced the risk of the virus spreading to everyone inside the restaurant, providing additional protection for both customers and staff. Overall, the restaurant industry had to quickly adapt to new rules and regulations.

### 4.3 Financial Stability

The impact of various strategies on the cash inflows and cost structure of restaurants during the pandemic was investigated in this interview. Despite restaurants being closed to the public, the implementation or expansion of Food Delivery was found to have a minor impact on cash inflows. The Food Delivery chain, on the other hand, increased the cost of selling products, which accounted for 5-7 percent of the balance sheet. Takeaway was also discovered to have a minor impact on cash inflows while having no effect on the cost of selling products. The impact of Cook-home Food on cash

inflows and cost structure is not determined. The restaurant has applied for financing or new lines of credit and has also made use of layoffs to bring down the cost of labor. These findings suggest that while certain strategies like Food Delivery and Take Away can generate cash inflows, they also come with additional costs that need to be managed.

*4.3.1 Cash Inflow*

The impact of Food Delivery on the cash inflows of restaurants during the pandemic was explored in this interview. It was found that the implementation or increase in Food Delivery allowed for some cash inflows despite restaurants being closed to the public. However, the impact was minor. This suggests that while Food Delivery can generate some revenue for restaurants during times of closure or reduced capacity, it may not be a sustainable solution in the long term. Food Delivery costs, such as the need for specialized packaging, delivery personnel, and technology, may offset the benefits of increased cash inflows. More research is needed to investigate the long-term impact of Food Delivery on restaurant revenue and cost structure, as well as to identify strategies for mitigating costs and maximizing the benefits of Food Delivery. Overall, the findings of this interview indicate that, while Food Delivery can be a useful tool for restaurants during times of crisis, it should be approached with caution and careful consideration of its potential costs and benefits.

This interview looked at the impact of takeout and Food Delivery on restaurant cash inflows during the pandemic. The findings indicate that despite restaurants being closed to the public, both strategies allowed for some cash inflows. While Food Delivery brought in revenue for restaurants, it also added costs to the cost of selling products. Takeaway, on the other hand, did not raise the cost of selling products and generated some cash inflows. Interestingly, the interview found no evidence that cook-at-home food allowed for cash inflows because none of the participants used it. This suggests that the potential for cook-at-home food to generate revenue during times of crisis needs to be investigated further. Overall, the findings of this interview imply that takeaway and meal delivery can be effective techniques for generating money during times of limited capacity or closure, but their potential expenses must be properly handled to optimize their benefits.

In conclusion, this interview emphasizes the possibilities of takeout and Food Delivery as revenue-generating methods for restaurants during the pandemic. While both solutions were determined to be beneficial in terms of financial inflows, the expense of implementing Food Delivery was a source of worry because it outweighed some of the benefits. According to the findings of this study, while Food Delivery can be a beneficial tool for earning cash during times of crisis, it may not be sustainable in the long run. More research is required to investigate the long-term impact of meal delivery and to discover solutions to reduce the associated expenditures. Furthermore, the lack of evidence on the financial inflows generated by cook-at-home food suggests that further research into its potential as a

revenue-generating approach is required. Finally, the study's findings emphasize the importance of carefully weighing the costs and benefits of various revenue-generating tactics during times of crisis to ensure their long-term viability and effectiveness.

### 4.3.2 Costs Increase

The meal delivery industry has seen an increase in demand in recent years, particularly during the COVID-19 pandemic. As a result, meal delivery companies have been under pressure to boost their profitability. A spokesperson from a meal delivery chain recently highlighted how they increased the cost of selling their products to address this issue in a recent interview.

Several techniques were adopted by the Food Delivery chain, according to the respondents, to increase the cost of selling their items. First, they raised the shipping fees that customers were charged. This was done to compensate the increased delivery costs caused by rising gasoline prices and other logistical issues. Furthermore, the Food Delivery company added surge pricing during peak hours to motivate customers to buy at less busy periods, reducing the strain on their delivery system. The meal delivery company has increased the commission rate charged to eateries for each order placed through the site. The reps explained that this was done to ensure the profitability of their company because the commission rate had not been altered in a long time. They did admit, however, that this may have resulted in higher restaurant bills, which could have a detrimental impact on small enterprises. Overall, the Food Delivery chain's efforts to raise the cost of selling their items appear to have been successful in increasing profits. It remains to be seen, however, how these changes will affect both customers and eateries in the long run. More research is required to properly comprehend the ramifications of these techniques for the Food Delivery industry.

### 4.3.3 Financing or New Credit Lines

This interview investigated the financial tactics used by restaurants in Italy during the pandemic. Many restaurant enterprises have requested fresh funding and lines of credit because of the high discount on interest rates made possible by the Italian state's 80-90 percent state guarantees. The guarantees have helped firms reduce their financial load by making it easier for them to acquire loans and liquidity during these difficult times. Furthermore, the guarantees have helped lenders feel more secure, encouraging them to lend to enterprises that may otherwise be considered hazardous during a moment of economic uncertainty. Despite the economic constraints caused by the epidemic, the availability of finance and lines of credit has helped many restaurant enterprises to continue operating. However, it is crucial to highlight that these tactics may not be long-term sustainable, and careful financial planning will be required to secure the long-term profitability of Italian restaurant operations and also in a low-interest rate environment, specifically, businesses could profit from higher doses of leverage without changing their risk profile (Harasheh and De Vincenzo, 2023). More

research is needed to determine the usefulness of these financial solutions in assisting the recovery of the Italian restaurant industry and other small companies during the epidemic.

*4.3.4 Layoff*

This interview looked at the impact of COVID-19 on restaurant businesses and the steps they've taken to manage their finances during these trying times. One of the most important conclusions of the interview was that many restaurant businesses had to execute layoffs in order to minimize labor costs. This was a required response to the considerable decrease in sales and customers caused by COVID-19 restrictions. Businesses have been able to control their cash flow and ensure that they can continue to operate (Drissi et al., 2022), though at a reduced capacity, by undertaking layoffs. However, layoffs have had a huge impact on employees, who have either lost their employment or had their hours drastically reduced. According to the results of this interview, the COVID-19 epidemic has had a tremendous influence on the restaurant industry, and firms have had to take severe steps to survive. The long-term impact of these rules on both the sector and its employees is unknown, and more research is needed to properly comprehend the implications of these laws.

## 5. CONCLUSION

The results found, indicate that, among the restaurants surveyed, most of them made use of delivery and take-out, while none used the Cook Home Food (CHF) service. All those who opened their sales channels to these services, however, experienced an increase in their revenues, both at times when the restaurants were completely closed to the public and at times of partial contingency.

Moreover, the COVID-19 epidemic posed considerable hurdles for the restaurant business, forcing many locations to adapt to new limitations and laws. The capacity to provide takeout and delivery services was a critical aspect in deciding a restaurant's ability to remain open during this period, with only those establishments that had previously used these services before to the pandemic being able to effectively use this channel. During the pandemic, physical layout and architectural constraints played a key influence in deciding a restaurant's capacity to offer takeout services. In the food safety category, on the other hand, the results show that all surveyed restaurants resorted to health emergency containment practices through the use of specific actions to improve health safety within the business premises, such as the use of personal protective equipment, cleaning practices with more frequent sanitization (compared to the pre-pandemic period) and social distancing measures between employees-customers and between customers-customers, keeping safety measures between the eventual counter and consumers and increased table detachment at the expense of the number of available place settings. The results collected on financial stability are very interesting as it was

pointed out by all of the businesses that opened up to delivery and takeout services how on the one hand they brought in customers they otherwise would not have been able to reach by increasing turnover to a lesser extent, but on the other hand how this caused costs to rise substantially, reducing the profit margin at an already considerably difficult time. In addition, some of the restaurants interviewed were found to have requested new lines of financing with favorable terms to be able to pay their fixed and part of their variable expenses. Notably, those who used this facility were medium-sized businesses but with a relatively short history, that is, in business for a few years before the pandemic.

It is very important to note that, on the other hand, almost all the interviewees made use of the layoff fund, this in order not to have to lay off their employees but still to avoid burdening the coffers of the company, which was struggling during the period under review. During the interview, the respondents were also asked several questions, not part of the three categories used by the methodology, in which they were asked whether the actions taken were effective and whether they will bring any problems or benefits in the future. The responses to this section confirmed what was written earlier; in fact, it turned out that yes, Food Delivery has been very helpful in keeping businesses in business, but it has caused some cost issues. Furthermore, it turned out that, according to restaurateurs, food safety maneuvers have been received positively by consumers, allowing them to be able to continue to go to the restaurant and consume. More delicate situation on the financial side, as respondents were asked if they thought that the repayment of the requested funds would be economically sustainable in the near future, the answers were positive but provided that, restaurant revenues continue to grow, as is happening in this period and that serious crises such as 2020-2022 do not happen.

Finally, all respondents reported that they would not change the actions they have taken, thus confirming the goodness of these, only for those who have not introduced delivery and takeaway it was found that perhaps it would be convenient to think about a similar service.

The results that emerged from the interviews are very important, from these it can be seen that the issues encountered during the pandemic period were very severe and the actions taken by restaurateurs were very similar among all respondents. In particular, Food Delivery and takeaway were crucial to the business continuity of restaurant companies. Without the turnover due to these channels, restaurants would likely have closed for the entire pandemic period, putting all employees on layoff and having limited or no cash to be able to pay fixed expenses. In this there could have been the possibility that the restaurant would no longer have the capacity to reopen once the period was over, this due to the complete exhaustion of financial resources. Financial resources that were also greatly helped by the possibility for companies to make use of lower-cost financing specifically

implemented to cope with the pandemic. Although not all respondents made use of them, those who asked for them stated that these were crucial in overcoming the pandemic phase, as they helped considerably in paying fixed costs and even part of variable costs, when not totally covered by turnover, which was not always substantial enough due to the considerable reduction in consumption imposed by the restrictions. In addition, the results showed that among the analyzed types (1) Food Delivery (2) Take Away and (3) CHF, only the first two are used, which makes us understand that the Cook home food part is not very popular among restaurants, as it is very far from the main business. In addition to this, restaurants interested in the service and with the structured processes to be able to do Take Away and Food Delivery have not been very interested in sending semi-processed or raw products to their customers in order to preserve the final recipe, since the products they have processed are much simpler and not at very high spoilage during delivery, as those produced by restaurants that have used the CHF service may be. CHF could only be the preserve of other types of service such as grocery/ hot food or very high-end restaurants, which would have preferred to deliver their food raw or semi-processed to preserve the quality of the final dish, while also providing detailed instructions to the customer.

Regarding the questions asked about the use of "lay-offs," it emerged that whenever possible, restaurateurs avoided using this institution as much as possible, except in times of severe crisis, especially the initial one, where the restaurants' internal dining rooms were closed, and delivery was not yet used as it was during the pandemic period. It is also important to note, that unlike other industries, the restaurant industry could not use smart working, for obvious production reasons, except strictly limited to colors working in the back-office part, who, however, did not have the same work stoppage as those working in the restaurant.

We can also infer from the results obtained, that the funding requested was necessary to pay the salaries of the employees, so as not to have to resort extensively to layoffs.

This institution in fact, in Italian culture, is not well regarded and is only resorted to in times of great crisis or when the company is close to default. Thus, the elaboration of the three frameworks allowed us to understand that the synergies between the actions taken were very large, as it turned out that thanks to delivery and take-away it was possible for the companies to maintain a positive cash flow- although less so-because customers continued to consume the restaurants' products. Customers continued to buy from the surveyed restaurants because of the perceived safety of the food safety policies used. Thus, the monetary flows earned through the services mentioned above, since customers continued to consume due to perceived safety, allowed for financial stability, helped in the most situations by new financing and layoffs to keep the restaurant in business even after the pandemic period, that is, to maintain business continuity. This confirms the assumptions made in the

introduction and verifies the purpose of this article. In addition, the fourth part of questions asked to the interviewees, as a conclusion of the interviews, further confirms the hypotheses made that all restaurant owners consider themselves satisfied and would hardly change any of the actions taken to cope with the crisis.

The study can contribute to future knowledge on how changing the business model and focusing on financial stability can benefit businesses in times of crisis by following the path traced by the three models jointly, and may have practical, research, and operational implications. The results suggest how implementing delivery services in the food industry can be useful for reaching customers who cannot be reached in other ways but can be problematic if costs are not well allocated and under control. From a research perspective, this study highlights the potential benefits of combining three theoretical models rather than using them separately to study internal business issues that arise during times of crisis. This strategy has also allowed for a more thorough comparison of the businesses, allowing for the expression of reflections on more general trends and lessons that are applicable to other businesses. In this instance, the relationships between the components of the changing business model, the practices for ensuring food security, and the financial stability are demonstrated, leading to a thorough understanding of which synergies may be possible when acting on each of the three factors. Additionally, it enables businesses to have a more comprehensive and expansive view of their strengths and weaknesses, as well as a tool for both planning and monitoring, so they can identify the most important areas for improvement and know how to allocate resources effectively to achieve their goals. This paper brings up interesting points that can be the subject of future studies, for example: We know that during the pandemic the Food Delivery industry exploded, it is interesting to know how much it is still being used once the health emergency has passed, perhaps in relation to turnover and compared to the increase in conventional sales had at the end of the pandemic. Or whether the increased costs brought by Food Delivery, due to paying an outside entity for the delivery service, are economically sustainable in the long run. It would also be important to understand how much the financing obtained to cope with the crisis burdens the future budgets of the companies and how many of them are actually able to repay, in case these fail to pay back, the impact on the Italian state would be enormous, as state guarantees imposed against the financing would be required by the banks. Seeing how many are the insights for future research, it is important to note that the study just done might have limitations, given by collection sample limited to northern Italy, analysis done in a qualitative way, it would be appropriate to refine the research by going to analyze the economic data of the companies during the period in question since they might tell a slightly different version as the respondents might have had a small bias in telling their experience as

good/excellent since they have no other terms of comparison on the actions that could have been

carried out.

# REFERENCES

Amiti, M., Weinstein, D.E., 2018. How Much Do Idiosyncratic Bank Shocks Affect Investment? Evidence from Matched Bank-Firm Loan Data. journal of political economy.

Barendsz, A.W., 1998a. Food safety and total quality management. Food Control 9, 163–170. https://doi.org/10.1016/S0956-7135(97)00074-1

Beck, T., Degryse, H., De Haas, R., van Horen, N., 2018. When arm's length is too far: Relationship banking over the credit cycle. Journal of Financial Economics 127, 174–196. https://doi.org/10.1016/j.jfineco.2017.11.007

Caetano, J., Vieira, I., Caleiro, A. (Eds.), 2021. New Challenges for the Eurozone Governance: Joint Solutions for Common Threats? Springer International Publishing, Cham. https://doi.org/10.1007/978-3-030-62372-2

Chesbrough, H., 2010. Business Model Innovation: Opportunities and Barriers. Long Range Planning 43, 354–363. https://doi.org/10.1016/j.lrp.2009.07.010

Crockett, A., 1996. The theory and practice of financial stability. De Economist 144, 531–568. https://doi.org/10.1007/BF01371939

Dalbor, M.C., Upneja, A., 2002. Factors Affecting the Long-Term Debt Decision of Restaurant Firms. Journal of Hospitality & Tourism Research 26, 422–432. https://doi.org/10.1177/109634802237487

De Freitas, R.S.G., Stedefeldt, E., 2020. COVID-19 pandemic underlines the need to build resilience in commercial restaurants' food safety. Food Research International 136, 109472. https://doi.org/10.1016/j.foodres.2020.109472

del Rio-Chanona, R.M., Mealy, P., Pichler, A., Lafond, F., Farmer, J.D., 2020. Supply and demand shocks in the COVID-19 pandemic: an industry and occupation perspective. Oxford Review of Economic Policy 36, S94–S137. https://doi.org/10.1093/oxrep/graa033

Dube, K., Nhamo, G., Chikodzi, D., 2021. COVID-19 cripples global restaurant and hospitality industry. Current Issues in Tourism 24, 1487–1490. https://doi.org/10.1080/13683500.2020.1773416

FAO, 2020. COVID-19: Channels of transmission to food and agriculture. FAO. https://doi.org/10.4060/ca8430en

Gomes, C., Malheiros, C., Campos, F., Lima Santos, L., 2022. COVID-19's Impact on the Restaurant Industry. Sustainability 14, 11544. https://doi.org/10.3390/su141811544

Goolsbee, A., Syverson, C., 2021. Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020. Journal of Public Economics 193, 104311. https://doi.org/10.1016/j.jpubeco.2020.104311

Harapan, H., Itoh, N., Yufika, A., Winardi, W., Keam, S., Te, H., Megawati, D., Hayati, Z., Wagner, A.L., Mudatsir, M., 2020. Coronavirus disease 2019 (COVID-19): A literature review. Journal of Infection and Public Health 13, 667–673. https://doi.org/10.1016/j.jiph.2020.03.019

Hobbs, J.E., Kerr, W.A., 1992. Costs of monitoring food safety and vertical coordination in agribusiness: What can be learned from the British Food Safety Act 1990? Agribusiness 8, 575–584. https://doi.org/10.1002/1520-6297(199211)8:6<575::AID-AGR2720080608>3.0.CO;2-N

Hysteresis and the European Unemployment Problem, 2023.

Kamel MOULOUDJ, Ahmed Chemseddine BOUARAR, Hamid FECHIT, 2020. THE IMPACT OF COVID-19 PANDEMIC ON FOOD SECURITY. Les Cahiers du Cread 36.

Kim, J., Lee, J.C., 2020. Effects of COVID-19 on preferences for private dining facilities in restaurants. Journal of Hospitality and Tourism Management 45, 67–70. https://doi.org/10.1016/j.jhtm.2020.07.008

Kimes, S.E., Chase, R.B., Choi, S., Lee, P.Y., Ngonzi, E.N., 1998. Restaurant Revenue Management: Applying Yield Management to the Restaurant Industry. Cornell Hotel and Restaurant Administration Quarterly 39, 32–39. https://doi.org/10.1177/001088049803900308

Koh, Y., Lee, S., Choi, C., 2013. The Income Elasticity of Demand and Firm Performance of US Restaurant Companies by Restaurant Type during Recessions. Tourism Economics 19, 855–881. https://doi.org/10.5367/te.2013.0250

Lee, S., Liu, B., Jung, S., Kim, B., 2023. The effect of vaccination during the COVID-19 for the restaurant industry. International Journal of Hospitality Management 110, 103451. https://doi.org/10.1016/j.ijhm.2023.103451

Li, C.-E., Lin, Z.-H., Hsu, Y.-Y., Kuo, N.-W., 2023. Lessons from COVID-19 pandemic: Analysis of unequal access to food stores using the Gini coefficient. Cities 135, 104217. https://doi.org/10.1016/j.cities.2023.104217

Michèle, P., 2020. Food Supply Chains and COVID-19: Impacts and policy lessons.

Norris, C.L., Taylor Jr, S., Taylor, D.C., 2021. Pivot! How the restaurant industry adapted during COVID-19 restrictions. IHR 35, 132–155. https://doi.org/10.1108/IHR-09-2020-0052

World Health Organization, 2020. Coronavirus disease (COVID-19), 12 October 2020. https://apps.who.int/iris/bitstream/handle/10665/336034/nCoV-weekly-sitrep11Oct20-eng.pdf (visited 20 April 2023)

Osterwalder, A., Pigneur, Y., 2010. Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley & Sons.

Panzone, L.A., Larcom, S., She, P.-W., 2021. Estimating the impact of the first COVID-19 lockdown on UK food retailers and the restaurant sector. Global Food Security 28, 100495. https://doi.org/10.1016/j.gfs.2021.100495

Richards, T.J., Rickard, B., 2020. COVID-19 impact on fruit and vegetable markets. Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie 68, 189–194. https://doi.org/10.1111/cjag.12231

Saebi, T., Lien, L., Foss, N.J., 2017. What Drives Business Model Adaptation? The Impact of Opportunities, Threats and Strategic Orientation. Long Range Planning 50, 567–581. https://doi.org/10.1016/j.lrp.2016.06.006

Scharff, R.L., 2020. Food Attribution and Economic Cost Estimates for Meat- and Poultry-Related Illnesses. Journal of Food Protection 83, 959–967. https://doi.org/10.4315/JFP-19-548

Song, H.J., Yeon, J., Lee, S., 2021. Impact of the COVID-19 pandemic: Evidence from the U.S. restaurant industry. International Journal of Hospitality Management 92, 102702. https://doi.org/10.1016/j.ijhm.2020.102702

Teece, D.J., 2010. Business Models, Business Strategy and Innovation. Long Range Planning 43, 172–194. https://doi.org/10.1016/j.lrp.2009.07.003

Tietjen, M., Fung, D.Y.C., 1995. Salmonellae and Food Safety. Critical Reviews in Microbiology 21, 53–83. https://doi.org/10.3109/10408419509113534

Yoon, E., Jang, S., 2005. The Effect of Financial Leverage on Profitability and Risk of Restaurant Firms. The Journal of Hospitality Financial Management 13, 35–47. https://doi.org/10.1080/10913211.2005.10653798

Zabolotnyy, Wasilewski, 2019. The Concept of Financial Sustainability Measurement: A Case of Food Companies from Northern Europe. Sustainability 11, 5139. https://doi.org/10.3390/su11185139

Zeidan, R., Shapir, O.M., 2017. Cash conversion cycle and value-enhancing operations: Theory and evidence for a free lunch. Journal of Corporate Finance 45, 203–219. https://doi.org/10.1016/j.jcorpfin.2017.04.014

Zeng, Z., Chen, P.-J., Lew, A.A., 2020. From high-touch to high-tech: COVID-19 drives robotics adoption. Tourism Geographies 22, 724–734. https://doi.org/10.1080/14616688.2020.1762118

National Restaurants Association, 2020. State of the restaurant industry report. https://restaurant.org/research-and-media/media/press-releases/national-restaurant-association-releases-2020-state-of-the-restaurant-industry-report/ (visited 2 April 2023)

Camera dei Deputati, 2021. Gli aiuti di Stato nell'epidemia da COVID-19 e nell'attuale contesto di crisi energetica: il quadro europeo https://temi.camera.it/leg18/temi/flessibilit-degli-aiuti-di-stato-nell-attuale-epidemia-da-covid.html (visited 20 April 2023)

Chatzoudes, D., Chatzoglou, P. and Diamantidis, A. (2022), "Examining the impact of firm-specific and environmental-specific factors on short and long-term firm survival during an economic crisis", EuroMed Journal of Business, Vol. 17 No. 4, pp. 698-730. https://doi.org/10.1108/EMJB-02-2021-0026

First, I. and Brozina, S. (2009), "Cultural influences on motives for organic food consumption", EuroMed Journal of Business, Vol. 4 No. 2, pp. 185-199. https://doi.org/10.1108/14502190910976538

Iannuzzi, E. and Berardi, M. (2010), "Global financial crisis: causes and perspectives", EuroMed Journal of Business, Vol. 5 No. 3, pp. 279-297. https://doi.org/10.1108/14502191011080818

Drissi, H., Lamzaouek, H., Amellal, I. and Mialed, K. (2022), "Cash flow bullwhip control mechanisms in a major crisis situation: a case study from the COVID-19 crisis", EuroMed Journal of Business, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/EMJB-02-2022-0026

Harasheh, M., De Vincenzo, F., 2023. Leverage-value nexus in Italian small-medium enterprises: further evidence using dose-response function. EuroMed Journal of Business Vol. 18 No. 2, pp. 165–183. https://doi.org/10.1108/EMJB-11-2021-0166

# ETHICAL CONSUMER BEHAVIOR: A BIBLIOMETRIC REVIEW PRE-COVID19

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## ABSTRACT

Ethical values and corporate social responsibility have become two drivers of modern consumers' buying processes, driving companies to align their strategies, marketing policies, and behavior to the same values. Several articles published in the last decades in academic journals have tried to identify how and when consumers react to business ethics. This paper studies the academic literature evolution up to 2020 to understand if ethical corporate activities influence consumers' perception, if they stimulate consumer loyalty and if consumers increase their willingness to pay a premium price for these companies' products/services. Accordingly, we analyzed 349 articles published in academic journals over the last 15 years to understand their main topics and their evolution to create a baseline for the topics and approaches used in future research.

*Keywords: Ethical consumer behavior; Systematic review; Bibliometric approach; Values; Consumer; Corporate social responsibility*

## INTRODUCTION

In the last decades, companies have become actors contributing to the social community dynamics and its well-being (Carroll and Shabana, 2010; Czinkota et al., 2014). On the other side, several scholars highlighted the consumerism changes and the rising demand for ethical products and corporate environmental, social and economic behaviors, especially among young consumers (Crist et al., 2017; Salehi et al. 2018; Govind et al., 2019). In this trend, companies are increasingly looking at corporate social responsibility (CSR) as a source of competitive advantage (Holcomb et al., 2007; Pomering and Dolnicar, 2009). Furthermore, Business ethics (BE), CSR and consumer behavior (CB) have emerged as important constructs in several disciplines, such as environmental studies, marketing, organizational theory and strategy (Aguinis and Glavas, 2012) even if often these studies address only a few aspects of ethical consumption (Crane et al. 2008) or they focus on specific products, such as Fairtrade ones (Andorfer and Liebe, 2012) or organic ones (Kushvah et al. 2019;

Testa et al. 2021). On the wave of this growing scientific interest, the authors adopt a bibliometric approach (Cuccurullo et al., 2013) to factor in the growing diffusion of studies on ethical consumption and ethical consumer behavior in the last 15 years. Using this approach, we analyze the bibliographic characteristics of a corpus of documents (Cobo et al. 2011) to understand the evolution of a field and identify the relationship in a diversified field, such as the ethical consumption one (Chaudhuri et al. 2021).

We analyze the academic articles published from 2005 to 2020, collecting articles indexed in academic literature databases. Our research aim is to provide an analysis of the evolution of the themes that have united the studies on BE, CSR, and CB, trying to provide insights for future research. Hence, the objectives of this study are (a) to represent the evolution of the field concepts and themes; and (b) to provide fruitful avenues for future research.

To reach the research aims, the paper is organized as follows: we start by defining the conceptual boundaries of the review to highlight the scope of this work. Then we provide a thorough description of our systematic review methodology. In section 4, we provide a descriptive overview of the extant research, followed, in the next section, by an analysis of the main themes we have identified. In section 5, we discuss our main findings. Finally, in section 6, we discuss avenues for further research and the research limitation

## CONCEPTUAL BOUNDARIES OF THE REVIEW

Ethical consumerism deals with the preference of consumers in buying products/services, looking also at their social and environmental impacts (Carrigan et al. 2004; Harrison et al. 2005). In this review, we looked at the studies on the role of ethical and social concerns in consumer behavior. We did not consider studies on corporate strategies in ethical productions (i.e., Fridell, 2009), those focused on the ethical content of the products (i.e., Crane, 2001), and those studying how companies can get legitimacy out of their CSR activities (i.e., Vanhamme and Grobben, 2009).

## METHODOLOGY

Our research focuses on the interaction between three separate fields, so we have adopted the systematic review bibliometric approach (Paul and Criado, 2020) to develop a comprehensive overview of the leading trends in a research field (Hood and Wilson, 2001). It may also help to uncover a field's relationship with other domains and its main schools of thought (van Leeuwen 2006), highlighting the circulation of new ideas and trends. This approach focuses on trends, citations, and/or co-citations of a particular theme (Paul and Criado, 2020), it can help in defining the structure and dynamics of a particular research field (Cobo et al. 2011; Zupic and Čater, 2015). This approach

has been used widely in several business-related and consumer-related studies, such as marketing (Arnott and Wilson, 2007), or CSR studies (Li et al. 2020; Lin et al. 2020).

*Search Protocol*

A clear research question is needed to drive the research process needed to carry out a systematic review (Nguyen et al., 2018; Vrontis and Christofi, 2021) and to define the search strings (Xiao and Nicholson, 2013). We have developed our review on the interaction between consumer behavior, business ethics, and corporate social responsibility. In particular, we have defined our research questions:

- How does the research on business ethics and corporate social responsibilities interact with those on consumer behavior?
- How have these research streams' profiles changed over time?

To have a broad set of studies to analyze in our systematic review (Vrontis and Christofi, 2021) we focused on the two widely known scientific article databases (Web of Science, by Clarivariate Analytics – 171 million of records – and Scopus, by Elsevier – 78 million records), we adopted a broad set of search strings (Consumer Behavior - Consumer - Customer - Buyer; Ethics - Ethical Consumption - Consumer Ethics; Corporate Responsibility - CSR - Corporate Social Responsibility) because the extra data may be relevant, and, finally, we limited our research to articles published from 2005 to those in press at the end of 2020, as a preliminary analysis showed that, before 2005, there were just a few studies that would have been part of the sample.

We improved our analysis quality (Randhawa et al. 2016) excluding articles not published in scientific journals (conferences and book chapters); later, we focused only on studies on management, ethics, and some closely related fields such as business, communication, social psychology and sociology.

The two final samples were 681 from Web of Science and 289 from Scopus and they were merged using the dedicated function in the r-package Bibliometrix (Aria and Cuccurullo, 2017). We identified 176 duplicated results, giving us a final corpus of 794 documents.

The authors then reviewed the articles in the corpus to identify those inside the review's conceptual boundaries, deleting 17 articles as they were incomplete and 59 as they were wrongly classified in the database. After this we read the remaining articles to exclude the 369 outside the boundaries of the research getting to the final sample size was 349 works.
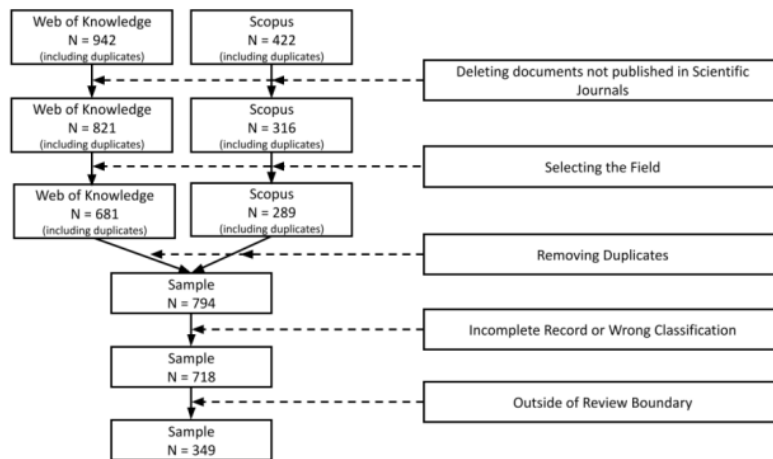
Fig. 1 – Process to define the Final Sample of Articles

*Description of the Sample*

The 349 articles in the final sample were published in 134 different journals, even if the 35.41% of them has been published in *Journal Of Business Ethics*. Over the years, the number of articles on this research topics has been rising, with about 30 articles published yearly since 2014. Looking at the more prolific authors in the sample, we find two different aspects. The "stable" authors, such as Perez and Sen, have published various articles throughout the period considered. They published respectively, six and five articles in the period of analysis. On the other hand, Schlegelmilch concentrated his five articles from 2010 to 2014, Kim published four articles between 2019 and 2020, and Brunk and Lee co-published four between 2010 and 2012. Most of these articles in the corpus that have received, over the years, more citations focused on the connections between consumer behaviors and CSR.

*Thematic Analysis of the Sample*

The relationship between the articles' keywords can be used to comprehend the research field main themes (Cobo et al. 2011) to divide them in four main categories (motor themes, basic themes, niche themes, and emerging or declining themes) according to the theme centrality – i.e., the co-occurrence of the theme-related keywords with the other keywords – and its density – i.e., a measure of the number of ties linking the various keywords in a given theme. Using this approach and limiting our analysis to the coupled keywords, we looked into the evolution of the main themes in the field, dividing the sample into three main periods (2005-2010, 2011-2015, and 2016-2020).
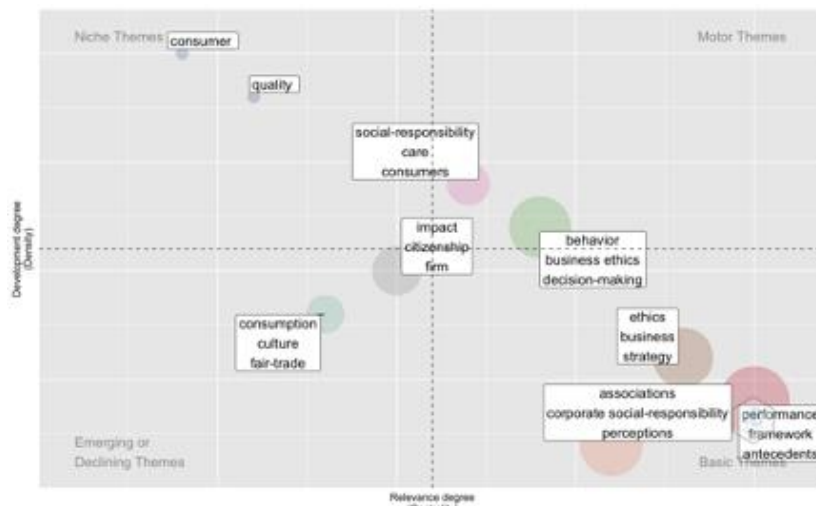
Fig. 2 – The themes of the research field in the period from 2005 to 2010 (included)

The nine clusters in the figure show that, even in its infancy, the field was deeply fragmented, we here present the Basic and the Motor trends. This time slice has three basic themes; in the lower left, there's the cluster on CSR and consumer identification (e.g., Currás-Pérez et al., 2009 or Lacey and Kennett-Hensel, 2010). Then, there is the cluster on the business case of CSR (e.g., Schuler and Cording, 2006). Last basic theme deals with the determinants of corporate associations and consumer engagement effects (e.g., Carvalho et al., 2010 or Pomering and Dolnicar, 2009). There are two motor themes; one focuses on consumer behavior in buying socially-oriented goods (e.g., Castaldo et al., 2009), while another deals with consumer expectations of CSR behavior (Podnar and Golob, 2007; Brunk, 2010).

From 2011 to 2015, we found 10 potential clusters; six of them are basic and motor themes.

Basic themes, starts from the cluster considering CSR as a driver of corporate reputation, (Matute-Vallejo et al., 2011; Romani et al., 2013), then there are those articles on CSR- or ethics-related factors that may influence consumer buying processes (Caruana, 2014; Gruber and Schlegelmilch, 2014), eventually there's the cluster on consumers' perception of CSR activities (Liu, 2013; Rodrigues and Borges, 2015).
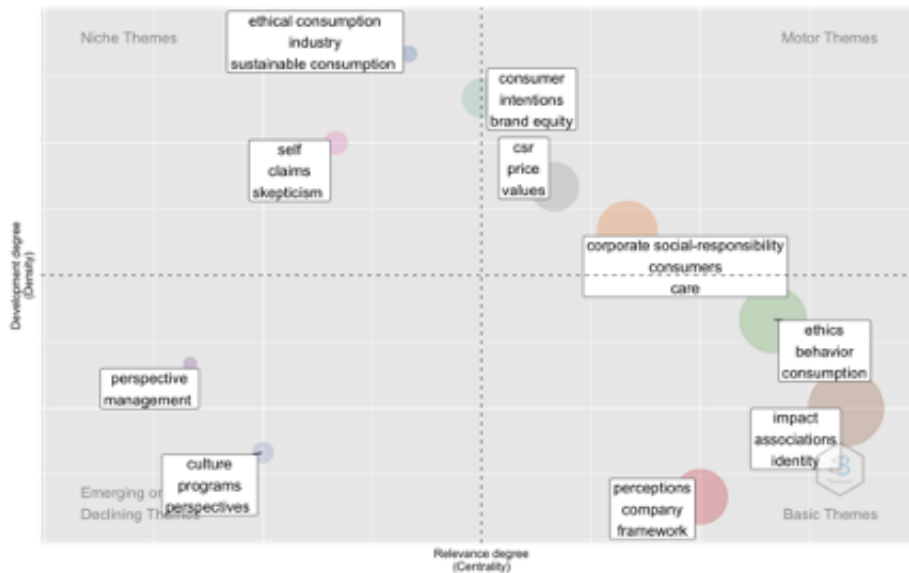
Fig. 3 – The themes of the research field in the period from 2011 to 2015 (included)

The first motor theme looks at the articles on CSR and ethical attributes as a marketing tool (Bodur et al. 2014) and on consumers' willingness to pay for ethical products (Moosmayer, 2012); the second theme deal with the effects of prices and quality on consumer decisions (Janssen et al., 2014; Neumann et al., 2014). The last theme deals with the antecedents and the consequences of consumers' attitudes toward specific issues on their decision to support CSR initiatives (Lee et al. 2015, Hammad et al. 2014).

From 2016 to 2020, we have found nine themes, as reported in Fig. 11. There is 1 cluster in the emerging or declining themes and 2 in the Niche ones.
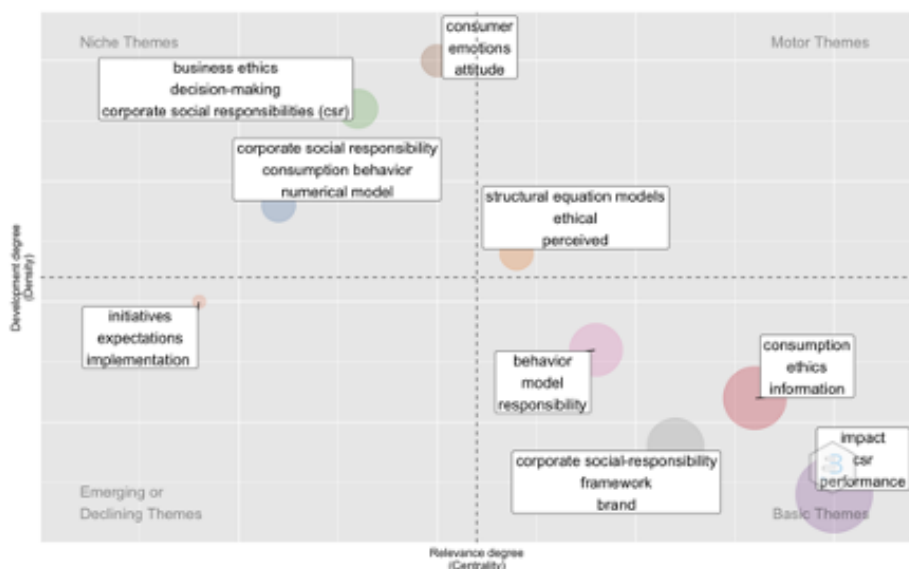


Fig. 4 – The themes of the research field in the period from 2016 to 2020 (included)

There are four basic themes. The first one deals with the effects of CSR activities on the consumers' corporate attributions (Marín et al., 2016; Aramburu and Pescador, 2019), then there is a theme dealing with consumer ethical behavior in various industries highlighting that consumers are complex with different values and attitudes (Davari et al., 2017; Bocean et al., 2018). The third basic theme deals with the motivations towards ethical consumption and their consequences (Chen and Moosmayer, 2020; Claver-Cortés et al., 2020).vThe last basic theme is made of studies linking moral values to the effectiveness of CSR-related strategies and communication (Golob et al., 2019) such as cause-related marketing initiatives (Howie et al., 2018).

There is only one motor theme on models and frameworks to understand consumers' perception of a company's CSR activities (Alvarado-Herrera et al. 2017; Brandão et al. 2018).

In our analysis, we have three niche themes. The first two ones may be considered as new approaches coming out of the previous time slice. One of the comprises studies on the consequences of corporate transgression on consumer perception (Hashimoto and Karasawa, 2018) and some on the effects of consumer attitude in buying decisions (Moraes et al. 2017), while the other look at effects of CSR and business ethics on consumers' decision-making. Some studies are on the effects deriving from the relationship in the supply chain (Schleper et al. 2017; Hoffmann et al. 2020).

## DISCUSSION

This paper has focused on the studies on business ethics and CSR that deal with consumer behavior, analyzing a sample of 349 scientific articles with bibliometric analysis. We started from an initial sample of slightly less than 800 articles published in academic journals.

This research can help scholars and practitioners to discern the "tipping point" that will ultimately result in the agents in the market developing socially responsible consumer behavior. This bibliographic analysis will contribute to the literature in the following ways. This study can also help understand the relationship between consumer behavior and company ethical and responsible behavior and how it has developed over time.

We have found clear evidence that the field of ethical consumption has been approached in several different ways, highlighting epistemological confusion. Thus, this paper's first contribution to the literature on ethical consumer behavior is related to synthesizing and structuring this research field and to providing a solid foundation for other scholars to build upon when trying to identify the right approach to use in their research in this multicoloured field.

We have tried to identified the different themes that have evolved in the BE-CSR-CB relationship since 2005. As our results highlight the dynamic nature of these concepts, it reveals the need to consider how it has evolved to help scholars, editors and practitioners discover the key points in developing

the BE-CSR-CB relationship. To study corpus evolution, we have used the matrices by Cobo et al. (2011). Some topics already well-developed in 2005, such as the studies on corporate association (Brown and Duguid, 1997), may be considered staples of the field, as they are present in the basic themes in all three periods. Other more relevant themes have become less central in the last period, for example, the studies on the business case for CSR (Carroll and Shabana, 2010) and a motor theme in the second period. In some cases, the themes have become specialized. For example, consumer perception of CSR behavior is a theme in the three periods: it emerged in the first period, became a basic theme in the second and became a motor theme in the third, where measuring consumer perceptions became more of a focus. A similar road is seen for studies on ethical and responsible labels, which have moved from an emerging theme to a basic one. Other themes have started waning, such as those on transparency in communication and disclosure or those on corporate hypocrisy, as both were motor themes in the first period, and they can only be considered niche themes in the last one. Finally, interesting evidence is the rising relevance of moral values and ethical motivations in consumption during the last period. Three of the four basic themes are linked to the ethical aspect of consumption as a driver of consumers' decision-making processes and their perceptions of CSR activities.

Moreover, even if we have decided not to include in our sample any paper published before 2005, and considering that we include Early Access papers and articles published at the end of 2020, we have found only a few references to some topics that have become relevant in the last few years, and that could have helped in considering the consumer not only as a buyer, such as those linked to co-creation and/or open innovation processes.

## CONCLUSION AND FURTHER RESEARCH

The rapid growth of studies exploring consumer behavior together with social responsibility and ethics discloses that this research field is assuming an increasingly central role in the current literature, even if several topics still have not been carefully studied.

The first topic is the link between ethical consumption, a basic trend in the last period, and sustainable development. The latter is a highly relevant topic, considering the great attention stakeholders give to Sustainable Development Goals (SDGs), underlining the need for future research and directions. Moreover, in this stream, there is a limited presence of studies leveraging the network approach to stakeholder management theory (Roloff, 2008; Sciarelli and Tani, 2013) that could be useful in understanding how consumers can shape their identity (Dacin and Brown, 2006; Currás-Pérez et al. 2008), and how this identity relates to companies and brands (Bhattacharya and Sen, 2001; Öberseder et al. 2013). A further avenue for future research lies in exploring consumer behavior in emerging

contexts, such as crowdfunding models, as these financing approaches enable "dynamics that go beyond traditional seller-buyer transactions" (Zvilichovsky et al. 2018, p. 81) that may empower customers and facilitate their engagement in co-creation processes (Troise and Tani, 2020). Firms can leverage these tools to improve their stakeholder engagement processes, incorporate their preferences into their outputs and, consequently, create a relationship with ethical and responsible consumers that drive firms to be more ethically connotated (Jones, 2018; Loureiro et al., 2020).

However, despite its novelty and innovativeness, this study has some limitations. The results represent the current picture up to the end of 2020. This boundary surely influences our analysis; this limitation can be addressed by considering trends from a general point of view. Furthermore, to achieve research aims, the authors focused only on articles published in scientific journals without considering conference papers and book chapters. And, even though the authors have tried to systematically include most quoted research papers in the bibliometric analysis, some critical research papers might have been inadvertently omitted if they had used different terms or keywords to position their paper in the academic literature.

## REFERENCES

Aguinis, H., and Glavas, A. (2012), "What we know and don't know about corporate social responsibility: A review and research agenda", Journal of management, Vol. 38, No. 4, pp. 932-968.

Alvarado-Herrera, A., Bigne, E., Aldas-Manzano, J., and Curras-Perez, R. (2017), "A scale for measuring consumer perceptions of corporate social responsibility following the sustainable development paradigm", Journal of Business Ethics, Vol. 140, No. 2, pp. 243-262.

Andorfer, V. A., & Liebe, U. (2012), "Research on fair trade consumption—A review", Journal of business ethics, Vol. 106, pp. 415-435.

Aramburu, I. A., and Pescador, I. G. (2019), "The effects of corporate social responsibility on customer loyalty: The mediating effect of reputation in cooperative banks versus commercial banks in the Basque country", Journal of Business Ethics, Vol. 154, No. 3, pp. 701-719.

Aria, M., and Cuccurullo, C. (2017), "Bibliometrix: An R-tool for comprehensive science mapping analysis", Journal of Informetrics, Vol. 11, No. 4, pp. 959-975

Arnott, D.C. and Wilson, D. (2007), "Research on trust: A bibliography and brief bibliometric analysis of the special issue submissions", European Journal of Marketing, Vol. 41, No. 9, pp. 1203-1240.

Bhattacharya, C. B., and Sen, S. (2003), "Consumer–company identification: A framework for understanding consumers' relationships with companies", Journal of Marketing, Vol. 67, No. 2, pp. 76-88.

Bocean, C. G., Sitnikov, C., and Tudor, S. (2018), "Theoretical Perspectives Concerning Modeling Consumer Behavior Influences on CSR and Marketing Roles in Shaping Consumer Perceptions", in S. O. Idowu, C. Sitnikov, D. Simion, and C. G. Bocean (eds.), Current Issues in Corporate Social Responsibility (pp. 45-62), Springer, Cham, Switzerland.

Brandão, A., Gadekar, M., and Cardoso, F. (2018), "The impact of a firm's transparent manufacturing practices on women fashion shoppers", Journal of Global Fashion Marketing, Vol. 9, No. 4, pp. 322-342.

Brunk, K. H. (2010), "Exploring origins of ethical company/brand perceptions—A consumer perspective of corporate ethics", Journal of Business Research, Vol. 63, No. 3, pp. 255-262.

Carrigan, M., Szmigin, I., and Wright, J. (2004), "Shopping for a better world? An interpretive study of the potential for ethical consumption within the older market", Journal of Consumer Marketing, Vol. 21, No. 6, pp. 401-417.

Carroll, A. B., and Shabana, K. M. (2010), "The business case for corporate social responsibility: A review of concepts, research and practice", International journal of management reviews, Vol. 12, No. 1, pp. 85-105.

Carvalho, S. W., Sen, S., de Oliveira Mota, M., and de Lima, R. C. (2010), "Consumer reactions to CSR: A Brazilian perspective", Journal of Business Ethics, Vol. 91, No. 2, pp. 291-310.

Castaldo, S., Perrini, F., Misani, N., and Tencati, A. (2009), "The missing link between corporate social responsibility and consumer trust: The case of fair trade products", Journal of Business Ethics, Vol. 84, No. 1, pp. 1-15.

Chaudhuri, R., Chavan, G., Vadalkar, S., Vrontis, D., and Pereira, V. (2021), "Two-decade bibliometric overview of publications in the Journal of Knowledge Management", Journal of Knowledge Management, Vol. 25, No. 6, pp. 1550-1574.

Chen, Y., and Moosmayer, D. C. (2020), "When guilt is not enough: Interdependent self-construal as moderator of the relationship between guilt and ethical consumption in a Confucian context", Journal of Business Ethics, Vol. 161, No. 3, pp. 551-572.

Claver-Cortés, E., Marco-Lajara, B., Úbeda-García, M., García-Lillo, F., Rienda-García, L., Zaragoza-Sáez, P. C., and Poveda-Pareja, E. (2020), "Students' perception of CSR and its influence on business performance. A multiple mediation analysis", Business Ethics: A European Review, Vol. 29, No. 4, pp. 722-736.

Cobo, M.J., López-Herrera, A.G., Herrera-Viedma, E., and Herrera, F. (2011), "An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the fuzzy sets theory field", Journal of Informetrics, Vol. 5, No. 1, pp. 146-166.

Crane, A. (2001), "Unpacking the ethical product", Journal of Business Ethics, Vol. 30, No. 4, pp. 361-373.

Crane, A., Matten, D., and Moon, J. (2008), Corporations and citizenship: Business, responsibility and society. Cambridge University Press.

Crist, E., Mora, C., and Engelman, R. (2017), "The interaction of human population, food production, and biodiversity protection", Science, Vol. 356, No. 6335, pp. 260-264.

Cuccurullo, C., Aria, M., and Sarto, F. (2013), "Twenty years of research on performance management in business and public administration domains", in S. Taneja (ed.), Academy of Management Proceedings, 14270. https://doi.org/10.5465/ambpp.2013.14270abstract.

Currás-Pérez, R., Bigné-Alcañiz, E., and Alvarado-Herrera, A. (2009), "The role of self-definitional principles in consumer identification with a socially responsible company", Journal of Business Ethics, Vol. 89, No. 4, pp. 547-564.

Czinkota, M., Kaufmann, H. R., and Basile, G. (2014), "The relationship between legitimacy, reputation, sustainability and branding for companies and their supply chains", Industrial Marketing Management, Vol. 43, No. 1, pp. 91-101.

Dacin, P. A., and Brown, T. J. (2006), "Corporate branding, identity, and customer response" Journal of the Academy of Marketing Science, Vol. 34, No. 2, pp. 95-98.

Davari, A., Iyer, P., and Strutton, D. (2017), "Investigating moral links between religiosity, altruism, and green consumption", Journal of Nonprofit and Public Sector Marketing, Vol. 29, No. 4, pp. 385-414.

Fridell, G. (2009), "The co-operative and the corporation: Competing visions of the future of fair trade", Journal of Business Ethics, Vol. 86, No. 1, pp. 81-95.

Golob, U., Podnar, K., Koklič, M. K., and Zabkar, V. (2019), "The importance of corporate social responsibility for responsible consumption: Exploring moral motivations of consumers", Corporate Social Responsibility and Environmental Management, Vol. 26, No. 2, pp. 416-423.

Govind, R., Singh, J. J., Garg, N., and D'Silva, S. (2019), "Not walking the walk: How dual attitudes influence behavioral outcomes in ethical consumption", Journal of Business Ethics, Vol. 155, No. 4, pp. 1195-1214.

Gruber, V., and Schlegelmilch, B. B. (2014), "How techniques of neutralization legitimize norm-and attitude-inconsistent consumer behavior", Journal of Business Ethics, Vol. 121, No. 1, pp. 29-45.

Hammad, H., El-Bassiouny, N., Paul, P., and Mukhopadhyay, K. (2014), "Antecedents and consequences of consumers' attitudinal dispositions toward cause-related marketing in Egypt", Journal of Islamic Marketing, Vol. 5, No. 3, pp. 414-445.

Harrison, R., Newholm, T. and Shaw, D. (eds.) (2005), The ethical consumer. Sage Publications, London, UK.

Hashimoto, T., and Karasawa, K. (2018), "Impact of consumer power on consumers' reactions to corporate transgression", PloS One, Vol. 13, No. 5, e0196819.

Hoffmann, N. C., Yin, J., and Hoffmann, S. (2020), "Chain of blame: A multi-country study of consumer reactions towards supplier hypocrisy in global supply chains", Management International Review, vol. 60, No. 2, pp. 247-286.

Holcomb, J. L., Upchurch, R. S., and Okumus, F. (2007), "Corporate social responsibility: What are top hotel companies reporting?", International Journal of Contemporary Hospitality Management, Vol. 19, No. 6, pp. 461-475.

Hood, W. W., and Wilson, C. S. (2001), "The literature of bibliometrics, scientometrics, and informetrics", Scientometrics, Vol. 52, No. 2, pp. 291-314.

Howie, K. M., Yang, L., Vitell, S. J., Bush, V., and Vorhies, D. (2018), "Consumer participation in cause-related marketing: An examination of effort demands and defensive denial", Journal of Business Ethics, Vol. 147, No. 3, pp. 679-692.

Janssen, C., Vanhamme, J., Lindgreen, A., and Lefebvre, C. (2014), "The Catch-22 of responsible luxury: Effects of luxury product characteristics on consumers' perception of fit with corporate social responsibility", Journal of Business Ethics, Vol. 119, No. 1, pp. 45-57.

Jones, P. (2018), "Contexts of co-creation: Designing with system stakeholders", in P. Jones and K. Kijima (eds.), Systemic Design (pp. 3-52), Springer, Tokyo.

Kushwah, S., Dhir, A., and Sagar, M. (2019), "Ethical consumption intentions and choice behavior towards organic food. Moderation role of buying and environmental concerns", Journal of Cleaner Production, Vol. 236, p. 117519.

Lacey, R., and Kennett-Hensel, P. A. (2010), "Longitudinal effects of corporate social responsibility on customer relationships", Journal of Business Ethics, Vol. 97, No. 4, pp. 581-597.

Lee, W. Y., Hur, Y., and Sung, M. (2015), "Happy to support: Emotion as a mediator in brand building through philanthropic corporate sponsorship", Social Behavior and Personality: An International Journal, Vol. 43, No. 6, pp. 977-991.

Li, S., Spry, L., and Woodall, T. (2020), "Corporate social responsibility and corporate reputation: A bibliometric analysis", International Journal of Industrial and Systems Engineering, Vol. 14, No. 11, pp. 1041-1045.

Lin, Y. C., Padliansyah, R., and Lin, T. C. (2020), "The relationship and development trend of corporate social responsibility (CSR) literature: Utilizing bibliographic coupling analysis and social network analysis", Management Decision, Vol. 58, No. 4, pp. 601-624.

Liu, G. (2013), "Impacts of instrumental versus relational centered logic on cause-related marketing decision making", Journal of Business Ethics, Vol. 113, No. 2, pp. 243-263.

Loureiro, S. M. C., Romero, J., and Bilro, R. G. (2020), "Stakeholder engagement in co-creation processes for innovation: a systematic literature review and case study" Journal of Business Research, Vol. 119, pp. 388-409.

Marín, L., Cuestas, P. J., and Román, S. (2016), "Determinants of consumer attributions of corporate social responsibility", Journal of Business Ethics, Vol. 138, No. 2, pp. 247-260.

Matute-Vallejo, J., Bravo, R., and Pina, J. M. (2011), "The influence of corporate social responsibility and price fairness on customer behaviour: Evidence from the financial sector", Corporate Social Responsibility and Environmental Management, Vol. 18, No. 6, pp. 317-331.

Moosmayer, D. C. (2012), "Negativity bias in consumer price response to ethical information", Business Ethics: A European Review, Vol. 21, No. 2, pp. 198-208.

Moraes, C., Carrigan, M., Bosangit, C., Ferreira, C., and McGrath, M. (2017), "Understanding ethical luxury consumption through practice theories: A study of fine jewellery purchases", Journal of Business Ethics, Vol. 145, No. 3, pp. 525-543.

Neumann, W. P., Dixon, S. M., and Nordvall, A. C. (2014), "Consumer demand as a driver of improved working conditions: the "Ergo-Brand" proposition", Ergonomics, Vol. 57, No. 8, pp. 1113-1126.

Nguyen, D.H., de Leeuw, S., and Dullaert, W.E. (2018), "Consumer behaviour and order fulfilment in online retailing: A systematic review", International Journal of Management Reviews, Vol. 20, No. 2, pp. 255-276.

Öberseder, M., Schlegelmilch, B. B., and Murphy, P. E. (2013), "CSR practices and consumer perceptions", Journal of Business Research, Vol. 66, No. 10, pp. 1839-1851.

Paul, J., and Criado, A. R. (2020), "The art of writing literature review: What do we know and what do we need to know?", International Business Review, Vol. 29, No. 4, p. 101717.

Podnar, K., and Golob, U. (2007), "CSR expectations: the focus of corporate marketing", Corporate communications: An International Journal, Vol. 12, No. 4, pp. 326-340.

Pomering, A., and Dolnicar, S. (2009), "Assessing the prerequisite of successful CSR implementation: Are consumers aware of CSR initiatives?, Journal of Business Ethics, Vol. 85, No. 2, pp. 285-301.

Randhawa, K., Wilden, R., and Hohberger, J. (2016), "A bibliometric review of open innovation: Setting a research agenda", Journal of Product Innovation Management, Vol. 33, No. 6, pp. 750-772.

Rodrigues, P., and Borges, A. P. (2015), "Corporate social responsibility and its impact in consumer decision-making", Social Responsibility Journal, Vol. 11, No. 4, pp. 690-701.

Roloff, J. (2008), "Learning from multi-stakeholder networks: Issue-focussed stakeholder management", Journal of Business Ethics, Vol. 82, No. 1, pp. 233-250.

Romani, S., Grappi, S., and Bagozzi, R. P. (2013), "Explaining consumer reactions to corporate social responsibility: The role of gratitude and altruistic values", Journal of Business Ethics, Vol. 114, No. 2, pp. 193-206.

Salehi, M., Lari DashtBayaz, M., and Khorashadizadeh, S. (2018), "Corporate social responsibility and future financial performance: Evidence from Tehran Stock Exchange", EuroMed Journal of Business, Vol. 13, No. 3, pp. 351-371.

Schleper, M. C., Blome, C., and Wuttke, D. A. (2017), "The dark side of buyer power: Supplier exploitation and the role of ethical climates", Journal of Business Ethics, Vol. 140, No. 1, pp. 97-114.

Schuler, D. A., and Cording, M. (2006), "A corporate social performance–corporate financial performance behavioral model for consumers", Academy of Management Review, Vol. 31, No. 3, pp. 540-558.

Sciarelli, M., and Tani, M. (2013), "Network approach and stakeholder management", Business Systems Review, Vol. 2, No. 2, pp. 175-190.

Testa, F., Pretner, G., Iovino, R., Bianchi, G., Tessitore, S., and Iraldo, F. (2021), "Drivers to green consumption: a systematic review", Environment, Development and Sustainability, Vol. 23, No. 4, pp. 4826-4880.

Troise, C., and Tani, M. (2020), "Exploring entrepreneurial characteristics, motivations and behaviours in equity crowdfunding: Some evidence from Italy", Management Decision, Vol. 59, No. 5, pp. 995-1024. https://doi.org/10.1108/MD-10-2019-1431.

Van Leeuwen, T. (2006), "The application of bibliometric analyses in the evaluation of social science research. Who benefits from it, and why it is still feasible", Scientometrics, Vol. 66, No. 1, pp. 133-154.

Vanhamme, J., and Grobben, B. (2009), "Too good to be true!. The effectiveness of CSR history in countering negative publicity", Journal of Business Ethics, Vol. 85, No. 2, pp. 273-283.

Vrontis, D., and Christofi, M. (2021), "RandD internationalization and innovation: A systematic review, integrative framework and future research directions", Journal of Business Research, Vol. 128, pp. 812-823.

Xiao, S. H., and Nicholson, M. (2013), "A multidisciplinary cognitive behavioural framework of impulse buying: a systematic review of the literature", International Journal of Management Reviews, Vol. 15, No. 3, pp."333-356.

Zupic, I. and Čater, T., (2015), "Bibliometric methods in management and organization", Organizational Research Methods, Vol. 18, No. 3, pp. 429-472.

Zvilichovsky, D., Danziger, S., Steinhart, Y. (2018), "Making-the-product-happen: A driver of crowdfunding participation", Journal of Interactive Marketing, Vol. 41, pp. 81-93.

# EMPLOYEE MOTIVATION AND JOB PERFORMANCE OF EMPLOYEES IN THE GREEK HOSPITALITY INDUSTRY

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## ABSTRACT

The aim of this paper was (1) to investigate the factors motivating employees in the hospitality industry in Greece, (2) to record their level of job performance and (3) to examine whether motivation is related to an increased level of job performance. For this purpose, a quantitative study was conducted on a sample of employees in the hospitality industry in Greece. The Job Performance Scale and Multidimensional Work Motivation Scale questionnaires were used for data collection. The results of the survey showed that employees in the hospitality industry in Greece show a moderate to high level of extrinsic regulation-social, extrinsic regulation-material, introjected regulation, identified regulation and intrinsic motivation. In addition, the results of the study showed a moderate to high level of task, adaptive and contextual in performance. Finally, the study confirmed that employee motivation leads to increased levels of task, adaptive and contextual performance.

*Keywords: Employee motivation, Job performance, Hospitality, Extrinsic motivation, Intrinsic motivation, Task performance, Adaptive performance, Contextual performance.*

## INTRODUCTION

The competitiveness of an organization is linked directly to the knowledge, skills and abilities of its employees. Employees are the main resources that help organisations perform better than competitors and differentiate from competitors by adding value to products and services. In this context, maximizing employee performance directly affects the performance of the organisation (Chien et al., 2020). In the hospitality industry, increased global competition and sophisticated customers require organisations to invest on hiring and maintaining a high-performing workforce in order to be able to deliver high-quality services to customers (Sharma, 2019).

Motivated employees have been found to be more efficient in their work, therefore, motivation can have a positive impact on job performance and consequently on the performance of an organisation (Grant, 2008; Georgellis, Iossa & Tabvuma, 2011). Motivation refers to the factors that inspire or encourage people to behave in a selected manner (Ann & Blum, 2020). It refers to the inherent and exogenous elements that influence an individual to act in certain ways or to take certain actions (Du Plessis, Douangphichit & Dodd, 2015). In the hospitality industry, employee motivation is an important factor for the success of an organisation, due to the nature of the hospitality service. Employees in the hospitality sector do not just offer customers tangible products, but more importantly they offer intangible services which can significantly impact the satisfaction of the customer and consequently the success of the organisation (Teng & Barrows, 2009; Puntra, Cho & Liu, 2015). However, it may be difficult to motivate employees in the hospitality industry, as the industry often offers low wages, poor employment conditions, and relies heavily on a temporarily employed workforce (Lee & Chen, 2013; Sharma, 2019).

Despite several research efforts to study the link between employee motivation and job performance, little empirical evidence can be found in the literature, especially studies looking at the Greek hospitality sector. The aim of this paper is (1) to investigate the motivational dimensions impacting the motivation of employees in the Greek hospitality industry, (2) to evaluate their job performance and (3) to examine whether motivation is related to an increased level of job performance. In addition, this paper aims to examine whether the level of motivation and the level of job performance differ significantly with respect to the demographic characteristics of employees. To do that, we conduct a quantitative study among Greek employees, using a survey questionnaire based on the Multidimensional Work Motivation Scale (Gagne et al., 2014) and on the Job Performance Scale (Pradhan and Jena, 2017). We find that both extrinsic as well as intrinsic factors result in moderate to high levels of motivation among Greek employees in the hospitality sector. In addition, the results of the study show a moderate to high level of task, adaptive and contextual in performance among Greek employees in the hospitality sector.

## LITERATURE REVIEW

Individually and collectively, employees contribute to the achievement of the goals of the organisation and employees are for many organisations the resource that gives them a competitive advantage over other organisations (Boon, den Hartog & Lepak, 2019; Agarwal, 2021). The big challenge for organizations is to find the most suitable employees from a group of potential candidates, to proceed with their training in the procedures and operation of the organization and to maintain them with the

aim of the highest possible result (Hecklau et al., 2016). Employees have been recognized as a key competence for organisations and as a major source of competitive advantage (Kimiti & Kilika, 2018).

*Employee Motivation*

Motivation comprises the psychological forces that generate human behaviour and that cause humans to act in certain or other ways (Kruglanski & Higgins (2017). According to Brooks (2018, p.98) "motivation comprises an individual's effort and persistence and the direction of that effort. In simple terms, motivation is the will to perform". Employee motivation is a condition which influences the behaviour of employees toward the work environment (Ma'ruf, Hadari & Amalia, 2019). Motivated individuals are usually more accomplished at work, they are more enthusiastic about their work, and more willing to accept responsibility and organisational change. On the contrary, individuals who are not motivated will be less engaged in their work and less cooperative, they will be consistently challenged in completing their work, they will find it difficult to meet deadlines and they will resist change (Brooks, 2018, p. 98). From Maslow's hierarchy of needs (Taormina & Gao, 2016), to Herzberg's two-factor theory (Lundberg, Gudmundson & Andersson, 2009), to expectancy theory (Steel & Koning, 2006), to temporal motivation theory (Steel & Koning, 2006), to goal achievement theory (Locke & Latham, 2004), to self-determination theory (Gagne, et al, 2014), theories of motivation are trying to identify and explain the factors that motivate people as well as the processes through which people are motivated and through which certain behaviours emerge (or not).

Self-determination theory considers three types of motivation that can make individuals behave the way they do, namely amotivation, intrinsic motivation and extrinsic motivation. Amotivation refers to no motivation toward adopting a certain behaviour, while intrinsic motivation refers to engaging in a certain behaviour for its own sake (for the joy, pleasure or interest of adopting a certain behaviour) and extrinsic motivation refers to engaging in a certain behaviour because of external factors and for the sake of the enjoying the benefits (e.g. rewards, position, recognition, etc.) or avoiding the costs (e.g. penalties, punishments, criticism, etc.) of not engaging in this behaviour (Gagne, et al., 2014). Extrinsic motivation can take various forms, which impact the extent to which an individual will be motivated by these external factors to engage in certain behaviours. According to Gagne et al. (2014, p. 179), the subcategories of extrinsic motivation are: external regulation ("doing an activity to obtain rewards or avoid punishments administered by others"), introjected regulation ("regulation of behaviour out of internally pressuring forces, such sa ego-involvement, shame and guilt") and identified regulation ("doing an activity because on identified with its value or meaning and accepts it as one's own").

*Job Performance*

Job performance refers to the actions involved in or the process of performing a task or function assigned to the individual, which is measured and compensated for (Janssen & Van Yperen, 2004; Khoreva & Wechtler, 2018). According to Viswesvaran & Ones (2000, p. 216) "job performance refers to scalable actions, behavior and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals". The concept is associated with how well one performs the work assigned to them and the results obtained in relation to the effort put on completing the work (Pradhan & Jena, 2017).

Employee performance is a multidimensional concept relating to aspects of the job itself, the employee, and the environment. Various studies have examined the types of behavioural engagement that shape employee performance, concluding that employee performance comprises of two main behavioural dimensions: one that is are related to doing one's job according to an employee's role and job description and a second dimension relating to discretionary or voluntary work behaviour (Prarhan & Jena, 2017; Borman & Motowidlo, 1993; Atatsi & Stoffers, 2019). Borman & Motowidlo (1993) describe employee performance as the outcome of combining two dimensions, namely, task performance and contextual performance. The authors describe task performance as employee behavioural engagement that is task related and which relates to the tasks and responsibilities assigned to an employee, and contextual performance as all other helping and productive behaviours which support doing one's job, such as cooperating with others, putting extra effort, volunteering to complete tasks outside of one's job description, supporting organisational goals, etc. (Viswesvaran & Ones).

Prahdan & Jena (2017) extend Borman & Motowidlo's (1993) model and develop a three-dimensional scale of behavioural engagement which make up employee performance, adding adaptive performance to task and contextual performance. . According to the authors, adaptive performance captures behaviours which relate to one's ability to adapt to the environment and situation and to develop attitudes which support job completion. The discretionary or voluntary behavioural engagement of the employee has been described as Organisational Citizenship Behaviour (OCB) comprising employee behaviour that supports the social and psychological structure of the organisation (Smith, Organ & Near, 1983; Williams and Anderson, 1991; Atatsi & Stoffers, 2019).

*Linking Employee Motivation with Job Performance*

An individual's job performance depends on the person's knowledge, skills and ability to perform well in completing the assigned job (Turner, 2017; Viswesvaran & Ones, 2000) and on those factors that determine an employee's willingness to perform (Pranita, 2017; Jayaweera, 2015) or in other words, their motivation to perform (Viswesvaran & Ones, 2000). It will not be sufficient for employees

to have the ability to complete a task or function in order to perform well, but they also need to have a positive attitude and be willing to apply their skills and ability to the task or function and produce a positive outcome (Huang & Xie, 2017). Both intrinsic and extrinsic motivational factors have been found to have a positive impact on job performance with research suggesting that motivated employees will apply more effort to their work and demonstrate higher levels of performance (Ma'rfu, Hadari & Amalia, 2019; Shahzadi, et al., 2014; Grant, 2008; Georgellis, Iossa & Tabvuma, 2011).

## METHODOLOGY

Quantitative primary data was collected for this study, using a self-administered questionnaire sent to participants via email. Quantitative data was selected as appropriate for this research considering the aim of the research to investigate the levels of employee motivation and job performance, the relationships/perceptions between the independent (demographic characteristics) and dependent variables (employee motivation and job performance) and the correlation between employee motivation and job performance (Saunders, Lewis & Thornhill, 2019). Quantitative research is objective, the methods used are rigorously defined and highly structured and data is highly standardised (Saunders, Lewis & Thornhill, 2019). Questionnaires have several advantages, as they allow for the collection of a large amount of data in a short period of time, and they require limited resources and expenses. Also, they generate standardised and quantifiable data which is recorded in a systematic way and allows for comparisons. In addition, questionnaires are anonymous, and they are convenient means of obtaining information on behaviours that cannot be observed (Bryman & Bell, 2011; Saunders, Lewis & Thornhill, 2019).

The questionnaire was developed in three parts with the first part capturing participants' demographic profile (gender, age group, educational level, marital status, and work history). The second part of the questionnaire was based on the Job Performance Scale developed by Pradhan and Jena (2017) and it captured task performance (questions 1-6), adaptive performance (questions 7-12) and contextual performance (questions 13-19). For this part of the questionnaire a 7-point Likert scale was used with responses ranging from 1=Strongly disagree to 7=Strongly agree. The third part of the questionnaire was based on the Multidimensional Work Motivation Scale developed by Gagne et al. (2014) and captured employee motivation factors - "amotivation" (questions 1-3), "extrinsic regulation-social" factors (questions 4-6), "extrinsic regulation-material" factors (questions 7-9), "introjected regulation" factors (questions 10-13), "identified regulation" factors (questions 14-16) and "intrinsic motivation" factors (questions 17-19). A 7-point Likert scale was used with responses ranging from 1=Not at all to 7=Completely.

The target population of this study was the total number of employees of hotels in the Greek territory. The participants for the study were selected with the use of convenience sampling. In non-probabilistic sampling, such as convenience sampling, techniques are used in which samples are selected in a manner other than that indicated by probability theory. Participants in convenience sampling are selected because they are easily available to the researchers. Convenience sampling is widely used, especially for research involving online participation, but it may be subject to bias, as the participants are not selected on the basis of some objective technique or predetermined criteria (Saunders, Lewis & Thornhill, 2019). For this research, the questionnaires were distributed via email to 117 employees of hotels in the Greek territory, during the period of the May - June 2022.

SPSS v. 25.0 was used to process the data. Initially, the responses collected through the questionnaires were recorded and coded accordingly. Then, Cronbach's alpha was used to test for reliability of the individual scales. Descriptive statistics were used to present the responses. In addition, an analysis testing the normality of the variables was performed based on the Kolmogorov-Smirnov test. The t-test was used for cases where the independent variable in the comparison of the means of the dependent variables included two levels (e.g. gender), while for the cases where the independent variable in the comparison of the means of the dependent variables includes more than two levels (e.g. age), one-way ANOVA and post hoc Tukey's analysis of univariate variance was used. Also, Pearson correlation and regression analysis were used in order to investigate the relationship between job performance and motivation dimensions. The level of statistical significance established in all cases is $\alpha$= 0.05 (5%).

## RESULTS

*Sample Demographics*

Table 1 outlines the demographic profile of the study participants. Of the 117 employees in the hotel industry who participated in the survey, 51.3% (n=60) were male and 48.7% (n=57) were female. Analysis of the participants' age showed that 23.9% (n=28) were up to 25 years, 22.2% (n=26) were between 26 to 35 years, 17.1% (n=20) were between 36 to 45 years, 14.5% (n=17) were between 46 to 55 years and 22.2% (n=26) were 56 years old and higher. The majority of the participants (37.6% (n=44)) were university graduates, followed by 31.6% (n=37) of the sample whose education was up to secondary school, while 30.7% (n=36) of the participants had a postgraduate or doctoral degree. In addition, the results show that 44.4% (n=52) of the participants were single/ unmarried and 41.9% (n=49) were married. Finally, 29.1% (n=34) of the sample had less than 10 years of work experience,

45.3% (n=53) had between 11 to 20 years of work experience and 25.6% (n=30) had more than 21 years of work experience.

| Sample Demographics | | | n | % |
|---|---|---|---|---|
| Gender | Male | | 60 | 51.3 |
| | Female | | 57 | 48.7 |
| Age | Up to 25 years | | 28 | 23.9 |
| | 26-35 | | 26 | 22.2 |
| | 36-45 | | 20 | 17.1 |
| | 46-55 | | 17 | 14.5 |
| | 56 and above | | 26 | 22.2 |
| Education | Up to secondary | | 37 | 31.6 |
| | Bachelor degree | | 44 | 37.6 |
| | Master degree | | 30 | 25.6 |
| | PhD | | 6 | 5.1 |
| Marital status | Single/Unmarried | | 52 | 44.4 |
| | Married | | 49 | 41.9 |
| | Divorced | | 16 | 13.7 |
| Work experience | Up to 10 years | | 34 | 21.9 |
| | 11-20 years | | 53 | 45.3 |
| | 20 years and above | | 30 | 26.5 |

Table 1. Sample Demographics

*Reliability Analysis*

Tables 2 and 3 show the results of the analysis on the reliability of the Job Performance Scale and Multidimensional Work Motivation Scale respectively, using Cronbach's $\alpha$ reliability coefficient for each individual dimension of the scale. The analysis recorded a high level of reliability in all dimensions of both scales, as a Cronbach's $\alpha$ reliability coefficient higher than 0.9 was recorded in all cases.

| Job Performance Scale - Reliability Analysis | | |
|---|---|---|
| Dimensions | Items | Cronbach's $\alpha$ |
| Task Performance | 6 | 0.958 |
| Adaptive Performance | 6 | 0.951 |
| Contextual Performance | 7 | 0.955 |

Table 2. Reliability analysis for the Job Performance Scale

| Multidimensional Work Motivation Scale - Reliability Analysis | | |
|---|---|---|
| Dimensions | Items | Cronbach's $\alpha$ |
| Amotivation | 3 | 0.968 |
| Extrinsic Regulation - Social | 3 | 0.947 |
| Extrinsic Regulation - Material | 3 | 0.950 |
| Introjected Regulation | 4 | 0.954 |
| Identified Regulation | 3 | 0.941 |
| Intrinsic Motivation | 3 | 0.942 |

Table 3. Example of a table caption (Use AR Table Caption)

*Results - Employee Motivation*

Below we present the results of the descriptive analysis on the motivation of employees in the hotel industry in Greece. The table shows that the study participants demonstrated a moderate level of "Amotivation" (lack of motivation (M=3.6, SD=2.0). In addition, "Extrinsic regulation-social" factors result in moderate to high levels of motivation among the study participants (M=3.9, SD=1.8); "Extrinsic regulation-material" factors result in moderate to high levels of motivation among the study participants (M=4.0, SD=1.8); "Introjected regulation" factors result in moderate to high levels of motivation among the study participants (M=4.0, SD=1.8); "Identified regulation" results in moderate to high levels of motivation among the study participants (M=3.9, SD=1.8); and finally "Intrinsic motivation" factors result in moderate to high levels of motivation among the study participants (M=4.0, SD=1.8)

| Multidimensional Work Motivation Scale - Descriptive statistics | | |
|---|---|---|
|  | M | SD |
| "Amotivation" | 3.6 | 2.0 |
| "Extrinsic regulation - social" | 3.9 | 1.8 |
| "Extrinsic regulation - material" | 4.0 | 1.8 |
| "Introjected regulation" | 4.0 | 1.8 |
| "Identified regulation" | 3.9 | 1.8 |
| "Intrinsic regulation" | 3.9 | 1.8 |

Table 4. Descriptive statistics for the Multidimensional Work Motivation Scale

The Kolmogorov-Smirnov test for all dimensions of this scale indicates that all the dimensions follow a normal distribution ("Amotivation": p=0.231); "Extrinsic regulation-social": p=0.119; "Extrinsic regulation-material": p=0.313; "Introjected regulation": p=0.298; "Identified regulation": p=0.188; "Intrinsic motivation": p=0.202).

Finally, Table 5 presents the results on the correlation between the Multidimensional Work Motivation Scale dimensions.

| Multidimensional Work Motivation Scale - Correlations | | | | | | |
|---|---|---|---|---|---|---|
| | "Amotivation" | "Extrinsic regulation - social" | "Extrinsic regulation - material" | "Introjected regulation" | "Identified regulation" | "Intrinsic regulation" |
| "Amotivation" | 1.000 | -.878** | -.886** | -.911** | -.906** | -.899** |
| "Extrinsic regulation - social" | | 1.000 | .881** | .882** | .888** | .893** |
| "Extrinsic regulation - material" | | | 1.000 | .866** | .890** | .864** |
| "Introjected regulation" | | | | 1.000 | .889** | .892** |
| "Identified regulation" | | | | | 1.000 | .894** |
| "Intrinsic regulation" | | | | | | 1.000 |

Table 5. Correlation between Multidimensional Work Motivation Scale dimensions

*Work Motivation and Employee Demographics*

We used T-test for gender and ANOVA for all other demographic variables to investigate whether the motivation of employees in the hotel industry differs significantly with their demographic characteristics. We found that, employee motivation did not differ significantly with participants' gender (p>0.05 in all comparisons); it did not differ significantly with participants' age (p>0.05 in all comparisons); it did not differ significantly with participants' educational level (p>0.05 in all comparisons); it not differ significantly with participants' marital status (p>0.05 in all comparisons); and it did not differ significantly with participants' work experience (p>0.05 in all comparisons).

*Results - Job Performance*

Below we present the results of the descriptive analysis on the job performance of employees in the hotel industry in Greece. The table shows that the study participants demonstrated a moderate to high level of task performance (M=3.6, SD=1.0); a moderate to high level of adaptive performance (M=3.6, SD=0.9); and a moderate to high level of contextual performance (M=3.6, SD=0.9).

| Job Performance Scale - Descriptive statistics | | |
|---|---|---|
| "Task Performance" | 3.6 | 1.0 |
| "Adaptive Performance" | 3.6 | 0.9 |
| "Contextual Performance" | 3.6 | 0.9 |

Table 6. Descriptive statistics for the Multidimensional Work Motivation Scale

The Kolmogorov- Smirnov tests for all dimensions of the scale indicate that they follow a normal distribution ('Task performance": p=0.119; "Adaptive Performance": p=0.207; "Contextual Performance": p=0.345).

Finally, Table 7 presents the results on the correlation between the Job Performance Scale dimensions.

| Job Performance Scale - Correlations | | | |
|---|---|---|---|
| | "Task Performance" | "Adaptive Performance" | "Contextual Performance" |
| "Task Performance" | 1.000 | .885** | .878** |
| "Adaptive Performance" | | 1.000 | .870** |
| "Contextual Performance" | | | 1.000 |

Table 7. Descriptive statistics for the Multidimensional Work Motivation Scale

*Job Performance and Employee Demographics*

We used T-test for gender and ANOVA for all other demographic variables to investigate whether job performance of employees in the hotel industry differs significantly with their demographic characteristics. We found that employee job performance among participants did not differ significantly across genders ($p>0.05$ in all comparisons); it did not differ significantly across age groups ($p>0.05$ in all comparisons); it did not differ significantly across educational levels ($p>0.05$ in all comparisons); it did not differ significantly across marital statuses ($p>0.05$ in all comparisons); and it did not differ significantly across work experience groups ($p>0.05$ in all comparisons).

*Employee Motivation Impact of Job Performance*

Below we present the results on the correlation between employee motivation and job performance.

| Multidimensional Work Motivation Scale and Job Performance Scale - Correlations | | | |
|---|---|---|---|
| | "Task Performance" | "Adaptive Performance" | "Contextual Performance" |
| "Amotivation" | -.710** | -.749** | -.742** |
| "Extrinsic regulation - social" | .697** | .739** | .731** |
| "Extrinsic regulation - material" | .715** | .717** | .723** |
| "Introjected regulation" | .728** | .763** | .753** |
| "Identified regulation" | .737** | .740** | .741** |
| "Intrinsic regulation" | .714** | .752** | .757** |

Table 8. Correlation between the Job Performance Scale dimensions and the Multidimensional Work Motivation

*Scale dimensions*

Table 9 presents the results of the multiple linear regression using the Work Motivation Scale dimensions as predictors and Task Performance as outcome. The analysis showed that the motivation dimensions explained 68% of the variance of task performance ($F_{(6, 110)}=38.913$, $p<0.01$, $R^2=0.680$). Of the dimensions of motivation, lack of motivation ("Amotivation") has a significant effect on "Task performance". The results show that an increase in lack of motivation is associated with a decrease in the level of task performance (b=-0.498, t=-5.879, $p<0.01$).

| Multidimensional Work Motivation Scale and "Task Performance" | | | | | |
|---|---|---|---|---|---|
| | Unstandardized Coefficients | | Standardized Coefficients | t | p |
| | B | Std. Error | Beta | | |
| (Constant) | 5.900 | .678 | | 8.707 | .000 |
| "Amotivation" | -.498 | .085 | -1.040 | -5.879 | .000 |
| "Extrinsic regulation - social" | -.043 | .110 | -.082 | -.387 | .699 |
| "Extrinsic regulation - material" | -.047 | .097 | -.089 | -.486 | .628 |
| "Introjected regulation" | -.058 | .124 | -.110 | -.469 | .640 |
| "Identified regulation" | .073 | .120 | .140 | .613 | .541 |
| "Intrinsic regulation" | -.053 | .106 | -.099 | -.499 | .619 |
| $F_{(6, 110)}=38.913$, $p<0.01$, $R^2=0.680$ | | | | | |

Table 9. Regression analysis using the Multidimensional Work Motivation Scale as predictor and the "Task

*Performance" as outcome*

Table 10 presents the results of the multiple linear regression using the Work Motivation Scale dimensions as predictors and Adaptive Performance as outcome. The analysis showed that the motivation dimensions explained 72% of the variance of adaptive performance ($F_{(6, 110)}=47.174$, $p<0.01$, $R^2=0.720$). Of the dimensions of motivation, lack of motivation ("Amotivation") has a significant effect on "Adaptive performance". The results show that an increase in lack of motivation is associated with a decrease in the level of adaptive performance (b=-0.506, t=-6.902, p<0.01).

| Multidimensional Work Motivation Scale and "Adaptive Performance" | | | | | |
|---|---|---|---|---|---|
| | Unstandardized Coefficients | | Standardized Coefficients | t | p |
| | B | Std. Error | Beta | | |
| (Constant) | 6.105 | .586 | | 10.423 | .000 |
| "Amotivation" | -.506 | .073 | -1.142 | -6.902 | .000 |
| "Extrinsic regulation - social" | .036 | .095 | .076 | .382 | .703 |
| "Extrinsic regulation - material" | -.077 | .084 | -.159 | -.921 | .359 |
| "Introjected regulation" | -.107 | .108 | -.218 | -.998 | .320 |
| "Identified regulation" | -.022 | .104 | -.045 | -.212 | .832 |
| "Intrinsic regulation" | .012 | .092 | .025 | .136 | .892 |
| $F_{(6, 110)}=38.913$, $p<0.01$, $R^2=0.680$ | | | | | |

*Table 10. Regression analysis using the Multidimensional Work Motivation Scale as predictor and the*

*"Adaptive Performance" as outcome*

Finally, Table 11 presents the results of the multiple linear regression using the Work Motivation Scale dimensions as predictors and Contextual Performance as outcome. The analysis showed that the motivation dimensions explained 72.6% of the variance of contextual performance ($F_{(6, 110)}=48.554$, $p<0.01$, $R^2=0.720$). Of the dimensions of motivation, lack of motivation ("Amotivation") has a significant effect on "Contextual performance". The results show that an increase in lack of motivation is associated with a decrease in the level of contextual performance ($b=-0.494$, $t=-6.415$, $p<0.01$).

| Multidimensional Work Motivation Scale and "Contextual Performance" | | | | | |
|---|---|---|---|---|---|
| | Unstandardized Coefficients | | Standardized Coefficients | t | p |
| | B | Std. Error | Beta | | |
| (Constant) | 5.828 | .615 | | 9.473 | .000 |
| "Amotivation" | -.494 | .077 | -1.050 | -6.415 | .000 |
| "Extrinsic regulation - social" | .055 | .100 | .107 | .545 | .587 |
| "Extrinsic regulation - material" | -.087 | .088 | -.169 | -.990 | .324 |
| "Introjected regulation" | -.042 | .113 | -.081 | -.374 | .709 |
| "Identified regulation" | -.057 | .109 | -.110 | -.521 | .603 |
| "Intrinsic regulation" | .019 | .096 | .036 | .199 | .843 |
| F(6, 110)=48.554, p<0.01, R2=0.726 | | | | | |

Table 11. *Regression analysis using the Multidimensional Work Motivation Scale as predictor and the "Contextual Performance" as outcome*

## CONCLUSIONS

The hospitality industry is a highly competitive industry. At the same time, it is quite distinct in nature compared to other industries, offering a more pesonalised service to its customers, whose satisfaction heavily relies on their interaction with the employees of a hospitality organisation. In an industry where it is difficult to keep employees motivated, it is important to understand the factors that motivate employees and the link between motivation and job performance. This study offers empirical evidence on the motivational dimensions that motivate employees in the Greek hospitality sector, their job performance and on the impact of work motivation on job performance.

We find that extrinsic regulation-social factors (relating to the acceptance of others and their respect), extrinsic regulation-material factors (relating to material rewards such as salary and sense of security), introjected regulation factors (relating to self-affirmation of one's abilities and feeling proud), identified regulation factors (resulting from considering the work as important) and intrinsic motivation factors (resulting from consider the work fun and exciting) result in moderate to high levels of motivation. These results confirm findings of related research on respect and acceptance of others (Ann & Blum, 2020; Grobelna & Marciszewska, 2016), material rewards such as salary and

sense of security (Agarwal, 2021; Huang et al., 2020; Putra et al, 2016), self-affirmation (Ann & Blum, 2020; Lundberg, Gudmundson & Andersoon, 2009), how important they consider their job (Chien et al., 2020; Du Plessis, Douangphichit & Dodd, 2015; Wu, Wang & Ling, 2021) and how fun and exciting they find their job (Ann & Blum, 2020; Hecklau et al., 2016; Otoo & Mishra, 2018) are important motivators in the hotel industry.

Also, the results of the research show a moderate to high level of task, adaptive and contextual in performance. These results confirm findings of related studies in the literature that generally employees in the hotel industry demonstrate moderate to high levels of job performance (Huang & Xie , 2017, Pawirosumarto, Sarjana & Gunawan, 2017; Ranga & Kamboj, 2018; Sledge, Miles & Coppage, 2008). We do not find significant differences in the motivational factors or job performance across demographic characteristics. Although there are earlier studies which have found differences across demographic characteristics (Xiong & King, 2015; Jayaweera, 2015; Kurniawan & Heryanto, 2019, Ann & Blum, 2020; Chien et al., 2020, Du Plessis, Douangphichit & Dodd, 2015; Jayaweera, 2015; Kurniawan & Heryanto, 2019, Pawirosumarto, Sarjana & Gunawan, 2017) we believe that these are due to the context of the studies and the scales used for measurement of work motivation and job performance. Finally, the results of the research confirm that the motivation of employees leads to increased levels of task, adaptive and contextual performance, in line with earlier findings (Grobelna & Marciszewska, 2016; Hee, Kamaludin & Ping, 2016; Kurniawan & Heryanto, 2019).

In conclusion, the present research provides empirical evidence on the dimensions that motivate employees as well as on job performance of employees in the hospitality industry in Greece. In addition, the study essentially confirms the relationship between work motivation and job performance, showing a positive impact of motivation on job performance. Our study shows that on a practical level, it is very important for hospitality organisations to focus on motivating employees and creating strong incentives to perform their assigned tasks and functions well. Despite its contribution, this study also has some limitations. The relatively sample size and the selection of participants with the use of convenience sampling limit the generalisability of the results. In addition, this study focused solely on the impact of motivation on job performance and did not account for other factors impacting performance, such as staff training, organizational culture and leadership. A more representative sample and a broader consideration of factors impacting employee performance would add to the generalisability of the results.

## REFERENCES

Ann, S., and Blum, S.C. (2020), "Motivating senior employees in the hospitality industry", International Journal of Contemporary Hospitality Management, Vol. 32 No. 1, pp.324–346.

Agarwal, P. (2021), "Shattered but smiling: Human resource management and the wellbeing of hotel employees during COVID-19", International Journal of Hospitality Management, Vol. 93, 102765.

Atatsi, E.A., Stoffers, J. and Kil, A. (2019), "Factors affecting employee performance: A systematic review", Journal of Advances in Management Research, Vol. 16 No. 3, pp. 329-351.

Boon, C., den Hartog, D.N., and Lepak, D.P. (2019), "A Systematic Review of Human Resource Management Systems and Their Measurement", Journal of Management, Vol. 45 No. 6, pp. 2498–2537

Borman, W.C. and Motowidlo, S.J. (1993), "Expanding the Criterion Domain to Include Elements of Contextual Performance", in Schmitt, N. and Borman, W.C., (Ed)., Personnel Selection in Organizations, Jossey-Bass, San Francisco, 71- 98.

Brooks, I. (2018) Organisational Behaviour. Individuals, groups and organisations, 5th Ed., Pearson, Harlow.

Bryman, A., and Bell, E. (2011), Business research methods. Business Research Methods, 3rd Ed., Oxford University Press, NY.

Chien, G. C. L., Mao, I., Nergui, E., and Chang, W. (2020), "The effect of work motivation on employee performance: Empirical evidence from 4-star hotels in Mongolia", Journal of Human Resources in Hospitality & Tourism, Vol. 19 No.4, pp. 473–495.

Du Plessis, A., Douangphichit, N., and Dodd, P. (2015), "HRM in Relation To Employee Motivation and Job Performance in the Hospitality Industry", Journal of International Business Research and Marketing, Vol. 1 No. 4, pp. 12–21.

Gagné, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., van den Broeck, A., Aspeli, A.K., Bellerose, J., Benabou, C., Chemolli, E., Güntert, S.T., Halvari, H., Indiyastuti, D.L., Johnson, P. A., Molstad, M.H., Naudin, M., Ndao, A., Olafsen, A.H., Roussel, P., Wang, Z., and Westbye, C. (2014), "The Multidimensional Work Motivation Scale: Validation evidence in seven languages and nine countries", European Journal of Work and Organizational Psychology, Vol. 24 No. 2, pp. 178–196.

Georgellis, Y., Iossa, E. and Tabvuma, V. (2011), "Crowding out intrinsic motivation in the public sector", Journal of Public Administration Research and Theory: J-PART, Vol. 21 No. 3, pp. 473-493.

Grant, A.M. (2008), "Does intrinsic motivation fuel the prosocial fire? Motivational synergy in predicting persistence, performance, and productivity", Journal of Applied Psychology, Vol. 93 No. 1, pp. 48-58.

Grobelna, A., and Marciszewska, B. (2016), "Work motivation of tourism and hospitality students: implications for human resource management", in Proceedings of the 8th European conference on intellectual capital in Ca' Foscary University of Venice Italy 2016, Academic Conferences and Publishing International, Reading, pp. 95-103.

Hecklau, F., Galeitzke, M., Flachs, S., and Kohl, H. (2016), "Holistic Approach for Human Resource Management in Industry 4.0", Procedia CIRP, Vol. 54, pp. 1–6.

Hee, O.C., Kamaludin, N.H., & Ping, L.L. (2016), "Motivation and Job performance among nurses in the health tourism hospital in Malaysia", International Review of Management and Marketing, Vol. 6 No. 4, pp. 668-672.

Huang, Q., and Xie, C. (2017), "The effect of interaction between hotel employees and customers on employees' work efficiency and customer satisfaction", Tourism Tribune, Vol. 32 No. 4, pp. 66-77.

Huang, S.S., Yu, Z., Shao, Y., Yu, M., and Li, Z. (2020), "Relative effects of human capital, social capital and psychological capital on hotel employees' job performance", International Journal of Contemporary Hospitality Management, Vol. 33 No. 2, pp. 490–512.

Janssen, O. and Van Yperen, N.W. (2004), "Employees' goal orientations, the quality of leader-member exchange, and the outcome of job performance and job satisfaction", The Academy of Management Journal, Vol. 47 No. 3, pp. 368-384.

Jayaweera, T. (2015), "Impact of Work Environmental Factors on Job Performance, Mediating Role of Work Motivation: A Study of Hotel Sector in England", International Journal of Business and Management, Vol.10 No. 3, pp.271-278.

Khoreva, V. and Wachtler, H. (2018), "HR practices and employee performance: the mediating role of well-being", Employee Relations, Vol. 40 No. 2, pp. 227-243.

Kimiti, P.G. and Kilika, J.M. (2018), "Organizational Resources, Industry Velocity, Attention Focus and Firm's Performance: A Review of Literature", International Journal of Business and Management, Vol. 13 No. 5, p. 185.

Kruglanski, A.W. and Higgins, E.T. (2017), "Introduction to motivation science special issue", Motivation Science, Vol. 3 No. 3, pp. 175-178.

Kurniawan, H., and Heryanto, H. (2019), "Effect of Work Discipline and Work Environment on Employee Performance with Work Motivation as an Intervening Variable in Department of Tourism, Youth and Sport of Padang District", Archives of Business Research, Vol. 7 No. 7, pp. 88-101.

Lee, C.C. and Chen, C.J. (2013), "The Relationship between Employee Commitment and Job Attitude and Its Effect on Service Quality in the Tourism Industry", American Journal of Industrial and Business Management, Vol. 3 No. 2, pp. 196–208.

Locke, E.A. and Latham, G.P. (2004), "What should we do about motivation theory? Six recommendations for the twenty-first century", Academic of Management Review, Vol. 29 No. 3, pp. 388-403.

Lundberg, C., Gudmundson, A., and Andersson, T.D. (2009), "Herzberg's Two-Factor Theory of work motivation tested empirically on seasonal workers in hospitality and tourism", Tourism management, Vol. 30 No. 6, 890-899.

Ma'ruf, F., Hadari, I.R. and Amalia, D. (2019), "Employee motivation and performance models", International Review of Management and Marketing, Vol. 9 No. 6, pp. 80-86.

Otoo, F.N.K. and Mishra, M. (2018), "Influence of human resource development (HRD) practices on hotel industry's performance", European Journal of Training and Development, Vol. 42 No. 7/8, pp. 435–454.

Pawirosumarto, S., Sarjana, P.K., and Gunawan, R. (2017), "The effect of work environment, leadership style, and organizational culture towards job satisfaction and its implication towards employee performance in Parador Hotels and Resorts, Indonesia", International Journal of Law and Management, Vol. 59 No. 6, pp. 1337–1358.

Pradhan, K.R. and Jena, L.K. (2017), "Employee performance at workplace: Conceptual model and empirical validation", Business Perspectives and Research, Vol 5 No. 1, pp. 1-17.

Putra, E. D., Cho, S., and Liu, J. (2016), "Extrinsic and intrinsic motivation on work engagement in the hospitality industry: Test of motivation crowding theory", Tourism and Hospitality Research, Vol. 17 No. 2, pp. 228–241.

Ranga, A., and Kamboj, R. (2018), "A study on the Relationship Between Employee Satisfaction and Employees' Performance", TRJ Tourism Research Journal, Vol. 2 No. 2, pp. 94- 104.

Saunders, M.N.K. Lewis, P. and Thornhill, A. (2019), Research methods for business students, 8th Ed., Pearson, Harlow.

Shahzadi, I., Javed, A., Shahzad Pirzada, S., Nasreen, S. and Khanam, F. (2014), "Impact of employee motivation on employee performance", European Journal of Business and Management, Vol. 6 No. 23, pp. 159-166.

Sharma, B. (2019), "Review of human resource practices in hospitality and tourism", Journal of Hospitality, Vol. 1 No. 1, pp. 15-30.

Sledge, S., Miles, A.K., and Coppage, S. (2008), "What role does culture play? A look at motivation and job satisfaction among hotel workers in Brazil", The International Journal of Human Resource Management, Vol. 19 No. 9, pp. 1667–1682.

Smith, C.A., Organ, D.W., & Near, J.P. (1983), "Organizational citizenship behavior: Its nature and antecedents", Journal of Applied Psychology, Vol. 68 No. 4, pp. 653–663.

Steel, P. and Konig, C.T. (2006), "Integrating theories of motivation", The Academic of Management Review, Vol. 31 No. 4, pp. 889-913.

Taormina, R.J. and Gao, J.H. (2013), "Maslow and the Motivation Hierarchy: Measuring Satisfaction of the Needs", The American Journal of Psychology, Vol. 126 No. 2, pp. 155–177.

Teng, C.C. and Barrows, C.W. (2009), "Service orientation: antecedents, outcomes, and implications for hospitality research and practice", The Service Industries Journal, Vol. 29 No. 10, pp. 1413-1435.

Turner, A. (2017), "How does intrinsic and extrinsic motivation drive performance culture in organizations?", Cogent Education, Vol. 4 No. 1, 1337543.

Viswesvaran, C., and Ones, D.S. (2000), "Perspectives on Models of Job Performance", International Journal of Selection and Assessment, Vol. 8 No. 4, pp. 216–226.

Williams, L.J. and Anderson, S.E. (1991), "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors", Journal of management, Vol. 17 No. 3, pp. 601-617.

Wu, X., Wang, J., and Ling, Q. (2021), "Managing internal service quality in hotels: Determinants and implications", Tourism Management, Vol. 86, 104329.

Xiong, L., and King, C. (2015), "Motivational drivers that fuel employees to champion the hospitality brand", International Journal of Hospitality Management, Vol. 44, pp. 58–69.

# DRIVERS AND IMPACTS OF POKÉMON GO'S CONTINUANCE INTENTION: AN EXTENDED EXPECTATION-CONFIRMATION MODEL

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## ABSTRACT

The purpose of this work is to adapt the Expectation Confirmation Theory (ECT)/ Expectation Confirmation Model (ECM) and the Theory of Consumption Value (TCV) to explore antecedents and consequences of Pokémon Go gamers' continuance intention. A total of 259 players in Thailand completed an online questionnaire. A Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) approaches were employed to test a measurement model and a structural model. The results confirmed that the ECT/ ECM and the TCV were efficient to explain players' continuance intention. Findings guide not only game marketers but also game providers and game developers in improving the game design and game marketing strategies.

*Keywords: Pokémon Go, mobile location-based games, augmented reality, expectation-confirmation model, theory of consumption values*

## INTRODUCTION

Augmented Reality (AR) is a technology combining the physical world and virtual objects (Ghazali et al., 2019b, Rauschnabel et al., 2017, Harborth and Pape, 2017). It has the potential to become the next big computing platform (Rauschnabel et al., 2017). Pokémon Go (PG) is one of ARGs and also a Location-Based Game (LBG), which is the most downloaded game app, the best mobile/ handheld game, and the best family game in 2016 (Ghazali et al., 2019b, Hsiao et al., 2019, Harborth and Pape, 2017, Hamari et al., 2019, Liu et al., 2018). The interest of AR mobile games, after the first step towards AR of Pokémon Go, leads to the release of other mobile location-based AR games (Ghazali et al., 2019b, Harborth and Pape, 2017). However, even the most popular AR game such as Pokémon Go faces the difficulty in retaining users' interest and its success momentum, emphasizing the need to continually improve the game by the game provider (Hsiao et al., 2019, Ghazali et al., 2019b).

The Theory of Consumption Values (TCV) or Consumption Value Theory (CVT) is a well-known framework to understand the behaviour of hedonic technologies' users (Kaur et al., 2018). Only a study of Hsiao et al. (2019) explore the impacts of perceived values on in-app purchase intention for Pokémon Go. Mobile game research has largely focused on the pre-adoption phase rather than the post-adoption

phase (Merikivi et al., 2017). Another theory widely used in the field of consumer behavior is the Expectation-Confirmation Theory (ECT), which is generally applied to interpret consumers' post-purchase behavior. The ECT theory is later modified to be the Expectation-Confirmation Model (ECM), which incorporates the post-acceptance factors such as perceived usefulness (Hsu and Lin, 2019).

In terms of AR, only a few research has been done on users' acceptance of AR technology or AR applications, particularly in AR gaming applications (Ghazali et al., 2019b, Harborth and Pape, 2017, Jung et al., 2015). What factors contributing to game players' intention and retention to the game is a crucial question for both academicians and practitioners, but less is known about the experiences that gamers receive from their consumption (Rezaei and Ghodsi, 2014). Coursaris et al. (2016) and Rezaei and Ghodsi (2014) emphasize that the design and implementation of the game feature to trigger or satisfy gamers' motivation and to retain them have been far less investigated.

To bridge these gaps, the objectives of this research are: (1) to enhance the understanding of drivers retaining players' interests and increasing the success momentum of Pokémon Go in Thailand, (2) to expand the consumer research in mobile location-based AR game marketing using TCV and ECT/ECM, (3) to apply multidimensional constructs to represent perceived value (functional value, emotional value, and conditional value) and loyalty (continuance intention and intention to recommend) in the research framework, and (4) to explore the antecedents e.g. game features and consequences of game satisfaction, both positive and negative ones.

## HYPOTHESIS DEVELOPMENT

*Expectation confirmation theory and expectation confirmation model*

The Expectation-Confirmation Theory (ECT) is a theory extensively used in the marketing domain to explain consumers'satisfaction and their post-purchase behaviour. The theory, modified as Expectation-Confirmation Model (ECM) by integrating the ECT with the Technology Acceptance Model (TAM) (Oghuma et al., 2016, Huang et al., 2019).

*Expectation: game features.*

Game features were believed to influence players' behavioural intentions (Ghazali et al., 2019b, Ghazali et al., 2019a). Game features should be continuously improved (Hsiao et al., 2019). Expectation according to the ECT in this study was represented by expected game features, to expand the understanding of expectations in the location-based AR games. Online games' design features could lead to users' addiction. The design of online social games significantly related to players' level of satisfaction and game continuance intention (Zhu et al., 2014). Game design increased players' perceived enjoyment, which was a significant driver of continuance intention of playing mobile games (Merikivi et al., 2017). Achievement, challenge, and social interaction significantly affected continuance

intention to play PG (Ghazali et al., 2019b, Ghazali et al., 2019a). Game enjoyment significantly led to game addiction (Chuang et al., 2012). Game users' challenge, attack, entertainment, and fellowship motives directly or indirectly extended gamers' intention to continue playing (Lee, 2015). Based on previous reports, the following hypothesis and sub-hypothesis are formulated.

*H1a: Expected game features are positively associated with players' confirmation.*

*H1b: Expected game features are positively associated with players' satisfaction.*

*H1c: Expected game features are positively associated with players' game addiction.*

*Confirmation.*

Confirmation was proposed to have positive influences on perceived usefulness and satisfaction of smartphone games (Wang et al., 2017). It positively significantly affected the perceived usefulness and satisfaction in gamification application services (Huang et al., 2019). Expectation confirmation positively impacted the perceived advantage, aesthetic experience, and perceived enjoyment of AR (Chung et al., 2018). Thus, the following hypothesis and sub-hypothesis are offered.

*H2a: A game player's expectation confirmation is positively associated with his or her satisfaction.*

*H2b: A game player's expectation confirmation is positively associated with perceived functional value.*

*H2c: A game player's expectation confirmation is positively associated with perceived emotional value.*

*H2d: A game player's expectation confirmation is positively associated with perceived conditional value.*

*Satisfaction.*

Players tended to deeply involved in the game and invest more time in the game if they were satisfied with the game (Hsiao et al., 2019). Satisfaction had positive impacts on the continued use of smartphone games (Wang et al., 2017), in-app purchase intention of mobile location-based AR games for both paying and non-paying groups (Hsiao et al., 2019), players' continuance intention of online social games (Zhu et al., 2014), continuance intention of SNS games (Chuang et al., 2012). It also one of the most influential factors for mobile services' loyalty (Jung et al., 2015). AR satisfaction also had a significant and positive impact on the intention to recommend AR applications (Jung et al., 2015). Accordingly, the following hypothesis and sub-hypothesis are proposed.

*H6a: A game player's satisfaction is positively associated with his or her addiction to the game.*

*H6b: A game player's satisfaction is positively associated with continuance intention.*

*H6c: A game player's satisfaction is positively associated with intention to recommend the game to others.*

*H6d: A game player's satisfaction is positively associated with intention to use other LBSs.*

*Theory of consumption values*

In this study, post-acceptance factors of the ECM were represented using perceived value. Perceived value e.g. emotional value indirectly affected loyalty through satisfaction (Spink et al., 2011). Specifying values in the consumers' minds were critical for the understanding of consumer behaviour. Five values

included functional value, emotional value, social value, conditional value, and epistemic value (Klézl et al., 2018, Yoo, 2015, Kaur et al., 2018, Luo and Lee, 2018, Deng et al., 2010). To decrease the complexity of the research framework, this study focused on two most-adopted values in past studies: functional value and emotional value and added one more value (conditional value) that was suitable for the mobile location-based AR game context.

*Functional value.*

The functional value was the perceived utility gained from an alternative's capacity regarding functional, utilitarian, or physical performance (Yang and Lin, 2017, Kaur et al., 2018, Zhu et al., 2010). Functional value positively associated with the perceived value of an innovation service (Zhu et al., 2010). Character competency and price utility as functional values significantly increased players' intention to buy virtual goods in online games (Ho and Wu, 2012). Functional value was similar to the perceived usefulness of TAM or usability (Zhu et al., 2010). The more usefulness of gamification apps perceived by users, the more satisfied they were (Huang et al., 2019). Based on the preceding discussion, following hypothesis and sub-hypothesis are offered.

*H3a: A game player's perceived functional value is positively associated with his or her satisfaction.*

*H3b: A game player's perceived functional value is positively associated with continuance intention to play Pokémon Go.*

*Emotional value.*

The emotional value was the perceived utility derived from an alternative's capacity to urge feelings or affective states (Yang and Lin, 2017, Luo and Lee, 2018, Kaur et al., 2018, Rezaei and Ghodsi, 2014). In terms of hedonic products, emotional involvement was required in the consumption process of hedonic products (Yoo, 2015). In terms of Pokémon Go, hedonic motivation positively affected behavioral intention (Harborth and Pape, 2017). Perceived hedonic benefits positively influenced both users' continuance intention and satisfaction (Hsu and Lin, 2019). The emotional dimension of perceived value positively related to a user's intention to download mobile games (Spink et al., 2011). Emotional value also referred to the gamers' feeling of game enjoyment. The perceived emotional value of game items significantly increased users' purchase intention (Yoo, 2015). A user's perceived emotional value from buying decorative goods in the virtual world positively influenced his/ her intention to purchase (Shang et al., 2010). Therefore, the following hypothesis/ sub-hypothesis are offered.

*H4a: A game player's perceived emotional value is positively associated with his or her satisfaction.*

*H4b: A game player's perceived emotional value is positively associated with continuance intention to play Pokémon Go.*

*Conditional value.*

The conditional value was the perceived utility received from an alternative as the result of the specific situation/ circumstances facing the choice maker (Yang and Lin, 2017, Kaur et al., 2018, Hwang and Lee, 2013). People played a game to have fun while waiting for an appointment, to relieve the boredom, or to consume their spare time (Hwang and Lee, 2013). Conditional value influenced the overall value, which was a significant driver of behavioral intention to use LBSs (Zhang and Mao, 2013). Based on the preceding arguments, the following hypothesis and sub-hypothesis are given.

*H5a: A game player's perceived conditional value is positively associated with his or her satisfaction.*

*H5b: A game player's perceived conditional value is positively associated with continuance intention to play Pokémon Go.*

*Intention to continue playing the game*

Internet game addiction was influenced by players' internal motivation (Seok et al., 2018). Online gaming as a leisure-time activity could significantly lead to game addiction. Excessive use of the Internet or video game developed an addiction (Toker and Baturay, 2016). A game's success depended on gamers who continued playing (Ghazali et al., 2019a). Post-adoption usage determined the success of game providers (Ghazali et al., 2019b). Positive experience increased gamers' loyalty to the game (Yoo, 2015). Literature research regarding MMORPGs and Massively Multiplayer Online Game (MMOG) measured loyalty intention using repurchase intention and WOM (Rezaei and Ghodsi, 2014, Luo and Lee, 2018). Based on this assertion, the following hypothesis and sub-hypothesis are developed.

*H7: A game player's continuance intention is positively associated with his or her addiction to the game.*

*H7: A game player's continuance intention is positively associated with intention to recommend the game to others.*

## RESEARCH DESIGN AND METHODS

*Sample and data collection*

A non-probability quota sampling method was applied to collect the data from both studying-aged players and working-aged players, to be more representative of individual populations. Participants in this study were Pokémon Go players in Thailand. After filtering duplicates, 259 valid questionnaires remained, consisting of surveys from 134 full-time students and 125 full-time employees.

*Instrument development*

The survey questionnaire consisted of a section describing the target samples and the definitions of LBSs and the description of Pokémon Go, questions for consumption values, questions for ECT/ ECM, questions for user's demographic information, and questions for expected game features and game

addiction. The scale items were adapted from relevant literature (Wang et al., 2013, Chong, 2013, Oghuma et al., 2016, Huang and Liao, 2015, Turel et al., 2010, Hsu et al., 2015, Pihlström, 2008, Hull et al., 2013, Olsson et al., 2013, Ho et al., 2015, Jung et al., 2015, Kang and Johnson, 2015, Yun et al., 2013, Sun et al., 2015, van Rooij et al., 2012, Kim et al., 2008). Each item was evaluated using a five-point Likert scale. The items were translated from English to Thai and slightly modified to suit the Pokémon Go context.

## RESULTS

*Descriptive statistics*

| Demographic Characteristics | Demographic Characteristics | All Participants N (%) |
|---|---|---|
| Gender | Male | 144 (55.6%) |
| | Female | 115 (44.4%) |
| Average Age | | 25 |
| Education (Studying/ Received) | Lower than Bachelor Degree | 26 (10.0%) |
| | Bachelor's Degree | 184 (71.0%) |
| | Master's Degree | 46 (17.8%) |
| | Doctoral Degree | 3 (1.2%) |
| Avg. Pokémong Go Game Level | | 18 |
| Avg. Amount of Playing Pokémon Go (hours/ day) | | 3 |
| Avg. Amount of Playing Pokémon Go (days/ week) | | 5 |
| Other Game Types Playing | Action/ Adventure/ Arcade | 179 (69.1%) |
| | Board/ Card/ Casino | 49 (18.9%) |
| | Educational | 35 (13.5%) |
| | Music | 65 (25.1%) |
| | Sports/ Racing | 68 (26.3%) |
| | Role Playing/ Simulation/ Strategy | 107 (41.3%) |
| | Trivia/ Word/ Puzzle | 57 (22.0%) |

Table 1. *Sample demographics.*

*Measurement model assessment*

| | Mean (SD) | AVE | CR | Cronbach's alpha |
|---|---|---|---|---|
| GAME_FEA | 3.30 (1.00) | 0.615 | 0.864 | 0.860 |
| CONFIRM | 3.46 (0.96) | 0.813 | 0.896 | 0.886 |
| SATIS | 3.84 (0.94) | 0.828 | 0.906 | 0.906 |
| FUNC | 3.19 (0.95) | 0.654 | 0.791 | 0.784 |

| | Mean (SD) | AVE | CR | Cronbach's alpha |
|---|---|---|---|---|
| EMO | 3.95 (0.95) | 0.858 | 0.923 | 0.924 |
| COND | 3.13 (1.18) | 0.802 | 0.890 | 0.884 |
| GAME_ADD | 2.23 (1.07) | 0.668 | 0.800 | 0.792 |
| CON_INT_PLAY | 3.50 (1.18) | 0.925 | 0.961 | 0.961 |
| INT_REC | 3.50 (1.05) | 0.780 | 0.876 | 0.876 |
| INT_LBS | 3.33 (1.08) | 0.917 | 0.957 | 0.955 |

Note: Game Features (GAME_FEA), Confirmation (CONFIRM), Satisfaction (SATIS), Functional Value (FUNC), Emotional Value (EMO), Conditional Value (COND), Game Addiction (GAME_ADD), Continuance Intention (CON_INT_PLAY), Intention to Recommend (INT_REC), and Intention to Use Other LBSs (INT_LBS)

Table 2. *Validation of final measurement model - reliability and convergent validity.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) GAME_FEA | 0.784 | | | | | | | | | |
| 2) CONFIRM | 0.535 | 0.902 | | | | | | | | |
| 3) SATIS | 0.515 | 0.742 | 0.910 | | | | | | | |
| 4) FUNC | 0.615 | 0.666 | 0.810 | 0.809 | | | | | | |
| 5) EMO | 0.511 | 0.581 | 0.710 | 0.748 | 0.926 | | | | | |
| 6) COND | 0.337 | 0.440 | 0.530 | 0.486 | 0.437 | 0.896 | | | | |
| 7) GAME_ADD | 0.350 | 0.222 | 0.224 | 0.249 | 0.220 | 0.323 | 0.817 | | | |
| 8) CON_INT_PLAY | 0.513 | 0.569 | 0.719 | 0.723 | 0.726 | 0.504 | 0.252 | 0.962 | | |
| 9) INT_REC | 0.616 | 0.537 | 0.720 | 0.790 | 0.722 | 0.511 | 0.319 | 0.755 | 0.883 | |
| 10) INT_LBS | 0.405 | 0.373 | 0.436 | 0.422 | 0.441 | 0.339 | 0.271 | 0.421 | 0.458 | 0.958 |

*Note: Data in bold denotes square root of the AVE and the elements below the diagonal denotes the correlations between constructs*

Table 3. *The correlation coefficient matrix and the square roots of AVE.*

| Fit Measure | Acceptable Fit Criteria (Parry, 2017, Schermelleh-Engel et al., 2003, Hair et al., 2006, Schumacker and Lomax, 2004) | Indicators Confirmatory factor analysis | Indicators Structural equation modeling |
|---|---|---|---|
| X2/ df | X2/ df <=3 | 1.452 | 1.712 |
| GFI | GFI >=0.90 | 0.927 | 0.904 |
| AGFI | AGFI >= 0.85 | 0.887 | 0.870 |
| NFI | NFI >= 0.90 | 0.949 | 0.932 |
| NNFI | NNFI >=0.95 | 0.977 | 0.963 |
| CFI | CFI >= 0.90 | 0.983 | 0.970 |
| RMSEA | RMSEA <= 0.08 | 0.042 | 0.053 |
| SRMR | SRMR <= 0.08 | 0.0323 | 0.0657 |

Note: Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized) Root Mean Square Residual (SRMR)

Table 4. *Main indices of the model fit test and testing results.*

As presented in Table 2, the results of reliability measures for constructs were ranging from 0.784 to 0.961. All Cronbach's alphas were higher than 0.7 (Nunnally and Bernstein, 1967), indicating good reliability. A Confirmatory Factor Analysis (CFA) was conducted to assess the measurement model. All

of the factor loadings were ranging from 0.706 to 0.991, above the recommended standardized loadings of 0.5 (Kline, 2015) and the average loadings per factor are greater than 0.7 (Hair et al., 2006), demonstrating good convergent validity. Average Variance Extracted (AVE) values for all constructs were greater than the benchmark of 0.5 (Fornell and Larcker, 1981), all Composite Reliability (CR) values exceeded the threshold value of 0.6 (Bagozzi and Yi, 1988). According to Table 3, all correlations between constructs were less than the square roots of the AVE for the corresponding factors, except for the correlation between functional value and satisfaction that was slightly greater than the square root of the AVE. It could be deduced that the discriminant validity was not ideal, but the questionnaire was qualified for the validity test (Lao, 2014). The measurement model had goodness-of-fit indices within the acceptable level, as presented in Table 4, showing an excellent fit and providing the support to proceed with the structural model test.

*Structural model assessment*

After the measurement model assessment, the data were further analyzed through Structural Equation Modeling (SEM). The results were presented in Table 4. The fit indices for SEM were acceptable. All hypotheses except for the relationship between functional value and continuance intention, the relationship between conditional value and continuance intention, the relationship between satisfaction and game addiction, and the relationship between continuance intention and game addiction. Figure 1 showed the results of a structural model. The proportion of the variances for confirmation, functional value, emotional value, conditional value, satisfaction, game addiction, continuance intention, intention to recommend, and intention to use other LBSs could be explained by its exogenous variables in the amounts of 31.2%, 47.5%, 36.2%, 20.6%, 93.2%, 13.5%, 64.3%, 70.4%, and 26.4% respectively.
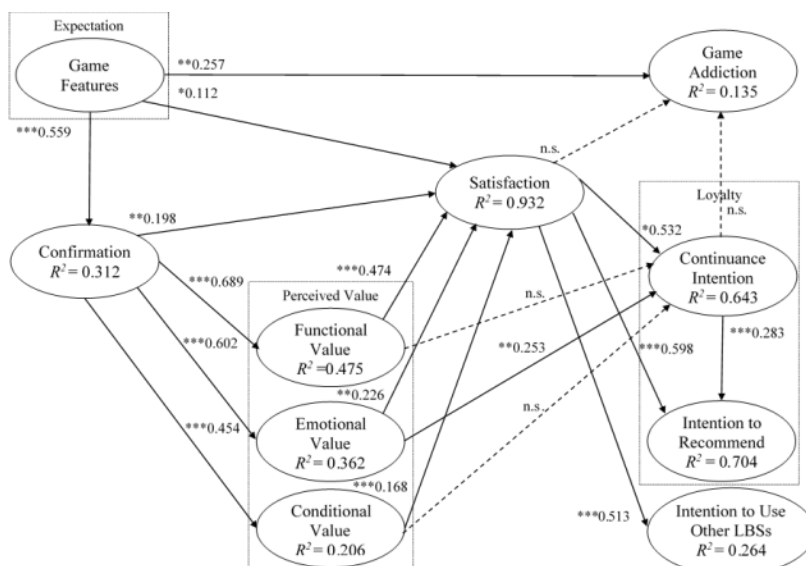


*\*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05.*
Figure 1.  *The results of SEM analysis*

## DISCUSSION OF FINDINGS

All supported hypotheses were similar to the findings in past studies described in the Theoretical model and hypotheses development section. The insignificant relationship between satisfaction and continuance intention on game addiction could be explained by the low mean of Pokémon Go players' game addiction, similar to the study of Chuang et al. (2012) stating that users normally did not addict to SNS games and the addiction affected continuance. The insignificant effect of functional value on gamers' continuance intention could be supported by the negative impact of the perceived functional value of a game item on purchase intention (Yoo, 2015) and the insignificant influence of perceived benefit of SoLoMo services on users' continuance intention (Yang and Lin, 2017). The insignificant relationship between conditional value and continuance intention could be explained by the study of Yang and Lin (2017), which did not consider the conditional value in the continuance of SoLoMo services because they believed that users might not sort out between the original value and enhanced value. Conditional value could happen from functional and social value enhanced by providing a service at the right time and place (Yang and Lin, 2017).

## IMPLICATIONS, AND FUTURE RESEARCH

*Implications*

For academic researchers, applying multidimensional constructs is helpful to show insights regarding perceived value and loyalty in the context of a mobile location-based AR game. Utilizing game features to represent expectation give a deeper understanding for researchers. This study also validates the ECT/ ECM and TCV. Expanding the ECM by replacing perceived usefulness with three TCV factors provides a new perspective of the determinants of satisfaction and continuance intention. The integrative model could be explained the substantial variances of the game success in terms of satisfaction, loyalty, and intention to use other LBSs.

Findings from this study could be guided Pokémon Go's game providers/ developers and could be applied by mobile location-based AR game practitioners to improve other mobile location-based AR games e.g. Let's Hunt Monsters, Jurassic Park Alive. First, in terms of game loyalty, players will positively promote this game to others or recommend this game to someone who seeks their advice if they are satisfied by the game, or they have the intention to continue playing the game. They will continue to use this game or have the intention to continue playing this game in the future because of their satisfaction and the perceived enjoyment received from the game. Players' satisfaction not only strongly leads to their loyalty but also their intention to use other LBSs in the future. Second, players are completely satisfied with the game playing experience or pleased with the overall game mainly due to functional value, emotional value, confirmation, conditional value, and game features respectively.

Thus, game marketers should emphasize the game's usefulness, the suitability for gamers' needs, fun or enjoyment received from playing the game, and the additional benefits from the game in some specific situations. For example, a map in this game could help players to identify the current location and guide direction when they get lost. This game could also provide related real-time information such as place information or nearby friends when players are in uncertain circumstances and need more information to facilitate their decision. Last, confirmation that the game is better than expected or meets players' expectations strongly impacts three consumption values. It is directly affected by the expected game features. Hence, mobile location-based AR game developers should at least provide these features: social features (e.g. contacting friends, providing information about friends, who is in the game, social information features), manipulation and control features (e.g. save features, player management features), narrative and identity features (e.g. avatar creation features, theme and genre features), and reward features (e.g. experience points, bonuses, increasing difficulty or levels), to match players' expectations. Game features are not only the things that gamers hope to see from the game but also satisfy them and increase the chance of their addiction to the game.

*Limitations and future research*

This study exhibits some limitations. First, this work focuses only on Pokémon Go. Future research should replicate this study to other mobile location-based AR games to broaden and generalize findings. Second, this study does not classify players. Future research should classify players into heavy players/ light players or killers/ achievers/ socializers/ explorers (Zichermann and Linder, 2010) and compare them to expand the research results. Third, the impact of functional value and conditional value on continuance intention and the influences of satisfaction and continuance intention on game addiction are not supported. Future studies should conduct qualitative research to explore more about this, especially for heavy players. Fourth, this study is investigated solely in Thailand. Findings from this study should be compared with other Southeast Asian countries.

## REFERENCES

BAGOZZI, R. P. & YI, Y. 1988. On the evaluation of structural equation models. Journal of the academy of marketing science, 16, 74-94.

CHONG, A. Y.-L. 2013. Understanding mobile commerce continuance intentions: an empirical analysis of Chinese consumers. Journal of Computer Information Systems, 53, 22-30.

CHUANG, Y.-H., LIN, C.-S. & SHU, W. Continuing Use of SNS Games for the Growth of Social Network Services. International Conference on Information Resources Management (CONF-IRM), 2012. 30.

CHUNG, N., LEE, H., KIM, J.-Y. & KOO, C. 2018. The role of augmented reality for experience-influenced environments: The case of cultural heritage tourism in Korea. Journal of Travel Research, 57, 627-643.

COURSARIS, C. K., VAN OSCH, W. & SESE, F. Exploring the Empirical Link Between Game Features, Player Motivation, and Game Behavior. MCIS, 2016. 53.

DENG, Z., LU, Y., WEI, K. K. & ZHANG, J. 2010. Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China. International Journal of Information Management, 30, 289-300.

FORNELL, C. & LARCKER, D. F. 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 39-50.

GHAZALI, E., MUTUM, D. S. & WOON, M.-Y. 2019a. Exploring player behavior and motivations to continue playing Pokémon GO. Information Technology & People, 32, 646-667.

GHAZALI, E. M., MUTUM, D. S. & WOON, M. Y. 2019b. Multiple sequential mediation in an extended uses and gratifications model of augmented reality game Pokémon Go. Internet Research.

HAIR, J. F., BLACK, W. C., BABIN, B. J., ANDERSON, R. E. & TATHAM, R. L. 2006. Multivariate data analysis 6th ed. Uppersaddle River: Pearson Prentice Hall.

HAMARI, J., MALIK, A., KOSKI, J. & JOHRI, A. 2019. Uses and Gratifications of Pokémon Go: Why do People Play Mobile Location-Based Augmented Reality Games? International Journal of Human–Computer Interaction, 35, 804-819.

HARBORTH, D. & PAPE, S. Exploring the hype: Investigating technology acceptance factors of Pokémon Go. 2017 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 2017. IEEE, 155-168.

HO, C.-H. & WU, T.-Y. 2012. Factors affecting intent to purchase virtual goods in online games. International Journal of Electronic Business Management, 10.

HO, S.-C., CHEN, J.-L. & LUO, S.-T. 2015. What Users Want: the Factors that Determine the Retention of Social Location-Based Services. Pacific Asia Journal of the Association for Information Systems, 7.

HSIAO, K.-L., LYTRAS, M. D. & CHEN, C.-C. 2019. An in-app purchase framework for location-based AR games: the case of Pokémon Go. Library Hi Tech.

HSU, C.-L. & LIN, J. C.-C. 2019. Understanding continuance intention to use online to offline (O2O) apps. Electronic Markets, 1-15.

HSU, M.-H., CHANG, C.-M., LIN, H.-C. & LIN, Y.-W. 2015. Determinants of continued use of social media: the perspectives of uses and gratifications theory and perceived interactivity. Information Research, 20.

HUANG, C.-K., CHEN, C.-D. & LIU, Y.-T. 2019. To stay or not to stay? Discontinuance intention of gamification apps. Information Technology & People.

HUANG, T.-L. & LIAO, S. 2015. A model of acceptance of augmented-reality interactive technology: the moderating role of cognitive innovativeness. Electronic Commerce Research, 15, 269-295.

HULL, D. C., WILLIAMS, G. A. & GRIFFITHS, M. D. 2013. Video game characteristics, happiness and flow as predictors of addiction among video game players: a pilot study. Journal of behavioral addictions, 2, 145-152.

HWANG, K. & LEE, E. 2013. The role of entertainment and external values in consumer's intention to use Social Network Mobile. International Proceedings of Economics Development and Research, 63, 33.

JUNG, T., CHUNG, N. & LEUE, M. C. 2015. The determinants of recommendations to use augmented reality technologies: The case of a Korean theme park. Tourism management, 49, 75-86.

KANG, J.-Y. M. & JOHNSON, K. K. 2015. Positive word-of-mouth for mobile location-based service retail apps usage. International Journal of Mobile Communications, 13, 599-618.

KAUR, P., DHIR, A., RAJALA, R. & DWIVEDI, Y. 2018. Why people use online social media brand communities: A consumption value theory perspective. Online Information Review, 42, 205-221.

KIM, E. J., NAMKOONG, K., KU, T. & KIM, S. J. 2008. The relationship between online game addiction and aggression, self-control and narcissistic personality traits. European psychiatry, 23, 212-218.

KLÉZL, V., REBROŠOVÁ, K. & VYHLÍDALOVÁ, M. 2018. What Drives Gamers to Buy Virtual Goods? A Comparative Study of European Gamers. on European Integration 2018, 729.

KLINE, R. B. 2015. Principles and practice of structural equation modeling, Guilford publications.

LAO, K. 2014. Research on mechanism of consumer innovativeness influencing green consumption behavior. Nankai Business Review International, 5, 211-224.

LEE, Y. J. 2015. A Cause-effect Analysis of the Relationship between Game Use Motives and Continuous Intention: Mediated Effect of the Attitude toward the Shutdown System. Indian Journal of Science and Technology, 8, 371-379.

LIU, B., ZHOU, W., ZHU, T., GAO, L. & XIANG, Y. 2018. Location privacy and its applications: A systematic study. IEEE access, 6, 17606-17624.

LUO, W. & LEE, Y.-C. 2018. Examining the Loyalty of MMOG players: A Comparative Study between Casual and Core Players. The Journal of Internet Electronic Commerce Research, 18, 139-165.

MERIKIVI, J., TUUNAINEN, V. & NGUYEN, D. 2017. What makes continued mobile gaming enjoyable? Computers in Human Behavior, 68, 411-421.

NUNNALLY, J. & BERNSTEIN, I. 1967. McGraw-Hill series in psychology. Psychometric theory. New York, NY, US: McGraw-Hill.

OGHUMA, A. P., LIBAQUE-SAENZ, C. F., WONG, S. F. & CHANG, Y. 2016. An expectation-confirmation model of continuance intention to use mobile instant messaging. Telematics and Informatics, 33, 34-47.

OLSSON, T., LAGERSTAM, E., KÄRKKÄINEN, T. & VÄÄNÄNEN-VAINIO-MATTILA, K. 2013. Expected user experience of mobile augmented reality services: a user study in the context of shopping centres. Personal and ubiquitous computing, 17, 287-304.

PARRY, S. 2017. Fit Statistics commonly reported for CFA and SEM. Cornell Statistical Consulting Unit: Cornell University.

PIHLSTRÖM, M. 2008. Perceived value of mobile service use and its consequences, Svenska handelshögskolan.

RAUSCHNABEL, P. A., ROSSMANN, A. & TOM DIECK, M. C. 2017. An adoption framework for mobile augmented reality games: The case of Pokémon Go. Computers in Human Behavior, 76, 276-286.

REZAEI, S. & GHODSI, S. S. 2014. Does value matters in playing online game? An empirical study among massively multiplayer online role-playing games (MMORPGs). Computers in Human Behavior, 35, 252-266.

SCHERMELLEH-ENGEL, K., MOOSBRUGGER, H. & MÜLLER, H. 2003. Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. Methods of psychological research online, 8, 23-74.

SCHUMACKER, R. E. & LOMAX, R. G. 2004. A beginner's guide to structural equation modeling, psychology press.

SEOK, H. J., LEE, J. M., PARK, C.-Y. & PARK, J. Y. 2018. Understanding internet gaming addiction among South Korean adolescents through photovoice. Children and Youth Services Review, 94, 35-42.

SHANG, R.-A., CHEN, Y.-C. & HUANG, S.-C. Buying decorative virtual goods for the avatars in the virtual world. 2010 7th International Conference on Service Systems and Service Management, 2010. IEEE, 1-6.

SPINK, P., RAHIM, M. M. & SINGH, U. B. User intentions of downloading games on mobile phones: an empirical evaluation using consumption value model. 2011. ACIS.

SUN, Y., ZHAO, Y., JIA, S. & ZHENG, D. Understanding the antecedents of mobile game addiction: the roles of perceived visibility, perceived enjoyment and flow. Proceedings of the Pacific Asia Conference on Information Systems, 2015. 141.

TOKER, S. & BATURAY, M. H. 2016. Antecedents and consequences of game addiction. Computers in Human Behavior, 55, 668-679.

TUREL, O., SERENKO, A. & BONTIS, N. 2010. User acceptance of hedonic digital artifacts: A theory of consumption values perspective. Information & Management, 47, 53-59.

VAN ROOIJ, A. J., SCHOENMAKERS, T. M., VAN DEN EIJNDEN, R. J., VERMULST, A. A. & VAN DE MHEEN, D. 2012. Video game addiction test: validity and psychometric characteristics. Cyberpsychology, Behavior, and Social Networking, 15, 507-511.

WANG, H.-Y., LIAO, C. & YANG, L.-H. 2013. What affects mobile application use? The roles of consumption values. International Journal of Marketing Studies, 5, 11.

WANG, X., ZHANG, P. & FANG, X. 2017. Factors Influencing Continued Usage of Smartphone Games. International Journal of u-and e-Service, Science and Technology, 10, 67-78.

YANG, H.-L. & LIN, R.-X. 2017. Determinants of the intention to continue use of SoLoMo services: Consumption values and the moderating effects of overloads. Computers in Human Behavior, 73, 583-595.

YOO, J. M. 2015. Perceived Value of Game Items and Purchase Intention. Indian Journal of Science and Technology, 8, 2-7.

YUN, H., HAN, D. & LEE, C. C. 2013. Understanding the use of location-based service applications: Do privacy concerns matter? Journal of Electronic Commerce Research, 14, 215.

ZHANG, J. & MAO, E. Management of location-based services innovation: Insights from consumers. 2013 Suzhou-Silicon Valley-Beijing International Innovation Conference, 2013. IEEE, 1-5.

ZHU, D. S., KUO, M. J. & LIOU, S. H. The Study of Continuance Intention for Online Social Games. 2014 IIAI 3rd International Conference on Advanced Applied Informatics, 2014. IEEE, 230-235.

ZHU, G., SANGWAN, S. & LU, T.-J. 2010. A new theoretical framework of technology acceptance and empirical investigation on self-efficacy-based value adoption model. Nankai Business Review International, 1, 345-372.

ZICHERMANN, G. & LINDER, J. 2010. Game-Based Marketing: Inspire Customer Loyalty Through Rewards, Challenges, and Contests, John Wiley & Sons.

# EXPLORING THE ROLE OF INNOVATION CLUSTERS TOWARDS THE DEVELOPMENT OF FOREST BIO-ECONOMY IN GREECE

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## ABSTRACT

The research examines the prospects for creating the appropriate "innovation ecosystem" for the Greek forestry sector, as a necessary component of value creation based on forests and extends relevant earlier research on innovation issues that concerned forestry and forest industries sector in the country. In Greece, the forest sector and forest industries remain at a relatively marginal level of development and implementation of innovations and collaborative innovation initiatives and especially in the field of forest bioeconomy The aim of this research paper is to investigate the role of innovation clusters in the development of forest bioeconomy in Greece. Based on primary data collection the research examines the potential, the perspectives and characteristics for the development of an innovation cluster for the forest bioeconomy in Greece. The concept of clustering has not yet been developed in the forest value chain. Universities, public administration, and leading companies could act as the main facilitators in such an initiative. Common vision and clear objectives, equality, international orientation and extroversion and geographical proximity, seem to be the main characteristics and values that such a cluster should incorporate, while crucial role plays existence of specialized human resources on forest bioeconomy issues, as long as information sources, that could act as carriers of knowledge to the potential actors of an innovation cluster for Greek forest bioeconomy.

*Keywords: Bioeconomy, innovation clusters, forest bioeconomy, forestry innovation, Greek forest sector.*

## 1. INTRODUCTION

Innovation clusters are an internationally recognized method that promotes innovative entrepreneurship, providing important solutions to various and sometimes serious social problems such as poverty, unemployment and social exclusion, mitigating any inequalities between rural regions and urban centers (Bărbulescu *et al.,* 2021; Mazur *et al.,* 2016; Yu and Jackson, 2011).

At the same time, it is a fact that in most countries that, the transition from the existing production model to a more sustainable one that will ensure the proper use of natural resources and gradually

promote our decoupling from fossil resources, is being actively discussed. The reasons for this transition are many but the most obvious include, tackling climate change, the finite availability of mineral resources, the threatened conservation of biodiversity, global population growth and food insecurity (Calicioglu and Bogdanski, 2021; Damtoft *et al.*, 2008; Sneddon *et al.*, 2006).

The bioeconomy is a new development model, which the EU defines as "an economy based on renewable, biological resources from the land and sea, such as crops, forests, fish, animals and micro-organisms, used for the production of food, materials and energy" (European Commission, 2018). From the definition of the bioeconomy, it seems that the knowledge generated by basic and applied research in universities and research centers, can play a decisive role in the development of this new economic-productive model. In this context, the forest bioeconomy can play a key role, as it links the entire forest value chain, from the management and use of natural resources to the delivery of products and services. Currently, European forests are among the main suppliers of biomass in Europe, and their residuals represent one of the more sustainable feedstocks for bio-based products (Siebert *et al.*, 2018).

International practice has shown that the environment that a collaborative innovation cluster creates, is the right environment for universities, productive enterprises, financial and other institutions to work together, resulting in the production of innovative products and services that meet the above criteria for the bioeconomy. Innovation, thus, plays a central role in the transition towards a sustainable bioeconomy both on the supply side (new technology and products) and the user side (consumption and waste patterns) (Giurca and Späth, 2017). The forest industry has implemented different cluster initiatives to overcome some of the barriers and to develop new collaborations with other industries and research and development providers (Nordisk Ministerråd 2018), promoting bioclusters in several regions with strong links to forestry and forest industries (Ayrapetyan and Hermans 2020), investigating the regional context of the forest-based bioeconomy.

In Greece, the forest sector and forest industries remain at a relatively marginal level of development and implementation of innovations and collaborative innovation initiatives (Trigkas *et al.*, 2020; Trigkas *et al.*, 2012) and especially in the field of forest bioeconomy The aim of this research paper is to investigate the role of innovation clusters in the development of forest bioeconomy in Greece. Our research uses empirical evidence from the forestry sector in Greece, trying to give some concrete answers to research questions regarding the role of collaborative innovative ventures in the forest bioeconomy development, such as:

- Which are the perspectives for the development of innovation clusters, the characteristics, and the values they should incorporate, for the development of a forest-based bioeconomic model in Greece?

- Which could the main objectives - benefits that a potential innovation cluster for forest bioeconomy should achieve, in the Greek forestry sector?

- Which are main barriers to the development of a forest-based bioeconomy cluster initiative in Greece?

## 2. LITERATURE REVIEW

Over the last decade it has become clear that clusters play a very important role in the EU economy, as they are responsible for a large share of employment, SME creation and further industrial and economic specialisation at local and regional level (Reznikova *et al.*, 2020; Fundeanu and Badele, 2014; Moreno *et al.*, 2006 ). A European strategy, focusing on clusters, has therefore been developed, aiming at industrial modernization, the development and support of SMEs and the expansion and promotion of smart specialization. The European Commission has pointed out that the promotion of economic and industrial regional development can be achieved through a successful combination of targeted cluster policies and smart specialization strategies (RIS3). According to the European Cluster Collaboration Platform, European cluster policy is based on three main pillars: a) industrial empowerment and inter-regional cooperation, b) internationalization and c) excellence (European Commission, 2020).

The study carried out for the European Commission entitled "European Panorama of Clusters and industrial change" (Hollanders & Merkelbach, 2020) measured a total of 2,950 strong clusters, which focus to 51 export-oriented industries. It is characteristic that the economic activity of Clusters accounts for 39% of total European jobs and 55% of European wages (Izsa, Ketels, Köcker, & Lämmer, 2016). It also illustrates that the relevance of clusters differs across sectors, as certain sectors are more ubiquitous, while others necessitate a concentration of activity or a network of highly specialized SMEs to be competitive. The same study revealed that, the employment shares of clusters showing the percentage of industry employment located in clusters, with the forestry sector holding a 46% while the wood product sector only a 33%.

Innovation clusters in Greece can be said to have emerged as a development model from the mid-1990s onwards. The first efforts that were made were essentially aiming at copying and transferring other successful European initiatives. The results of the above projects have led to the conclusion that

a key element of the structure and identity of a cluster cannot be other than that of innovation (Komninos and Tsamis, 2008; Kyrgiafini and Sefertzi, 2003).

Based on the above, it is therefore clear that the institution of innovation clusters has not yet found its rightful place in our country (Gkanas *et al.,* 2013; Piperopoulos and Piperopoulos, 2009). In most cases, the clusters created were initiatives of specific Community or national programmes, so that their duration was identical to that of the programmes in question.

The bioeconomy encompasses all possible applications related to the utilisation of biomass, including human food and animal feed. There are many definitions in the literature that try to define the content and scope of the bioeconomy. According to McKinsey (2013), the bioeconomy could be defined as: 'an economy whose building blocks for the production of materials, chemicals and energy are derived from renewable biological resources'. The International Bioeconomy Advisory Board (IABB), established on the occasion of the first World Bioeconomy Summit in Berlin in November 2015, defines it as "the production based on knowledge and utilisation of biological resources, biological processes and principles for the provision of goods and services to all economic sectors in a sustainable manner".  The EU defines the bioeconomy as "an economy based on renewable, biological resources from the land and sea, such as crops, forests, fish, animals and micro-organisms, used for the production of food, materials and energy" (European Commission, 2018). In the same document, the EU defines the main objectives it has set for itself, which are related to the creation and establishment of a resource-efficient and sustainable economy (Bos & Kranendonk, 2018). This economy will be characterised by innovation and low carbon emissions, combining the requirements for sustainable agriculture and fisheries, food security and the sustainable use of renewable biological resources for industrial purposes, while ensuring biodiversity and environmental protection.

Forests have long played an extremely important role in our economy and society, as they contribute to job creation and are a source of food, medicines, materials, clean water and many other goods, and for centuries have been a thriving source of cultural heritage and construction art, tradition and innovation. Forest-based industries include, inter alia: (i) wood processing industries, which produce wood materials and products that can be visually identified as being derived from wood; (ii) pulp and paper production and conversion industries; and (iii) vertically integrated multi-product biorefineries. At subsequent stages of their value chains, the chemical industry, the energy industry, the textile industry and the construction industry are also included.

In 2018, in the EU, 2.1 million people worked in the traditional forest sector (forest management, logging, wood sawing, timber-based products, cork, pulp and paper), generating a gross added value of EUR 109.855 million. Another 1.2 million people worked in the manufacture of wood-based

furniture and in the paper printing sector, such as books and newspapers, generating gross added value of EUR 25 billion and EUR 31 billion respectively. In 2018, 397.000 enterprises were active in wood-based industries, representing 20% of manufacturing enterprises across the EU. By adding to these activities the paper-based, wood-based heat and electricity, and wood-based construction sectors, extensive forest-based value chains supported 4 million jobs in the green economy (European Commission, 2021; Verkerk et al., 2021).

New technologies and new, contemporary business models are shaping new potential opportunities for the use of forest biomass as a building block for sustainable development. So, when we now refer to products of forest origin we can safely move away from the classics such as timber, pulp, paper and possibly bio-energy and talk about knowledge-intensive products such as bio-based fibers and textiles, bio-plastics, chemicals and pharmaceuticals as well as bio-based nanomaterials (Verkerk *et al.,* 2021). The fact that it is now possible to use forest biomass in a more "smart" and efficient way that contributes directly to the creation of new skilled jobs that will meet the demands of this new, growing "industry" of forest bioeconomy (Hetemäki, 2014). Taking into account all the above parameters, it is clear that the aim is to develop the forest bioeconomy in a sustainable and cyclical way that will not compromise the biological integrity of the ecosystems concerned (Kleinschmit et al., 2017).

The development of activities that will promote commercial actions such as those proposed above will a priori contain an element of innovation. The study by (Ludvig et al. , 2016) stresses the importance of having both institutions and organizations - foundations that will support such efforts. In order to strengthen cooperation in the EU, a forestry research and innovation partnership is needed to overcome the fragmentation of public research efforts in the EU and to strengthen work on research priorities that require closer coordination. Member States and all stakeholders in the forest value chain are working together to strengthen the role of forestry in this new bio-economic model. The aim is to accelerate the adoption of forest-related innovations, promote knowledge exchange, cooperation, education, training and advice to support improved sustainable forest management practices and unlock the socio-economic and environmental potential of forests in rural areas (Lier *et al.,* 2022; Aggestam and Giurca, 2021).

## 3. METHODOLOGY

The main objective of this paper is to examine the role that innovation clusters can play in the development of the forest bioeconomy and what are the characteristics that could be included in such an initiative in Greece.

For the collection of primary data, a questionnaire was created specifically structured for the purposes of the research. The questionnaire consisted of three groups of questions. The first group examined the existing knowledge on forest bioeconomy issues and the potential for the development of a forest-based bioeconomy model in Greece. This part included nine questions. In the second part, which constitutes the focus of this paper, the prospects and characteristics for the development of the innovation cluster for the forest bioeconomy in Greece were examined. This part consisted of ten questions. The third part included the demographic characteristics of the respondents and consisted of eight questions.

The questionnaire was addressed to the largest companies of the forest industry in Greece, while at the same time, institutions such as universities and research centers of the forestry sector, the Ministry of Environment and the Forest Service, as well as the main funding agencies and non-profit organizations of environmental and financial nature were also surveyed. The selection of the above was based on their eligibility as potential partners in the creation of an innovation cluster for forest bioeconomy, but also as actors who can formulate the appropriate framework for the development of an innovation cluster focusing on the forest bioeconomy. The sample selected consisted of 120 institutions and enterprises, of which thirty responded. The low participation rate of the public sector services, namely the forestry service, is worrying as it is once again presented as introverted and not willing to participate in the research, an element that is a characteristic of the Greek forestry service over time (Kakouros et al., 2019). The survey was conducted via google forms from December 2020 to April 2021.

| Main Activity | % | Year of establishment | % |
|---|---|---|---|
| University – research center | 30,0 | <2000 | 66,7 |
| Ministry – public service | 23,3 | 2011-2020 | 33,3 |
| Private company | 33,3 | | |
| Financial organization | 13,3 | | |
| TOTAL | | | |

Table 1. Profile of the surveyed population

Data analysis was performed with the SPSS statistical program and the relevant tests of Frequencies, Descriptives and Crosstabs, $X^2$ test for independence between variables and correlations were performed. The reliability of the factors used to define the items of the questionnaire was investigated using the Reliability Analysis test and the Cronbach's reliability coefficient a. The test showed that the scales of items used to describe the factors of the questionnaire are reliable, as the Cronbach's coefficient a is greater than or close to 0.7 (Siomkos and Vasilikopoulou, 2005).

## 4. RESULTS

The results are related to our first research question, which aimed to investigate the perspectives for the development of innovation clusters and the identification of their characteristics for the development of a forest-based bioeconomic model in Greece. According to them, when asked whether the respondents are aware of the concept of innovation clusters, a 60% answered yes and a 40% no. Given that innovation clusters are an important tool for economic and social development that has been applied in the European area for several years, the negative answer of 40% indicates that in Greece their concept has not yet been developed to the extent that they could be developed, especially for those that can be developed in the forest value chain.

Regarding the form that it would be suitable to have an innovation cluster for forest bioeconomy in Greece, a 56.7% of the reviewed organizations chose the complementary form with other enterprises and actors from other sectors of the economy, a 36.7% the vertical form, i. e. consisting of actors and enterprises belonging to the whole forest value chain and a 6.7% the horizontal form, i. e. consisting of similar actors and enterprises. Regarding the importance of the participation of potential stakeholders in an innovation cluater for forest bioeconomy, the results show that forestry schools, environmental departments of universities, research centers in Greece and abroad, the forestry service and forestry cooperatives, have been evaluated as very important, with percentages of 53.3%, 30%, 36.7%, 50% and 40% of the responses, respectively. Wood industries, energy and biotechnology companies, also seem to play an important role. The role of financial institutions and consultancy firms is also considered to be important, while less importance is attributed to the Ministry of Environment and local authorities. From the above-mentioned institutions, the assessment of the institution that could play the role of a facilitator for the creation of an innovation cluster in the field of forest bioeconomy in Greece, showed that great importance is attributed to the university institutions, especially those dealing with forestry science, the Ministry of Environment and wood industries, energy and biobased product production companies, while less importance is given to regional and local authorities, the Forestry Service and forest cooperatives. Regarding the key characteristics and main values that a forest bioeconomy innovation cluster in Greece should incorporate (Table 2), the respondents gave significant weight to partnership in the participation of all stakeholders/businesses, common vision and clear target setting, transparency and accountability within the cluster and outside its boundaries, international orientation and extroversion, the equal participation of all actors/businesses, the connectivity of flows between the members at a cross-regional level and the geographical proximity of members.

| Values and Characteristics | No | Weak | Moderate | Strong | Very strong |
|---|---|---|---|---|---|
| Geographical proximity of participants | 6,7% | 13,3% | 20,0% | 43,3% | 16,7% |
| Common technology | 3,3% | 30,0% | 40,0% | 23,3% | 3,3% |
| Partnership in the participation of all stakeholders - businesses/members | 0,0% | 3,3% | 30,0% | 63,3% | 3,3% |
| Equal participation of all stakeholders - businesses/members | 0,0% | 10,0% | 33,3% | 50,0% | 6,7% |
| Connectivity in flows and transactions between members - cross-regional level | 3,3% | 3,3% | 30,0% | 46,7% | 16,7% |
| Establishment and activity in a rural environment | 0,0% | 13,3% | 43,3% | 40,0% | 3,3% |
| Transparency and accountability to its members and third parties | 0,0% | 6,7% | 13,3% | 56,7% | 23,3% |
| Innovative culture | 0,0% | 0,0% | 20,0% | 36,7% | 43,3% |
| Vision and clear objectives | 0,0% | 0,0% | 3,3% | 36,7% | 60,0% |
| International orientation and extroversion | 0,0% | 0,0% | 3,3% | 46,7% | 50,0% |

Table 2. Values and characteristics of a forest bioeconomy innovation cluster

Concerning the main objectives - benefits that a potential innovation cluster for forest bioeconomy should achieve, (second research question), we argue that the results are slightly inconclusive since most of the variables received high scores. The conclusion from this question is that, in general, respondents have high expectations for the results that an innovation cluster can bring in the development of the forest bioeconomy in the country, in particular in terms of the development of new innovative products, the reduction of operating costs for the participating actors, extroversion and the development of an innovative culture in the context of open innovation models among the potential stakeholders. The cross-tabulation and statistical significance analysis with the $\chi2$ criterion between the main activity of the respondents and the values and characteristics that a potential innovation cluster for forest bioeconomy in Greece could embody, showed that it is a significant determinant, only in terms of the geographical proximity of the potential actors that could constitute such a cluster (Pearson Chi-Square = 24,882, $p<0.05$ According to the same results, the evaluation of the cluster's characteristics and values shows that the universities and research centers are considering as the most important values and characteristics the geographical proximity, the ethnicity of the cluster's participation, the existence of a vision and clear objectives, as well as the international orientation and extroversion of the cluster. Respectively, public organizations rated partnership, transparency and accountability, innovative culture and vision and clear target setting as the most important factors. Businesses and private actors, in turn, consider as most important geographical proximity, partnership and parity in cluster participation, connectivity in technology and material flows, innovativeness, and extroversion. Finally, financial institutions seem to give importance to issues of partnership and parity, transparency and accountability, as well as, the existence of a shared vision and the focus on the establishment of innovative culture.

In response to the final research question regarding the main barriers to the development of a forest-based bioeconomy cluster initiative in Greece, the analysis of means on a scale from 1 to 5 (1 being the least important and 5 being the most important factor), the survey revealed the following: The main barrier is the absence of a national bioeconomy strategy (4.3± 0.88), followed by bureaucracy (4.2 ± 0.85), then the lack of an innovative culture in organizations and enterprises (3.93 ± 0.83), as well as the institutional framework of enterprises and environmental - forestry legislation (3.92 ± 0.66), and then parameters such as transparency, corruption, banks' credit policy, lack of qualified staff and lack of information to follow lower in ranking. As these factors appear to be significantly related to each other, a Pearson's correlation test was performed. The results (Table 3), show that there is a strong positive correlation between lack of transparency and the existence of corruption (pcc=0.718, Correlation is significant at the 0.01 level 2-tailed), lack of qualified staff for bioeconomy and inaccessible knowledge about bioeconomy in the forest sector (pcc=0.730 Correlation is significant at the 0.01 level 2-tailed), lack of information providers and inaccessible knowledge on forest bioeconomy (pcc=0.758 Correlation is significant at the 0.01 level 2-tailed), and a relatively strong correlation between lack of qualified staff and lack of information providers on forest bioeconomy (pcc=0.671 Correlation is significant at the 0.01 level 2-tailed). In the same vain, the analysis showed that the greater the lack of qualified staff on forest bioeconomy and information sources, as well as inaccessible knowledge on the subject, the weaker the institutional framework around the promotion of a forest-based bioeconomic model in the country and the prospect of creating an innovation cluster for forestry, as pcc = -,530 -,452-,436 respectively.

| Pearson Correlation | Γραφειοκρατία | Θεσμικό πλαίσιο λειτουργίας | Διαφάνεια | Διαφθορά | Πολιτική αστάθεια | Πιστωτική πολιτική τραπεζών | Έλλειψη των εξειδικευμένων στελεχών | Έλλειψη αγοράς για προϊόντα | Έλλειψη φορέων για πληροφόρησης | Απρόσιτη γνώση για τη βιοικονομία | Οικονομική αστάθεια | Έλλειψη καινοτομικής κουλτούρας | Έλλειψη σχέσεων εμπιστοσύνης | Απουσία εθνικής στρατηγικής |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Γραφειοκρατία | 1 | ,283 | ,109 | ,306 | ,188 | -,160 | -,227 | -,076 | -,140 | -,236 | -,061 | ,315 | ,161 | ,149 |
| Θεσμικό πλαίσιο | | 1 | ,017 | ,187 | ,216 | -,113 | -,530** | -,249 | -,452* | -,436* | -,017 | -,139 | ,210 | ,172 |
| Διαφάνεια | | | 1 | ,718** | ,461* | -,205 | -,069 | -,006 | -,092 | -,111 | -,132 | ,067 | ,323 | ,059 |
| Διαφθορά | | | | 1 | ,631** | ,033 | -,095 | ,082 | -,115 | ,027 | ,173 | ,202 | ,437* | ,475** |
| Πολιτική αστάθεια | | | | | 1 | ,038 | ,000 | ,132 | ,067 | ,051 | ,142 | ,218 | ,459* | ,417* |
| Πιστωτική πολιτική των τραπεζών | | | | | | 1 | ,520** | ,327 | ,166 | ,466** | ,519** | ,184 | -,024 | ,420* |
| Έλλειψη εξειδικευμένων στελεχών | | | | | | | 1 | ,665** | ,671** | ,730** | ,360 | ,257 | -,124 | ,141 |
| Έλλειψη αγοράς για προϊόντα | | | | | | | | 1 | ,448* | ,641** | ,322 | ,243 | -,018 | ,196 |
| Έλλειψη φορέων πληροφόρησης | | | | | | | | | 1 | ,758** | ,325 | ,299 | -,105 | -,114 |
| Απρόσιτη γνώση για τη βιοικονομία | | | | | | | | | | 1 | ,285 | ,416* | ,086 | ,038 |
| Οικονομική αστάθεια | | | | | | | | | | | 1 | ,154 | -,031 | ,626** |
| Έλλειψη καινοτομικής κουλτούρας | | | | | | | | | | | | 1 | ,434* | ,171 |
| Έλλειψη σχέσεων εμπιστοσύνης | | | | | | | | | | | | | 1 | ,300 |
| Απουσία εθνικής στρατηγικής | | | | | | | | | | | | | | 1 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Correlation of obstacles for the development of a forest bioeconomy innovation cluster

## 5. DISCUSSION

The research examines the prospects for creating the appropriate "innovation ecosystem" for the Greek forestry sector, as a necessary component of value creation based on forests, so that they can become a point of attention, supporting and protection by society and political leadership, and extends relevant earlier research on innovation issues that concerned forestry and forest industries sector in the country (Trigkas *et al.,* 2020; Trigkas *et al.,* 2012; Karagkouni et al., 2010; Trigkas et al., 2009). An important contribution of the research is also the fact that, it is adapted to a contemporary model for growth based on forests and the products and services they provide, the one of the bioeconomy, which is a cutting-edge field in the sustainable development strategy of the EU and internationally.

Given that innovation clusters are an important tool for economic and social development that has been applied in the European area for several years (Hollanders & Merkelbach, 2020), the negative answer of 40% indicates that in Greece their concept has not yet been developed to the extent that they could be developed, especially for those that can be developed in the forest value chain. Respondents rated as important the involvement of forestry and environmental faculties, research centers, wood and energy companies, biotechnology companies and financial institutions in the creation of a forest bioeconomy innovation cluster. They also consider that the role of facilitator could be undertaken by universities, the Ministry of Environment, wood energy companies and biobased product companies. In order to structure an innovation cluster, the respondents evaluated as very important the partnership in the participation of all actors-businesses, the common vision and clear objectives, the international orientation and extroversion, the equal participation of all stakeholders and finally the geographical proximity. These characteristics and values are according to relative research for innovation clusters (Bărbulescu *et al.,* 2021; Scott *et al.,* 2019; Mazur *et al.,* 2016; Yu and Jackson, 2011).

In order to maximize the impact of R&D and innovation in the forest bioeconomy in Greece, it is necessary that priority should be given to a more coherent policy framework, an increase in investment in research and development of forest bio-based markets. A primary step for to achieve all these objectives is of course the development of a strategy to exclusively oriented towards the bio-economy and the establishment of joint ventures in the forestry value chain. However, the mere existence of a strategy does not automatically guarantee that all the potential of the bioeconomy will be exploited. that the bioeconomy offers. The examples from the forest bioeconomy sector, clearly show the importance of setting clear objectives and actions in terms of content, the adoption of sustainability and cyclical resource characteristics, the establishment of setting priorities, common values and targets etc. Adequate funding is crucial for the development of the forest bioeconomy and can affect all sectors horizontally. Public R&D funding is widely considered a key measure to strengthen the innovation ecosystem in the forestry sector for the bioeconomy. However, not all state

strategy documents provide specific measures on how to facilitate this access to public and private money. In particular, it remains unclear to what extent the general measures proposed will enable private actors to increasingly increase the venture capital in the Greek forestry sector, which is required for such efforts.

The regional dimension is crucial for fostering innovation. We argue that, at this level networks and clusters of SMEs, industries and research institutions in the forestry sector, can also be developed and knowledge spillovers can occur. Each region has its own strengths and resources and that these are very important to stimulate their innovation potential. In fact, an important difference between the regional bioeconomy strategies is that each identifies its particular strengths and potentials as an important factor in defining areas of focus. These regional differences represent an important opportunity for cross-regional collaboration (de Besi & McCormick, 2015). A goal-oriented collaboration between the different actors in the Greek forestry sector, not only at the sectoral level but also at the policy level, is necessary to establish a future holistic interregional approach in order to link all relevant actors in interregional and sectoral value chains to to realise a forest bio-based economy. Especially the Greek regions with medium and high income which include the Greek regions, which are at a medium and low level of maturity, need to develop their own forest innovation ecosystems.

The main barriers to the development of a forest-based bioeconomy cluster initiative in Greece, are the absence of a national bioeconomy strategy, followed by bureaucracy, the lack of an innovative culture in organizations and enterprises, as well as the institutional framework of enterprises and environmental - forestry legislation, and parameters such as transparency, corruption, banks' credit policy, lack of qualified staff and lack of information. Furthermore, the survey revealed that it is of a crucial role the existence of specialized human resources on forest bioeconomy issues, as long as information sources, that could act as carriers of knowledge to the potential actors of an innovation cluster for Greek forest bioeconomy that could compensate for the lack of resources and capabilities that are important especially in the forestry sector. In a country like Greece, with a low level of environmental education, activities are largely needed to raise awareness and acceptance among citizens in regional forest bioeconomy ecosystems, but also among whole societies about the potential benefits and risks of the bioeconomy for cities and regions. Participatory approaches should be used to develop solutions to potential conflicts at local and regional level regarding land use, natural resource management, needs of local communities, the ecological boundaries of forestry and biotechnological research. (Haarich, 2017; E.U., 2018, E.U., 2021).

Considering the results of the survey, we argue that a general intention exists, to develop the bioeconomy in the Greek forestry context. For this to happen, our study reveals that it will be necessary to combine the primary research carried out in universities and research centers with the

productive capabilities of businesses and to translate these into high – value added products and services addressing consumers needs. The whole above cycle - of knowledge production, implementation and commercial exploitation - can be achieved through the scheme of innovation clusters under the conditions explored in this study. All of the above can and perhaps should be constant targets in the effort to engage the economic, productive, institutional, research and market actors of the wider forestry sector in Greece, but also to strengthen the development of trust and accountability relations between them, for the establishment and the development of this "ecosystem" based on the bioeconomic model.

## REFERENCES

Aggestam, F., & Giurca, A. (2021). The art of the "green" deal: Policy pathways for the EU Forest Strategy. Forest Policy and Economics, 128, 102456.

Ayrapetyan, D., & Hermans, F. (2020). Introducing a multiscalar framework for biocluster research: A meta-analysis. Sustainability, 12(9), 3890.

Bărbulescu, O., Nicolau, C., & Munteanu, D. (2021). Within the entrepreneurship ecosystem: Is innovation clusters' strategic approach boosting businesses' sustainable development?. Sustainability, 13(21), 11762.

Calicioglu, Ö., & Bogdanski, A. (2021). Linking the bioeconomy to the 2030 sustainable development agenda: Can SDG indicators be used to monitor progress towards a sustainable bioeconomy?. New Biotechnology, 61, 40-49.

Damtoft, J. S., Lukasik, J., Herfort, D., Sorrentino, D., & Gartner, E. M. (2008). Sustainable development and climate change initiatives. Cement and concrete research, 38(2), 115-127.

de Besi M. and McCormick K. (2015) Towards a Bioeconomy in Europe: National, Regional and Industrial Strategies. Article, Sustainability 2015, 7, 10461-10478;

European Commission (2021). A new EU forestry strategy for 2030. COM(2021) 572 final.

European Commission, Directorate-General for Research and Innovation, (2018). A sustainable bioeconomy for Europe : strengthening the connection between economy, society and the environment : updated bioeconomy strategy, Publications Office.

European Commission, Executive Agency for Small and Medium-sized Enterprises, Merkelbach, I., Hollanders, H. (2020). European panorama of clusters and industrial change : performance of strong clusters across 51 sectors and the role of firm size in driving specialisation : 2020 edition, Publications Office.

Fundeanu, D. D., & Badele, C. S. (2014). The impact of regional innovative clusters on competitiveness. Procedia - Social and Behavioral Sciences, 124, 405-414.

Giurca, A., & Späth, P. (2017). A forest-based bioeconomy for Germany? Strengths, weaknesses and policy options for lignocellulosic biorefineries. Journal of Cleaner Production, 153, 51-62.

Gkanas, E. I., MagkouKriticou, V., Makridis, S. S., Stubos, A. K., & Bakouros, I. (2013). Nanotechnology and Innovation, Recent status and the strategic implication for the formation of high tech clusters in Greece, in between a global economic crisis. arXiv preprint arXiv:1303.5290.

Haarich S. (2017) Bioeconomy development in EU regions. Mapping of EU Member States'/regions' Research and Innovation plans & Strategies for Smart Specialisation (RIS3) on Bioeconomy for 2014-2020.

Kakouros, P. , Topalidou, S. , Hadjiordanou, L. , Poulis, G. , Katsakiori, M. , & Chrysopolitou, V. (2019). Identification and assessment of the needs of the staff of the Forestry Service and other stakeholders involved in the protection and management of the forests of the Natura 2000 network in Greece.

Karagouni, G., Papadopoulos, I., & Trigkas, M. (2010). The innovativeness of Thessalian wood and furniture SMEs: towards an understanding of internal and external drivers. MIBES Transactions International Journal, 4(1), 31-48.

Komninos, N., & Tsamis, A. (2008). The system of innovation in Greece: structural asymmetries and policy failure. International Journal of Innovation and Regional Development, 1(1), 1-23.

Kyrgiafini, L., & Sefertzi, E. (2003). Changing regional systems of innovation in Greece: the impact of regional innovation strategy initiatives in peripheral areas of Europe. European Planning Studies, 11(8), 885-910.

Lier, M., Köhl, M., Korhonen, K. T., Linser, S., Prins, K., & Talarczyk, A. (2022). The New EU Forest Strategy for 2030: A New Understanding of Sustainable Forest Management?. Forests, 13(2), 245.

Mazur, V. V., Barmuta, K. A., Demin, S. S., Tikhomirov, E. A., & Bykovskiy, M. A. (2016). Innovation clusters: Advantages and disadvantages. International Journal of Economics and financial issues, 6(1), 270-274.

Moreno, R., Paci, R., & Usai, S. (2006). Innovation clusters in the European regions. European Planning Studies, 14(9), 1235-1263.

Piperopoulos, P., & Piperopoulos, G. (2009). Is Greece finally on the right path toward entrepreneurship, innovation, and business clusters?. International Journal of Public Administration, 33(1), 55-59.

Points, A. C. T. I. O. N. (2018). Nordic Bioeconomy Programme.

Reznikova, N. V., Rubtsova, M. Y., & Yatsenko, O. M. (2020). The role of innovation clusters in building up investment and innovation strategies in the crossborder cooperation context. Actual Problems of International Relations, 1(142), 85-98.

Scott, S., Hughes, M., & Kraus, S. (2019). Developing relationships in innovation clusters. Entrepreneurship & Regional Development, 31(1-2), 22-45.

Siebert, A., Bezama, A., O'Keeffe, S., & Thrän, D. (2018). Social life cycle assessment: in pursuit of a framework for assessing wood-based products from bioeconomy regions in Germany. The International Journal of Life Cycle Assessment, 23, 651-662.

Siomkos, G. I., & Vasilikopoulou, A. I. (2005). Implementation of Analysis Methods in the Market Research. Chapter, 7, 285-312.

Sneddon, C., Howarth, R. B., & Norgaard, R. B. (2006). Sustainable development in a post-Brundtland world. Ecological economics, 57(2), 253-268.

Trigkas, M., Anastopoulos, C., Papadopoulos, I., & Lazaridou, D. (2020). Business model for developing strategies of forest cooperatives. Evidence from an emerging business environment in Greece. Journal of Sustainable Forestry, 39(3), 259-282.

Trigkas, M., Papadopoulos, I., & Karagkouni, G. (2009). The economic efficiency of the innovation system in the wood and furniture enterprises branch in the region of Thessaly–Greece. In Book Proceedings of the 2nd Annual International EUROMED Conference of Managerial and Entrepreneurial Developments in the Mediterranean Area, Salerno, Italy.

Trigkas, M., Papadopoulos, I. and Karagouni, G. (2012). Economic efficiency of wood and furniture innovation system. European Journal of Innovation Management, 15(2), pp.150–176.

Verkerk, P.J., Hassegawa, M., Van Brusselen, J., Cramm, M., Chen, X., Imparato Maximo, Y., Koç, M., Lovrić, M., Tekle Tegegne, Y. (2021). The role of forest products in the global bioeconomy – Enabling substitution by wood-based products and contributing to the Sustainable Development Goals. Rome, FAO on behalf of the Advisory Committee on Sustainable Forest-based Industries (ACSFI).

Yu, J., & Jackson, R. (2011). Regional innovation clusters: A critical review. Growth and change, 42(2), 111-124.

# BRIDGING GAMIFICATION AND ONLINE CUSTOMER LOYALTY: QUALITATIVE EVIDENCE FROM E-TAILERS

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## ABSTRACT

Although customer loyalty is widely acknowledged in the field of marketing scholarship, the usefulness of gamification in fostering customer loyalty in e-tailers remains neglected. In particular, how gamification contributes to customer loyalty to e-tailers has not gained significant attention. In this paper, we opted for a qualitative inquiry to reveal the potential of gamification elements in developing customer loyalty to online stores. The article reports a qualitative analysis based on semi-structured interviews with 15 experts having exceptional knowledge and experience in online marketing in e-tail settings. Six gamification elements were identified as applicable: (1) treasures, (2) contests, (3) wheels of fortune, (4) points, (5) tests, and (6) quizzes. Results highlighted the breadth of elements in the household & personal products industry. The findings revealed that even though the scope of gamification goes far beyond developing customer loyalty, e-tailers frequently deny gamification solutions due to the demand for money, time, IT and human resources.

*Keywords: customer, loyalty, e-loyalty, e-tailer, gamification, points, scores, badges.*

## INTRODUCTION

In an era of rapid technological development, online shopping has become an ordinary way of life. Over the past three years, retail e-commerce sales worldwide increased from 4.25 to 5.54 billion USD (Statista, 2023). Statistical data shows that over 12 million online stores operate worldwide (Fokina, 2023). In light of this myriad of digital possibilities, shoppers become hesitant due to too many choices. This hesitation leads to excessive cart abandonment (Xu and Huang, 2015). The explosive growth of online shopping has not only highlighted the problem of cart abandonment but also sparked customers' interest in price comparison engines and apps (e.g., GoogleShopping, PriceGrabber, Shopzilla, etc.) used to compare the prices of different retailers before making the actual purchase (Hackl et al., 2021). Price comparison techniques determine customers' choice to opt for the e-tailer suggesting the lowest price boundary in exchange for the habitual one. With the increased price comparison capabilities and many retailers just a click away, we notice that online customer

loyalty experiences serious threats. New practices must emerge to build and maintain online customer loyalty in a turbulent scenario. Gamification elements that promise increased engagement and improve the overall customer experience, act like stimulators for loyalty, which remains key in e-tail settings (Husain, 2017; Ruiz-Molina *et al.*, 2021).

Over the past decade, gamification has become an extant research object, especially in educational entrepreneurship (Eryiğit *et al.*, 2021; Murillo-Zamorano *et al.*, 2023). Recent empirical studies (Abou-Shouk and Soliman, 2021; Lee, 2019) focused on how gamification elements contribute to customer loyalty in the case of online services. During the last few years, researchers (Aparicio *et al.*, 2021; Fathian *et al.*, 2019; Xi and Hamari, 2020) have proved that gamification may influence customer loyalty in e-tailing settings. Despite the significant interest, prior studies do not identify the most promising gamification elements in terms of customer loyalty. With the exponential development of e-commerce, it becomes necessary to deepen the understanding of gamification potential to increase customer loyalty.

This study aims to reveal the potential of gamification elements in pursuing customer loyalty in e-tailers. We, therefore, conducted a study structured around the following research questions:

RQ1: How does loyalty bring value to e-tailers?

RQ2: How could gamification help increase customer loyalty to e-tailers?

We have chosen to benefit from qualitative interviews to answer the research questions. Semi-structured interviews with marketing experts were used to explore gamification's impact on online customer loyalty to e-tailers.

The following section reviews previous findings and theoretical background on customer loyalty and gamification. Then qualitative research design and methodology are described. In the results section, we identify the value of customer loyalty to e-tailers and the gamification potential for increasing loyalty. The study ends with a discussion and conclusions.

## LITERATURE BACKGROUND

Customer loyalty is a dominant research topic and a strategic goal for most companies in a competitive environment (Rather and Sharma, 2017). The literature reflects that the concept of loyalty has many facets. Marketing scholars suggest a variety of factors determining customer loyalty. According to Yuen and Chan (2010), loyalty stems from positive feelings toward the brand and manifests through repeat purchases over a certain period. Pansari and Kumar (2017) emphasized that loyal customers can make repeated purchases and influence other customers, for example, by

recommending a product or shaping the opinions of other customers. These factors are observed in various loyalty studies, but their interpretation depends on the overall research context and perspective.

Under the extensive expansion of online shopping, loyalty shifts to e-loyalty. In reference to Ilsever et al. (2007), e-loyalty is the intention to revisit the online store or make future purchases from it. The interface with the electronic environment entails new loyalty factors. Online shopping has become a leisure activity that stimulates customers' emotional well-being and enjoyment (Demir and Demir, 2020; Cachero-Martínez, Vázquez-Casielles, 2021). An informative online store that rewards customers with a pleasant experience may encourage the intention to repurchase (Galati *et al.*, 2016).

On the other hand, in the myriad of possible choices in the online environment, customers using one click could leave an e-store or switch to another (Kvicala and Starzyczna, 2023). As a result, e-tailers face new risks that prevent them from building e-loyalty. Gamification may become one of the possible solutions to overcome these risks. The most frequently applied gamified elements are avatars, leaderboards, levels and progression bars. Some are used to enhance the competition, others – to promote social connection or enhance the personalized experience.

Gamification and gamified items are frequently employed in the business environment, including customer loyalty issues (Bauer *et al.*, 2020; Hwang and Choi, 2020). According to Rodrigues *et al.* (2016), the usefulness of gamification for online stores is twofold. First, gamification enhances customers' experience and enjoyment and, thus, increases brand loyalty (Rodrigues *et al.*, 2016). Second, gamification motivates users to use digital systems more frequently, encourages repurchase rates (Aparicio *et al.*, 2021) and boosts customer retention (Zhang *et al.*, 2023). Thus, gamification is essential in customer relationship management and can be successfully applied to build stronger customer loyalty (Hwang and Choi, 2020).

## METHODS

The current research delved into the issue of how e-tailers can harness gamification to foster customer loyalty to e-tailers. We chose a qualitative research design to gain in-depth information in response to the study's scope. The qualitative inquiry is appropriate to capture gamification's progress and perspectives in strengthening customer loyalty.

The contemporary research practice confirmed the applicability of the interview method to explore the patterns and facets of gamification elements and their impact on customer loyalty (Lorestani and Khalilli, 2020; Kunkel *et al.*, 2021; Schmah and Ritz, 2021). Therefore, we collected research data by interviewing online marketing experts from e-tailers based on a prepared interview guide.

In this study, experts were defined to have at least three years of experience in online marketing at an e-tailer. The other selection criteria were professional experience as a top-level or middle-level manager, and the central area of professional activity should have revolved around e-tailing. To glean highly detailed accounts of specific experiences, we chose non-random sampling with maximal variation within the industries. Interviewees were recruited via direct contact with online stores and acquaintances from our professional network. To determine the potential of gamification in strengthening customer loyalty in e-tailing settings, we invited one key informant per company. Some informants were chosen for their knowledge of the topic and the expected level of new insights.

The experts had 9.67 years (SD = 4.34) of experience in online marketing (Table 1). They represented various industries, such as food and staples retailing, household and personal products, consumer durables and apparel, health care equipment and supplies, technology hardware and equipment, commercial services and supplies, professional services, and construction materials (Table 1).

| Code | Position | Experience in online marketing (years) | Industry (GICS standard) |
|---|---|---|---|
| I1 | Manager | 10 | Food & staples retailing |
| I2 | CEO | 11 | Household & personal products |
| I3 | CEO | 9 | Consumer durables & apparel |
| I4 | Manager | 10 | Healthcare equipment & supplies |
| I5 | Marketing manager | 8 | Technology hardware & equipment |
| I6 | Retail manager | 10 | Commercial services & supplies |
| I7 | Accredited marketing consultant | 10 | Professional services |
| I8 | CEO | 4 | Food & staples retailing |
| I9 | CEO | 7 | Food & staples retailing |
| I10 | Accredited marketing consultant | 6 | Professional services |
| I11 | CEO | 17 | Construction materials |
| I12 | Electronic sales manager | 10 | Household & personal products |
| I13 | Commerce director | 10 | Consumer durables & apparel |
| I14 | Marketing manager | 20 | Household & personal products |
| I15 | VIP customer manager | 3 | Household & personal products |

Table 1. Interviewee characteristics

The format of the semi-structured interviews was built around a set of questions in the following themes: (1) online customer loyalty concept, (2) online customer loyalty factors, (3) customer motivation and (4) gamification elements in online stores (5). The questions were piloted and tested so that they were clear to the research participants.

Data collection has been undertaken throughout 2022. The information collection came to an end when the saturation point was reached (Braun and Clarke, 2021). After the 15th interview, the authors did not search for more experts. Interviews lasted 27–58 minutes and were carried out face-to-face and

via telephone. The anonymity of every informant was assured to gain more trust. The resulting data collected through the interviews comprised around 20,000 words from transcripts of the interviewees' answers. Because of the large volume of datasets, we employed MAXQDA software for data management and content analysis. The results of the interviews were sent back to all the interviewed experts for feedback.

## RESULTS

The interviews started with the experts' understanding of customer loyalty. The majority of experts showed a shared understanding of customer loyalty as repeat purchasing, word-of-mouth and regular purchasing. Some interview participants also described customer loyalty as long-lasting relationships, habitude, high purchase value, and non-search for alternatives.

Experts then identified factors that determine customer loyalty to an online store. The analysis of interviews revealed six groups of factors. These groups are *Purchasing process*, *Price & promotion*, *Communication*, *Products & assortment*, *Quality & reliability*, and *Customers* (Table 2).

| Group of factors | Factors | Industries | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Food & staples retailing | Household & personal products | Consumer durables & apparel | Healthcare equipment & supplies | Technology hardware & equipment | Commercial services & supplies | Professional services | Construction materials |
| Purchasing process | Duration of the order completion | ● | ● | | | ● | ● | ● | |
| | Flow (well-run website) | ● | ● | | | ● | | | |
| | Purchasing process | | ● | | ● | | | ● | |
| | Convenience | ● | | | | | | | |
| | Simplicity of purchase | ● | | | | | | | |
| | Fluent delivery | | | | | | | ● | |
| Price & promotion | Price | ● | ● | | ● | ● | ● | ● | |
| | Discounts | ● | | | ● | | | | |
| | Gifts | | ● | | ● | | | | |
| | Offers | | ● | | | | | | |
| | Loyalty program | | ● | | | | | | |
| | Added value | | ● | | | | | | |
| | Partisan marketing | | | | | | | | ● |
| Communication | Personalized communication | ● | ● | | ● | ● | | | ● |
| | Newsletters | | | | ● | | | ● | |
| | Attempts to create relationships | ● | | | ● | | | | |
| | Duration of reply to queries | ● | | | | ● | | | |
| | Advertising | | ● | | | | | | |
| | Communication on social networks | ● | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Visibility | | • | | | | | | |
| Products & assortment | Product | | • | | | | • | • | |
| | Packaging | • | • | | | | | | |
| | Product quality | • | | | | | | • | |
| | Lack of alternatives | | | • | | | | | |
| | New products | | • | | | | | | |
| Quality & reliability | Service quality | • | • | • | • | • | • | | • |
| | Attractiveness | | • | | | | | | |
| | Reliability of online store | | | | • | | | | |
| | Customer respect | | | | | • | | | |
| Customers | Emotional background | • | • | • | • | • | | • | • |
| | Customer experience | • | • | | | • | • | • | |
| | Customer education initiatives | | • | | | | | | |
| | Customer satisfaction | • | | | | | | | |
| | Willingness to register in a database | | | | | • | | | |
| | Confidence | • | | | | | | | |
| | Reviews | | | | | • | | | |

Table 2. Factors of customer loyalty to e-tailers

There is a general consensus among interviewees that emotional background affects customer loyalty. The customers' emotions come from the easiness of online purchase (for example, modern design of the online store, fewer clicks, quick shopping), service and support quality (response time, politeness of personnel), personalization (name appeal), discounts, marketing communication based on storytelling, creation of specific mood. However, the importance of the emotional background, according to a professional marketing consultant, depends upon the case; for example, "*… if you are searching for a garden hose, it doesn't matter what emotion it tries to convey*" (I10).

The dataset provided a wealth of similar comments showing that e-tailers aiming to increase customer loyalty should ensure high-quality service. The interviewed experts pointed out the necessity for quick service based on relationships. Data analysis revealed the importance of telephone conversations between the e-tailer and the customer:

"*We try to solve every problem; we call and explain. If we don't have a product, we call and explain again. We receive feedback that our communication is pleasant and warm*", I2.

The majority of interviewees pointed out the relevance of the duration of the order completion. It should be as short as possible at the time of purchase:

"*… the customer becomes nervous when he has to spend more time at the online store. The customer expects a fast interaction <…> the purchase could become faster and faster*", I7.

Most interviewed experts deemed a notable role of price in the course for loyalty. The following statement indicates the importance of price:

*"… we have data that approximately 48% of our customers purchase because of the price. Not because of the brand, nor because of the online store. The lowest price offer is the only thing that matters"* (I5)*.*

The margin of the price depends upon the product. According to the marketing manager of the online store offering a wide selection of home appliances and consumer electronics, "… *the critical boundary is 15-20 euros. If the competitor suggests a 15-20 euros lower price, the customer will most likely accept this offer despite the previous unfavorable experience with the retailer. The customer is loyal to the lowest price"* (I5). The accredited marketing consultant assured that "… *even the difference of price as low as 10 cents may become the reason to buy*" (I7).

Some interviewees emphasized customer experience. Customer experience in e-tailing involves fluency in check-in, easiness of navigation, search functionality, the convenience of check-out, payment, delivery, returns, quality of communication (response to the customers' queries), and other procedures during the customer journey.

The interviewees listed many concrete promotion tools essential in fostering loyalty at e-tailers: discounts, newsletters, advertising, offers, and loyalty programs. Discount codes based on a specific number of purchases, signing up for a newsletter, or opening the newsletter encourage constant purchases from the e-tailer. Experts were not sure about the impact of gifts. The following statement indicates that e-tailers might make it a rule to put a gift into the parcel without seriously weighing its effect:

*"Gifts do not avail. We have tried <…> various gifts. For our customers, they do not give effect <…>. We put at least a minimal gift for every customer who reaches a specific amount in purchases. Usually, the gifts are samples or something else <…>. But I haven't noticed that the reason for the customer to return is a gift"*, I2.

The interviews revealed that gamification as a tool for customer motivation is a relevant concern for e-tailers. The majority of experts agreed that gamification might lead to desirable customer behavior. An accredited marketing consultant explained that arousing customer curiosity or encouragement to try a game produces exceptional results. Gamification elements are particularly effective for middle-income customers. Some experts demonstrated hesitation about the possible effects of gamification in motivating customers to certain behaviours. In their opinion, gamification elements are effectless and demotivating; they fail to promote sales. According to a representative of the micro e-tailer, '… *the satisfied customer will purchase with or without a game. If a customer is unsatisfied, he will not come back, and no game will sort it out'*. Some interview participants found gamification elements rather promising; however, their collected statistical data confirms that gamification is useful only for adjusting the behavior of a specific category of customers.

Online marketing experts confirm that most online stores employ gamification elements. The discussions revealed that even those who declined to use gamification, apply specific elements in solitary instances. Gamification elements in online stores are often used not to strengthen customer loyalty but to achieve other goals important for e-tailers: (1) increase the time spent on the website, (2) raise awareness, (3) promote sales of certain products, (4) strengthen brand dissemination and (5) introduce new products.

Experts have mentioned a variety of gamification elements. Some items (e.g. SEO, gifts, discounts and newsletters) emphasized by the survey participants are likely not to be gamified at all. Such insights indicate that particular experts may lack knowledge about the essence of gamification and its elements. Aiming to clear up the confusion, we eliminated elements that do not quite meet the boundaries of gamification from the analysis. The revised set of gamification elements involves treasures, contests, wheels of fortune, points, tests and quizzes. Having a pure set, we could search for deeper insights into applying gamification elements across industries (Table 3).

| Gamification elements | Industries | | | | |
|---|---|---|---|---|---|
| | Household & personal products | Consumer durables & apparel | Technology hardware & equipment | Commercial services & supplies | Construction materials |
| Treasures | ● | | | | |
| Contests | ● | ● | ● | | |
| Wheels of fortune | ● | | | | ● |
| Points | ● | ● | | ● | ● |
| Tests | ● | | | | |
| Quizzes | ● | | | | |

Table 3. Gamification elements across companies of different sizes and industries

Representatives of food & staples retailing, professional services, health care equipment & supplies industries failed to identify any applicable gamification elements. The statement below shows that decision to decline gamification elements may depend upon the industry:

"… *it is forbidden for alcohol. You can't play all these kinds of games with alcohol. This is the reason why we do not use them*", I9.

Research participants were divided into two clusters based on their beliefs in the benefits of gamification. Those who were sure about the advantages, affirmed that gamification strengthens customer loyalty. They also emphasized the increased sales, awareness on the e-tailer side, and educational, financial, and experiential benefits on the customer side. Others were unsure about the usefulness of gamification. They stated that the elements lack innovativeness and relevance, and therefore they burden the organization with additional tasks. These experts described gamification elements as failing to increase customer loyalty in e-tailing contexts.

The interviews revealed that the main obstacle for e-tailers to apply gamification elements in online stores is intense susceptibility to financial resources needed to install new functions and tools and develop IT solutions. A great demand for financial resources considerably extends the payback of gamification elements:

'… *the implementation of the function costs about 2000 euros. It's an extremely long period when it will pay off for us, or maybe it won't pay off at all'*, I3.

There was also some concern that employees shall not have sufficient competencies to develop gamification elements. The data indicated a deficiency in technical resources as well. Even medium and large-sized e-tailers with enough resources deliberately opt not to install the features because of the adequate demand for the product: ('… *people buy anyhow'*, I14). The lack of necessary resources spurs e-tailers to outsource the fulfillment of gamification elements:

"… *large companies do not create these gamification elements. Usually, the creators are small players who work on IT and suggest their service*", I7.

The online marketing experts expressed their attitudes on the potential of gamification elements in fostering customer loyalty. Some participants confirmed the gratuitousness of gamification elements in the market; however, the overall data indicate that professionals' expectations for gamification elements are more positive than negative.

## DISCUSSION

This research is one of the rare empirical studies that used a qualitative approach to explore gamification from the customer loyalty perspective in e-tail. This study initially used a semi-structured interview to determine the current and prospective trends of gamification applications to reach the desired level of customer loyalty to an online store. It revealed that marketing experts envisage the promising potential of gamification elements in fostering customer loyalty. They generally acknowledge the contribution of gamification in promoting customer loyalty by pointing out the benefits they may bring. However, high demand for financial, human, technical, and time resources, questionable profitability, and vague customer interest prevent some e-tailers from even testing the elements. We found empirical evidence that even in medium and large e-tailers that are financially and technologically mature for gamification elements, their application is sparse due to sufficient customer demand for products. The study's findings indicated that a more robust integration of gaming elements into loyalty enhancement systems of e-tailers is expected in the future. The technological potential of gamification elements is rapidly increasing (Candan and Başaran, 2023;

Ulmer *et al.*, 2023). Therefore, developing loyalty-oriented gamification elements at e-tailers becomes key to success in the turbulent online environment.

The outcomes of the current study provide essential knowledge for e-tailers. This paper also supplements previous studies by providing a holistic view of marketers perceptions regarding gamification and it's usefulness in strengthening customer loyalty. However, research settings in other parts of the world may show slightly different results considering the impact of other conditions, such as culture, environment and history.

## CONCLUSION

The research aimed to reveal the potential of gamification elements in pursuing customer loyalty in e-tailers. To date, customer loyalty and gamification have mainly been studied separately. We sought to combine these topics by using a qualitative approach to systematize the opinions of e-tailing experts about the possibilities of gamification elements for developing customer loyalty in e-tail settings.

Based on the qualitative data analysis, we concluded that gamification elements are promising to achieve customer loyalty to online stores; however, the potential of gamification extends far beyond developing customer loyalty. Because online gamification is usually technologically and financially impervious, applying gamification elements mainly depends on the disposable resources (budget, human resources, time, IT) of e-tailers. The insufficiency of these resources may lead to failure in overcoming the challenges that e-tailers face under the rapid expansion of online shopping.

## FUNDING

## REFERENCES

Abou-Shouk, M. and Soliman, M. (2021), "The impact of gamification adoption intention on brand awareness and loyalty in tourism: The mediating effect of customer engagement", Journal of Destination Marketing & Management, Vol. 20, 100559.

Aparicio, M., Costa, C. J. and Moises, R. (2021), "Gamification and reputation: key determinants of e-commerce usage and repurchase intention". Heliyon, Vol.7 No.3, e.06383.

Bauer, J. C., Linzmajer, M., Nagengast, L., Rudolph, T. and D'Cruz, E. (2020), "Gamifying the Digital Shopping Experience: Games without Monetary Participation Incentives Increase Customer Satisfaction and Loyalty", Journal of Service Management, Vol.31 No. 3, pp. 563–95.

Braun, V. and Clarke, V. (2021), "To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales", Qualitative research in sport, exercise and health, Vol.13 No.2, pp. 201-216.

Cachero-Martínez, S. and Vázquez-Casielles, R. (2021), "Building consumer loyalty through e-shopping experiences: The mediating role of emotions", Journal of Retailing and Consumer Services, Vol. 60, pp.102481.

Candan, F. and Başaran, M. (2023), "A meta-thematic analysis of using technology-mediated gamification tools in the learning process", Interactive Learning Environments, pp.1-17.

Demir, M. Ö. and Demir, Z. G. (2020), "Gamification Characteristics' Effects On Brand Loyalty". Yaşar Üniversitesi E-Dergisi, Vol.15 No.58, pp. 270-287.

Eryiğit, G., Bektaş, F., Ali, U. and Dereli, B. (2021), "Gamification of complex morphology learning: the case of Turkish", Computer Assisted Language Learning, pp.1-29.

Fathian, M., Sharifi, H. and Solat, F. (2019), "Investigating the Effect of Gamification Mechanics on Customer Loyalty in Online Stores", Journal of Information Technology Management, Vol.11 No.4, pp.1–23.

Fokina, M. 2023. "Online Shopping Statistics: Ecommerce Trends for 2023." https://www.tidio.com/blog/online-shopping-statistics (accessed 15 April 2023).

Galati, A., Crescimanno, M., Tinervia, S. and Siggia, D. (2016), "Website quality and internal business factors: an empirical investigation in the Italian wine industry", International Journal of Wine Business Research, Vol. 28 No.4, pp.308-326.

Hwang, J. and Choi, L. (2020), "Having Fun While Receiving Rewards?: Exploration of Gamification in Loyalty Programs for Consumer Loyalty", Journal of Business Research, Vol.106, pp. 365–76.

Ilsever, J., Cyr, D. and Parent, M. (2007), "Extending models of flow and e-loyalty", Journal of Information Science and Technology, Vol. 4 No.2, pp. 3-22.

Kunkel, T., D. Lock and Doyle J. P. (2021), "Gamification via Mobile Applications: A Longitudinal Examination of Its Impact on Attitudinal Loyalty and Behavior toward a Core Service", Psychology & Marketing, Vol. 38, pp. 948–964.

Kvicala, D. and Starzyczna, H. (2023), "Loyalty in E-Commerce. In Customer Behaviour in eCommerce: Case Studies from the Online Grocery Market", Springer International Publishing, pp. 49-78.

Lee, B. Ch. (2019). "The Effect of Gamification on Psychological and Behavioral Outcomes: Implications for Cruise Tourism Destinations", Sustainability, Vol.11, No.11, pp. 3002.

Lorestani, E. A. and Khalilli M. (2020), "Using Gamified Packaging to Increase Child Influence on Family Consumption of Healthy Foods", Journal of Packaging Technology and Research, Vol.4, pp. 57–67.

Murillo-Zamorano, L. R., López-Sánchez, J. Á., López-Rey, M. J. and Bueno-Muñoz, C. (2023), "Gamification in Higher Education: The ECOn+ Star Battles." Computers & Education Vol. 194, pp. 104699.

Pansari, A. and Kumar, V. (2017), "Customer engagement: The construct, antecedents, and consequences", Journal of the Academy of Marketing Science, Vol.45 No.3, pp. 294–311.

Rather, R. A. and Sharma, J. (2017), "The effects of customer satisfaction and commitment on customer loyalty: Evidence from the hotel industry", Johar, Vol.12 No.2, pp.41.

Rodrigues, L. F., Oliveira, A. and Rodrigues, H. (2019), "Main gamification concepts: A systematic mapping study", Heliyon, Vol.5 No.7, pp.1993.

Schmah, M. and Ritz A. L. (2021), "How Gamification Can Drive Customer Loyalty", International Journal of Business and Applied Social Science, Vol. 7 No.3, pp. 1–6.

Statista. 2023. "Retail E-Commerce Sales Worldwide from 2014 to 2026 (in Billion US Dollars)." https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales (accessed 12 April 2023).

Ulmer, J., Braun, S., Cheng, C. T., Dowey, S. and Wollert, J. (2023), "A Human Factors-Aware Assistance System in Manufacturing Based on Gamification and Hardware Modularisation", International Journal of Production Research, pp. 1–16.

Xi, N. and Hamari, J. (2020), "Does Gamification Affect Brand Engagement and Equity? A Study in Online Brand Communities", Journal of Business Research, Vol. 109, pp. 449–60.

Yuen, E. F. and Chan, S. S. (2010), "The effect of retail service quality and product quality on customer loyalty", Journal of Database Marketing & Customer Strategy Management, Vol.17, pp. 222-240.

Zhang, L., Shao, Z., Benitez, J. and Zhang, R. (2023), "How to improve user engagement and retention in mobile payment: A gamification affordance perspective", Decision Support Systems, Vol.168, pp. 113941.

Xu, Y. and Huang, J.S. (2015), "Factors influencing cart abandonment in the online shopping process", Social Behavior and Personality: An International Journal, Vol. 43 No. 10, pp. 1617–1627.

Husain, S. (2017), "The determinants of loyalty in online commerce-an exploratory study in India", Electronic Journal of Information Systems in Developing Countries, Vol. 81, No. 1, pp. 1–17.

Hackl, F., Hölzl-leitner, M., Winter-Ebmer, R. and Zulehner, C. (2021), "Successful retailer strategies in price comparison platforms". Managerial and Decision Economics, No. 42, pp. 1284–1305.

Ruiz-Molina, M. E., Gómez-Borja, M. Á. and Mollá-Descals, A. (2021). "Can offline–online congruence explain online loyalty in electronic commerce?" International Journal of Retail and Distribution Management, Vol. 49, No. 9, pp. 1271–1294.

# IMPLEMENTATION OF CORPORATE SOCIAL RESPONSIBILITY (CSR) IN FASHION SMALL AND MEDIUM-SIZED ENTERPRISES IN KOSOVO: MANAGERS' PERSPECTIVE

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## ABSTRACT

This research responded to CSR scholars' call for future papers to investigate CSR implementation across different contexts. It studied CSR implementation in small and medium-sized enterprises in the fashion industry in Kosovo. CSR implementation among small and medium-sized enterprises (SMEs) has not received reciprocal attention in academia as large organisations. Hence, this research explored the perceptions of fashion SME managers/owners about this phenomenon. Country-wise, this research focused on a developing country in South-East Europe – Kosovo, which scholars have rarely covered. It studied the phenomenon by employing six open-ended, semi-structured, face-to-face elite interviews with owners/managers of small and medium-sized fashion enterprises. Theoretically, this research contributed to CSR in developing countries and CSR in small and medium-sized enterprises literature. It also contributed to the development of CSR implementation literature. It showed that the lack of CSR implementation in Kosovo emerges from the scarcity of national information on CSR and the absence of this concept in the nation's mentality. Practically, this research provided guidelines to Kosovar fashion SMEs unaware and inexperienced with CSR adaptation.

*Keywords: Corporate Social Responsibility (CSR), Corporate Social Responsibility Implementation, Small and Medium Enterprises (SMEs), Developing Country, Kosovo, Managers'/Owners' Perceptions, Qualitative Research, Elite Interviews*

## INTRODUCTION

The concept of corporate social responsibility (CSR) has gained attention in academia and across industries since the 1950s (Jamali and Carroll, 2017; Fatima and Elbanna, 2023). The multiple benefits of CSR (corporate reputation, customer loyalty and satisfaction and better economic performance, among others; Ho *et al.,* 2021; Khan *et al.,* 2021) have led numerous businesses to adopt CSR (Luo and

Du, 2015; Donia *et al.*, 2019) and several scholars to investigate it (Edinger-Schons *et al.*, 2019). Throughout the years, scholars have focused on multiple dimensions (economic, social and environmental) and disciplines (business, management, law, economics, ethics and sociology) of CSR (Carroll, 2021). Accordingly, Carroll (2021) considers CSR a mature concept. Fatima and Elbanna (2023), however, state that "its implementation has not received as much attention (p. 105)" among scholars. Similar to Fatima and Elbanna (2023), scholars like Kuo *et al.* (2021) and Tarnovskaya *et al.* (2022) recommend additional research on CSR implementation.

CSR implementation has started to gain sustained attention among scholars since the preliminary insights of the special issue of the Journal of Business Ethics by Lindgreen *et al.* (2009). The importance of this process has been mirrored across papers (Osagie *et al.*, 2022; Yang and Jiang, 2023). Scholars have focused on various industries (e.g., construction (Zhang *et al.*, 2019) and airline industry (Kuo *et al.*, 2021)) and regions (Tarnovskaya *et al.*, 2022). Yet, Zhang *et al.* (2019) and Fatima and Elbanna (2023) recommend future research to investigate further the drivers, motivations, and barriers to CSR implementation across industry sectors and countries. Accordingly, this research focused on CSR implementation in a well-known industry sector (fashion) and a less-studied region (South-East Europe). It investigated this process through managers' perceptions, as managers play a significant impact in positioning the enterprises and taking decisions (Iglesias *et al.*, 2020; Úbeda-García *et al.*, 2021).

To gain a deeper understanding of how context affects the implementation of CSR, Fatima and Elbanna (2023) recommend future research exploring less researched regions. This research, thus, focused on a less investigated developing country in the South-East Europe region – Kosovo. Size-wise, this research focused on small and medium-sized enterprises (SMEs) as CSR scholars indicate it is vital to understand how and why SMEs implement CSR (Lythreatis *et al.*, 2019; Chen *et al.*, 2022). Industry-wise, this research focused on fashion because of its significant contribution to global economic and environmental issues (Szegedi *et al.*, 2023). Scholars have investigated this industry across different countries (Pedersen *et al.*, 2018; Ali and Kaur, 2021). Developing countries have received more consideration from scholars as companies in this industry have transferred to them, given their cheap workforce and dense population (Laudal, 2010; Akbar and Deegan, 2020). While African and Asian countries have dominated the field (Li *et al.*, 2020), developing countries from SEE have seldom been studied (Xharavina *et al.*, 2020).

Accordingly, this research addressed the following question: (RQ) How do fashion SME managers/owners in Kosovo implement CSR? Specifically, it aimed to 1) understand the perceptions of fashion SME managers/owners on CSR implementation, 2) identify the implementation of CSR by

Kosovar fashion SME managers/owners, and 3) explain the opportunities and challenges that CSR implementations offer to fashion SMEs in Kosovo. It contributed theoretically to CSR in SMEs, CSR in developing countries and CSR in fashion industry literature. From a practical standpoint, this study provided valuable insight to those responsible for CSR in SMEs in the fashion industry in Kosovo about how to construct CSR activities successfully.

## RELEVANT LITERATURE

*Corporate Social Responsibility Implementation*

A decade ago, Angus-Leppan *et al.* (2010) referred to CSR implementation as a 'black box' in the literature. Since Lindgreen *et al.* (2009) paved the way for CSR implementation in a Journal of Business Ethics special issue, several scholars have embraced it (Osagie *et al.,* 2022; Fatima and Elbanna, 2023; Yang and Jiang, 2023). In the last decade, they have investigated the process across different organisations and ownership structures (Garanina and Aray, 2021). Scholars have recognised the impact of distinct contexts and organisations' constraints on implementing CSR (Fatima and Elbanna, 2023). They have claimed that CSR implementation should fit the organisational identity, organisational culture, strategic goals and social norms (Tourky *et al.*, 2020).

Regardless of the embracement of this process from academia, Fatima and Elbanna (2023) claim that the CSR field lacks the conceptualisation of CSR implementation. They call future scholars to attempt conceptualising it, as most studies have sidestepped the conceptualisation of this process. Helmig *et al.* (2016) and Fatima and Elbanna (2023) are among the few scholars who have defined CSR implementation in their work. Helmig *et al.* (2016) have described it as "the managerial perspective of how to put a certain CSR strategy into practice" (p. 155)". While Fatima and Elbanna (2023) have referred to it as the "process that an organization undertakes to increase the awareness levels of CSR issues and CSR strategies, embed CSR values within the organization, communicate CSR initiatives internally and externally, and evaluate the progress of CSR strategies (p. 106)".

*Corporate Social Responsibility Implementation Process (Steps)*

In terms of implementation, several scholars have discussed and investigated implementation steps. Maon *et al.* (2009) claimed that CSR implementation constitutes nine steps: (1) raising CSR awareness, (2) assessing organisational purpose in a societal context, (3) establishing a CSR definition and vision, (4) assessing the current status of CSR, (5) developing a CSR strategy, (6) implementing the CSR strategy, (7) communicating about CSR strategy, (8) evaluating CSR strategy, and (9) institutionalising CSR policy. Baumann-Pauly *et al.* (2013) explained CSR implementation through three dimensions: commitment to CSR, embedding CSR, and external collaboration. Fatima and Elbanna (2023)

considered the steps of both Maon *et al.* (2009) and Baumann-Pauly *et al.* (2013). They recommended four dimensions: (1) CSR awareness (organisation's commitment to CSR), (2) CSR communication and (3) CSR embedding, and (4) CSR evaluation (Fatima and Elbanna, 2023). Kim *et al.* (2013) suggested that a company should consider three aspects when implementing CSR: (a) CSR intentions (whether they are short-term or they intend to promote the company), (b) CSR practices (whether they are normative or instrumental to the strategic needs of the company), and (c) CSR nature (whether it should be explicit or implicit).

Up until now, most CSR scholars have focused on CSR awareness or CSR communication (Pomering and Dolnicar, 2009; Baumann-Pauly *et al.*, 2013; Lee *et al.*, 2019). They consider CSR awareness the bedrock of the CSR implementation process (Fatima and Elbanna, 2023). According to Lee *et al.* (2019), CSR awareness refers to familiarity and knowledge of the company about CSR and its practices. Besides CSR awareness, scholars claim CSR communication is significant for companies to communicate their CSR activities actively (Baumann-Pauly *et al.*, 2013). Communication of CSR practices is challenging as consumers tend to become suspicious about the information and sceptical about the motives (Pomering and Dolnicar, 2009). Companies, therefore, need to invest strategically in CSR practices; they need to modify their internal policies and genuinely implement CSR practices to gain widespread support from their stakeholders (Zerbini, 2017). Most CSR scholars, however, have neglected the other dimensions of CSR implementation, precisely CSR embedding and CSR evaluation (Fatima and Elbanna, 2023). Fatima and Elbanna (2023) suggest future studies explore these two dimensions.

This research adopted the definition and process of CSR implementation that Fatima and Elbanna (2023) recommended. While their explanation has enriched the literature in this field, Fatima and Elbanna (2023) suggest CSR scholars should investigate the process of CSR implementation through multi-level analyses, theoretical underpinnings and diversification of the geographical location through different regions in future research (Fatima and Elbanna, 2023). This research followed Fatima and Elbanna's (2023) recommendation and decided to investigate this issue through multi-level analysis (company (manager) and country (Kosovo) levels), theoretical underpinning (stakeholder theory) and diversification of the geographical location (Kosovo).

*Corporate Social Responsibility Implementation from Managers' Perspective*

Úbeda-García *et al.* (2021) state that managers "play a critical role when it comes to making their organisation more socially and environmentally responsible by applying the concept of CSR (p. 60)". Accordingly, several scholars have focused on understanding managers' perceptions of the CSR concept throughout the years (Lindgreen *et al.*, 2009; Úbeda-García *et al.*, 2021). Lindgreen *et al.* (2009) claim that the managers' perceptions are significant because of the managers' impact in positioning the

enterprises and taking decisions. Iglesias *et al.* (2020) state that the significance consumers place on the CSR concept also enhances the importance of managers' perceptions in the CSR field. Fatima and Elbanna (2023) state that regardless of the attention that managers' perspectives on the CSR concept have received, managers' perspectives on the CSR implementation have not received as much attention.

Additionally, scholars who researched this matter typically have investigated large and multinational companies (for instance, Chaudhri (2016) and Osagie *et al.* (2016)). They have focused on the size and type of the enterprise and the CSR practices (formal or informal) in the organisations' practices (Chaudhri, 2016; Lindgreen *et al.*, 2009). Managers of SMEs differ from managers of large and multinational companies, as SMEs have different organisational structures and features (Lähdesmäki *et al.*, 2019) and face other issues and barriers (Tran and Jeppesen, 2016). Their understanding of CSR implementation differs from managers of large and multinational companies (Elhajjar and Ouaida, 2020; Thanh and Podruzsik, 2018).

*Corporate Social Responsibility Implementation in Small and Medium-sized Enterprises*

Literature shows that until now, few studies have focused on CSR implementation in small and medium-sized enterprises (Li *et al.*, 2016; Stoian and Plakoyiannaki, 2023). Scholars like Stoian and Plakoyiannaki (2023) and Szegedi *et al.* (2023) highlight that SMEs provide a thought-provoking ground for future studies focusing on managers' perceptions of CSR implementation. Accordingly, this research considered this call and decided to investigate the understanding of SME managers about CSR and its implementation in different contexts (country and industry context).

Until recently, SMEs have not been in the spotlight like large companies (Jamali *et al.*, 2017; Lythreatis *et al.*, 2019), but they are increasingly expected to implement CSR (Hamann *et al.*, 2017). Scholars believe that SMEs have a less formalised application of CSR; they are less likely to generate codes of conduct or adhere to CSR agreements and standards (Spence, 2016). SMEs implement such informal activities because integrating CSR practices is expensive and their budget is limited; thus, it is easier for SMEs to share and discuss such activities in informal settings. Secondly, SMEs lack the economic resources to ensure proper documentation of their CSR practices; they have low visibility, low media attention, and receive less criticism (Baumann-Pauly *et al.*, 2013; Jamali *et al.*, 2017).

*Corporate Social Responsibility Implementation in Kosovo*

Country-wise, most CSR scholars have focused their research on developed countries (Bhatia and Makkar, 2020). Accordingly, businesses (typically large businesses) in these countries have immersed CSR practices into their core (Jamali and Carroll, 2017), and they refer to CSR as a crucial aspect of business operations (Sharma, 2020). Scholars and practitioners have recently shifted their focus

towards developing countries (see Jamali and Karam, 2018). Studies have found that, compared to developed countries, CSR in developing countries lacks institutionalisation (Jamali and Neville, 2011; Soundararajan *et al.*, 2018), is less formalised and experiences greater institutional complexity (Marquis and Raynard, 2015; Khan *et al.*, 2021).

According to Khan *et al.*, 2021, CSR in developing countries offers fertile grounds for investigation. This research, thus, focused on Kosovo, a less-studied developing country which has experienced transitional processes and incompatible economic contexts (Grabner-Kräuter *et al.*, 2023). The few studies conducted in Kosovo have used interchangeable notions to describe CSR. Most studies are published in local conference proceedings and journals with few exceptions (e.g., Grabner-Kräuter *et al.*, 2021; Grabner-Kräuter *et al.*, 2023). These studies show that CSR is at an emergent stage in the country; companies have just started recognising the significance of CSR (Grabner-Kräuter *et al.*, 2021). This outcome is unexpected as regional and international actors have undertaken numerous actions to promote sustainable development in the country (RCC, 2018). The few companies employing CSR are typically large-sized and in the bank sector (Levkov and Palamidovska-Sterjadovska, 2019). Literature shows that a few papers have focused on the implementation process. The ones investigating this process mainly researched large-sized and international-based companies (e.g., Levkov and Palamidovska-Sterjadovska, 2019). According to Grabner-Kräuter *et al.* (2021;2023), Kosovar large companies mainly focus their CSR activities towards voluntary, altruistic actions (e.g., sponsorship and charitable giving). To the researchers' knowledge, the literature presents no evidence of papers focusing on Kosovar small and medium-sized companies.

## METHODOLOGY

*Research Design*

This research followed an interpretivist approach. This approach offered the opportunity to gather more comprehensive insights and understand new knowledge (Gephart, 2004; Zachariadis *et al.*, 2015) about the phenomenon of corporate social responsibility. Scholars in the field of CSR perceive the interpretivist approach as informative (Crane *et al.*, 2018), yet, they argue that its application is scarce. The interpretivist studies are, therefore, desired because academia lacks their utilisation, and they yield insights into CSR (Aguinis and Glavas, 2019). This research adopted a mono-qualitative method. Precisely, it employed the interview method to explore the phenomenon of interest. The purpose of this study was exploratory. In terms of the time horizon, this research was cross-sectional.

*Data Collection*

This research employed elite interviews with owners/managers to understand the perception and procedures within (1) SMEs in (2) Kosovo in (3) the fashion industry. This method is suitable when the research objectives focus on understanding views, experiences and processes. An in-depth interview, in particular, is appropriate for understanding phenomena constructed by owners and managers (otherwise known as the business elite; Ma et al., 2021; Solarino and Aguinis, 2021). This research followed a constructionist construction. Precisely, it employed six semi-structured interviews. This structure helped the researcher gather authentic data (Ma *et al.*, 2021). Scholars argue that it is the most suitable structure for in-depth elite interviews (Ma *et al.*, 2021; Solarino and Aguinis, 2021) because it balances control and flexibility (Ma *et al.*, 2021). The researchers asked open-ended questions to offer the interviewees a free expression of their views (Solarino and Aguinis, 2021). Given the semi-structured nature, the researchers removed, expanded and reorganised the questions depending on the path of the interview. The researchers contacted the elite through phone calls, Instagram messages and third-party contact. They were provided with all the necessary information about the research. All the interviews were conducted face-to-face in the offices of the managers and owners, and they were audio recorded. They were conducted in the Albanian language and afterwards translated into English. Participants were informed in advance as they might felt unpleasant and unwilling to discuss freely the issues asked by the interviewer. This research preserved the participants' privacy using pseudonyms like M1, M2, and M3. It considered this method the ideal choice for an in-depth understanding of the perceptions of SME managers/owners about the phenomenon of CSR and CSR practices. This method helped the researcher achieve the following research objectives: explore 1) owners'/managers' understanding of the CSR implementation and 2) the CSR practices and strategies their companies implement.

*Sample*

This research attempted to attain such an understanding through the non-probability sampling technique. Specifically, it utilised purposive sampling (often called judgmental sampling) for the country selection (Kosovo). The sampling strategy was also purposive for the manager selection. This strategy is common in qualitative CSR studies (Öberseder *et al.*, 2011; Bihari and Shajahan, 2023). The sample universe consisted of small or medium-sized enterprises owners/managers who design, create and sell clothes online or through their stores in the fashion industry in Kosovo. This research adopted an individual-based design for elite interviewing (Ma *et al.*, 2021). It interviewed different managers from different firms. This technique helped the researcher identify and select the most suitable SME owners/managers. For this method, the researcher engaged in stratified purposeful sampling as this

technique offered the opportunity to capture different sizes of companies (small and medium) and different company purposes (slow and fast fashion).

*Data Analysis*

The interpretation of the data was accomplished by utilising a thematic analysis (TA). The thematic analysis offered the opportunity to grasp the views and opinions of participants about particular issues (Clarke and Braun, 2016). Most importantly, it created worthwhile findings rather than solely summarising the collected data (Clarke and Braun, 2016). This research followed the Braun and Clarke (2006; 2019) version of reflexive thematic analysis. This study applied Braun and Clarke's (2006) six-phase framework. "(1) Familiarising yourself with your data, (2) Generating initial codes, (3) Searching for themes, (4) Reviewing themes, (5) Defining and naming themes and (6) Producing the report (p. 87)". As Braune and Clark (2020) recommended, the researchers followed an iterative application. The researchers interpreted the data manually.

## FINDINGS

*Managers' Understanding of Corporate Social Responsibility Implementation*

More than a decade ago, Angus-Leppan *et al.* (2010) considered CSR implementation a 'black box' in the literature. While many scholars might agree that this statement might not be suited anymore (Tourky *et al.*, 2020; Osagie *et al.*, 2022), it is still relevant to the process of CSR implementation in Kosovo. This research found that fashion small and medium-sized enterprises (SMEs) in Kosovo do not implement CSR thoroughly. Only one of the interviewed companies has intentionally embedded CSR into their organisation. Similar to scholars who investigated small and medium-sized enterprises in other developing countries (Khan *et al.*, 2021; Soundararajan *et al.*, 2018), CSR among SMEs in Kosovo lacks institutionalisation and formalisation, and it experiences institutional complexity.

Like managers of large companies in Kosovo (Grabner-Kräuter *et al.*, 2021), managers/owners of fashion SMEs in Kosovo are familiar with their social responsibilities towards stakeholders (mainly society and employees). Unlike them, fashion SME managers/owners do not necessarily use the CSR notion when referring to such responsibilities. They mainly focus their activities on legal (employee-related) and philanthropic dimensions. SME managers/owners in the fashion industry have just begun acknowledging the importance of CSR and its implementation (similar to other sector industries in the country; Grabner-Kräuter *et al.*, 2021). They are pressured to apply CSR activities by the CSR forum (Kosovo CSR Network), international NGOs, associations (e.g., the American Chamber of Commerce in Kosovo), and regional and international actors (such as the EU and the UN).

M2 (owner of a small-sized social enterprise) stated, "*I was first informed about CSR and its several benefits through Kosovo CSR Network*". M5 (owner of a small-sized enterprise) claimed, "*I became aware*

*of our responsibilities towards employees and society when I first participated in an EU-funded program a couple of years ago*." M1 (manager of a medium-sized enterprise), on the other hand, stated, "*I was introduced to most of the social responsibilities by an Italian company with which our company collaborated for two years… Our company was obliged to fulfil several CSR-related requirements before signing the collaboration contract*". Alike Hamann *et al.* (2017) findings, managers'/owners' responses demonstrate the increasing pressure on SMEs to adopt responsible business practices.

*Corporate Social Responsibility Implementation Process*

Regarding CSR implementation, all the interviewed SME managers/owners, besides M4 (manager of a medium-sized enterprise), understood the implementation process as a combination of several activities focused towards different stakeholders. Similar to Fatima and Elbanna (2023), M4 referred to CSR implementation as a process that requires the embeddedness of CSR values within the company. Accordingly, M4 stated, "*CSR implementation is a process that urges the involvement of CSR in the company and its values… it is a process that encourages a responsible business and benefits the company*". Managers'/owners' understanding of CSR implementation depends on the CSR dimensions that their enterprise primarily focuses on. For instance, M5 referred to CSR implementation as "*activities taken from the company to address the concerns of employees and society*". Similar to M5, M1 mentioned the "*actions taken by the enterprise to maintain fair employment practices that are required by the state*". M3 stated that this process involves "*strategies employed to tackle environmental issues*".

The process of CSR implementation across fashion SMEs in Kosovo is restricted to particular (convenient) actions taken by the company. All managers/owners, besides M4, neglect essential steps of the CSR implementation process, such as CSR communication and CSR evaluation. While these SMEs are aware of CSR and embed CSR into their activities, this research (like Fatima and Elbanna (2023)) deemed the neglected steps too vital to be ignored. CSR implementation as a process among these companies does not occur willingly. It mainly occurs due to the stakeholders' pressure to act responsibly. Stakeholder pressure comes from domestic, regional and international levels. M2 stated, "*Kosovo is the only country in the region that does not have CSR national legislation*". Yet, managers/owners claimed they must follow several laws (indirectly related to CSR) to operate in Kosovo. M5 expressed, "*We would be willing to implement several CSR practices if awarded for our actions*". While Kosovo's government does not offer prizes or awards to socially responsible companies, the Kosovo CSR Network holds an annual ceremony celebrating the most accountable companies, and it encourages small and medium-sized enterprises to adopt CSR practices into their operations (Kosovo CSR Network, 2023).

*Benefits and Challenges of Corporate Social Responsibility Implementation*

The interviewees in this research claimed that they adopted CSR practices because of their benefits towards society and their companies. M5 stated, "*A company can greatly gain from CSR activities as they offer better organisational value and positively impact brand loyalty… it gains loyal customers and loyal employees, as such activities create job satisfaction and increase employees' productivity and commitment".* M1 added, *"such practices helped our company attract loyal employees, a desirable group for any business [I assume]".* On the other hand, M2 stated, "*CSR implementation helps address societal challenges… for our company, it has helped tackle women empowerment".* Similar to Baumann-Pauly *et al.* (2013) and Jamali *et al.* (2017), M6 acknowledged the potential challenges CSR implementation presents to SMEs. M6 stated, "It *is expensive to embed CSR into the company's everyday operations, and the size of our company restricts the budget".* Contrary to Jamali *et al.* (2017), M6 did not consider low visibility and low media attention as issues for their company. M2 stated, "While *this process may present challenges, especially in our country, I strongly believe that the potential benefits to the society and the company outweigh the challenges".* M2, among others, claimed, "*I encourage any business in Kosovo to see beyond their profit goals and employ socially responsible activities into their operations".*

## DISCUSSION AND CONCLUSION

This study responded to CSR scholars' call about the investigation of CSR and its implementation across different contexts (Fatima and Elbanna, 2023). It explored the perceptions of small and medium-sized enterprise managers/owners about CSR implementation in the fashion industry in Kosovo. Until now, a few studies have focused solely on SMEs (Hamann *et al.*, 2017; Jamali *et al.*, 2017). Thus, through exploring perceptions of fashion SME managers, this paper contributed to CSR in SME literature (a developing field). This study covered Kosovo, a region which has been rarely investigated and has rarely grabbed the attention of CSR scholars (Grabner-Kräuter *et al.,* 2021). Focusing on Kosovo, this research provided the literature on CSR in developing countries. Mainly, it contributed to the CSR implementation literature, as, to researchers' knowledge, no previous researchers have considered managers'/owners' perceptions of CSR implementation undertaken by SMEs in Kosovo (Fatima and Elbanna, 2023).

Although familiar with their social responsibilities towards stakeholders, managers/owners of fashion SMEs in Kosovo do not use the CSR term for social responsibilities. Unlike large-sized companies in some sectors (Grabner-Kräuter *et al.*, 2021), fashion SMEs in Kosovo lack CSR implementation in their operations but acknowledge its benefits towards the company and society. This research showed that the lack of CSR implementation in Kosovo emerges from the scarcity of national information on CSR and the absence of this concept in the nation's mentality. Thus, it concluded that CSR awareness is the

bedrock of the CSR implementation process, as Fatima and Elbanna (2023) stated, and it indicated that the national context impacts CSR implementation.

Theoretically, this research explored and attempted to conceptualise CSR implementation in different contexts (company size: SMEs; industry: fashion industry; country: Kosovo). It presented the steps, challenges and benefits of the CSR application faced by fashion SMEs in Kosovo. Practically, this research provided guidelines to Kosovar fashion SMEs unaware and inexperienced with CSR adaptation. It also provided information about the CSR environment in the country and identified the potential benefits and challenges.

This research is part of a broad investigation focused on several other countries in the South-East Europe region. While this research focused solely on Kosovo, subsequent journal and conference papers of the researchers will deliver more detailed findings in other countries in the South-East Europe region. Future studies can compare and contrast the perceptions of managers/owners about CSR implementation in developed and developing countries, or they can investigate consumers' perceptions face-to-face (or through any other approach) about CSR implementation. Lastly, future studies can also study other countries in the region, such as Albania, Montenegro or Croatia, and they can cover different industries (besides the fashion industry).

## REFERENCES

Aguinis, H. and Glavas, A. (2019). "On corporate social responsibility, sensemaking, and the search for meaningfulness through work", Journal of Management, Vol. 45 No. 3, pp. 1057-1086.

Akbar, S. and Deegan, C. (2021). "Analysis of corporate social disclosures of the apparel industry following crisis: an institutional approach", Accounting & Finance, Vol. 61 No. 2, pp. 3565-3600.

Ali, S.S. and Kaur, R. (2021). "Effectiveness of corporate social responsibility (CSR) in implementation of social sustainability in warehousing of developing countries: A hybrid approach", Journal of Cleaner Production, Vol. 324, pp. 129-154.

Angus-Leppan, T., Metcalf, L. and Benn, S. (2010). "Leadership styles and CSR practice: An examination of sensemaking, institutional drivers and CSR leadership", Journal of Business Ethics, Vol. 93, pp. 189-213.

Baumann-Pauly, D., Wickert, C., Spence, L.J. and Scherer, A.G. (2013). "Organizing corporate social responsibility in small and large firms: Size matters", Journal of Business Ethics, Vol. 115, pp. 693-705.

Bhatia, A. and Makkar, B. (2020). "CSR disclosure in developing and developed countries: a comparative study", Journal of Global Responsibility, Vol. 11 No. 1, pp. 1-26.

Braun, V. and Clarke, V. (2006). "Using thematic analysis in psychology", Qualitative Research in Psychology, Vol. 3 No. 2, pp. 77-101.

Braun, V. and Clarke, V. (2016). "(Mis) conceptualising themes, thematic analysis, and other problems with Fugard and Potts'(2015) sample-size tool for thematic analysis", International Journal of Social Research Methodology, Vol. 19 No. 6, pp. 739-743.

Carroll, A.B. (2021). "Corporate social responsibility: Perspectives on the CSR construct's development and future", Business & Society, Vol. 60 No. 6, pp. 1258-1278.

Chaudhri, V. (2016). "Corporate social responsibility and the communication imperative: Perspectives from CSR managers", International Journal of Business Communication, Vol. 53 No. 4, pp. 419-442.

Crane, A., Henriques, I. and Husted, B.W. (2018). "Quants and poets: Advancing methods and methodologies in business and society research", Business & Society, Vol. 57 No. 1, pp. 3-25.

Donia, M.B., Ronen, S., Tetrault Sirsly, C.A. and Bonaccio, S. (2019). "CSR by any other name? The differential impact of substantive and symbolic CSR attributions on employee outcomes", Journal of Business Ethics, Vol. 157, pp. 503-523.

Edinger-Schons, L.M., Lengler-Graiff, L., Scheidler, S. and Wieseke, J. (2019). "Frontline employees as corporate social responsibility (CSR) ambassadors: A quasi-field experiment", Journal of Business Ethics, Vol. 157, pp. 359-373.

Elhajjar, S. and Ouaida, F. (2020). "Identifying the drivers of resistance to corporate social responsibility: the case of Lebanese SMEs", Qualitative Research in Organizations and Management: An International Journal, Vol. 15 No. 4, pp. 543-560.

Fatima, T. and Elbanna, S. (2023). "Corporate social responsibility (CSR) implementation: A review and a research agenda towards an integrative framework", Journal of Business Ethics, Vol. 183 No. 1, pp. 105-121.

Garanina, T. and Aray, Y. (2021). "Enhancing CSR disclosure through foreign ownership, foreign board members, and cross-listing: does it work in Russian context?", Emerging Markets Review, Vol. 46, pp. 100754.

Gephart Jr, R.P. (2004). "Qualitative research and the Academy of Management Journal", Academy of Management Journal, Vol. 47 No. 4, pp. 454-462.

Grabner-Kräuter, S., Breitenecker, R.J. and Tafolli, F. (2021). "Exploring the relationship between employees' CSR perceptions and intention to emigrate: Evidence from a developing country", Business Ethics, the Environment & Responsibility, Vol. 30, pp. 87-102.

Grabner-Kräuter, S., Tafolli, F. and Breitenecker, R.J. (2023). "Consequences of public sector employees' CSR perceptions in a developing country: Organizational benefits and beyond", Public Performance & Management Review, Vol. 46 No. 2, pp. 472-511.

Hamann, R., Smith, J., Tashman, P. and Marshall, R.S. (2017). "Why do SMEs go green? An analysis of wine firms in South Africa", Business & Society, Vol. 56 No. 1, pp. 23-56.

Helmig, B., Spraul, K. and Ingenhoff, D. (2016). "Under positive pressure: How stakeholder pressure affects corporate social responsibility implementation", Business & Society, Vol. 55 No. 2, pp. 151-187.

Hine, J.A. and Preuss, L. (2009). ""Society is out there, organisation is in here": On the perceptions of corporate social responsibility held by different managerial groups", Journal of Business Ethics, Vol. 88, pp. 381-393.

Ho, J., Lu, C. and Lucianetti, L. (2021). "Does engaging in corporate social responsibility activities influence firm performance? The moderating effects of risk preferences and performance measurement systems", Management Decision, Vol. 59 No. 13, pp. 15-37.

Iglesias, O., Markovic, S., Bagherzadeh, M. and Singh, J.J. (2020). "Co-creation: A key link between corporate social responsibility, customer trust, and customer loyalty", Journal of Business Ethics, Vol. 163, pp. 151-166.

Jamali, D. and Carroll, A. (2017). "Capturing advances in CSR: Developed versus developing country perspectives", Business Ethics: A European Review, Vol. 26 No. 4, pp. 321-325.

Jamali, D. and Neville, B. (2011). "Convergence versus divergence of CSR in developing countries: An embedded multi-layered institutional lens", Journal of Business Ethics, Vol. 102, pp. 599-621.

Jamali, D., Lund-Thomsen, P. and Jeppesen, S. (2017). "SMEs and CSR in developing countries", Business & Society, Vol. 56 No. 1, pp. 11-22.

Khan, S.A.R., Yu, Z. and Umar, M. (2021). "How environmental awareness and corporate social responsibility practices benefit the enterprise? An empirical study in the context of emerging economy", Management of Environmental Quality: An International Journal, Vol. 32 No. 5, pp. 863-885.

Kim, C.H., Amaeshi, K., Harris, S. and Suh, C.J. (2013). "CSR and the national institutional context: The case of South Korea", Journal of Business Research, Vol. 66 No. 12, pp. 2581-2591.

Kuo, T.C., Chen, H.M. and Meng, H.M. (2021). "Do corporate social responsibility practices improve financial performance? A case study of airline companies", Journal of Cleaner Production, Vol. 310, pp. 127-380.

Lähdesmäki, M., Siltaoja, M. and Spence, L.J. (2019). "Stakeholder salience for small businesses: A social proximity perspective", Journal of Business Ethics, Vol. 158, pp. 373-385.

Laudal, T. (2010). "An attempt to determine the CSR potential of the international clothing business", Journal of Business Ethics, Vol. 96 No. 1, pp. 63-77.

Lee, S.Y., Zhang, W. and Abitbol, A. (2019). "What makes CSR communication lead to CSR participation? Testing the mediating effects of CSR associations, CSR credibility, and organization–public relationships", Journal of Business Ethics, Vol. 157, pp. 413-429.

Levkov, N. and Palamidovska-Sterjadovska, N. (2019). "Corporate Social Responsibility communication in Western Balkans banking industry: A comparative study", Management Research and Practice, Vol. 11 No. 3, pp. 18-30.

Li, F., Li, T. and Minor, D. (2016). "CEO power, corporate social responsibility, and firm value: A test of agency theory", International Journal of Managerial Finance, Vol. 12 No. 5, pp. 611-628.

Li, Y., Pinto, M.C.B. and Diabat, A. (2020). "Analyzing the critical success factor of CSR for the Chinese textile industry", Journal of Cleaner Production, Vol. 260, pp. 120878.

Lindgreen, A., Swaen, V. and Maon, F. (2009). "Introduction: Corporate social responsibility implementation", Journal of Business Ethics, Vol. 85, pp. 251-256.

Luo, X. and Du, S. (2015). "Exploring the relationship between corporate social responsibility and firm innovation", Marketing Letters, Vol. 26, pp. 703-714.

Lythreatis, S., Mostafa, A.M.S. and Wang, X. (2019). "Participative leadership and organizational identification in SMEs in the MENA Region: Testing the roles of CSR perceptions and pride in membership", Journal of Business Ethics, Vol. 156, pp. 635-650.

Ma, S., Seidl, D. and McNulty, T. (2021). "Challenges and practices of interviewing business elites", Strategic Organization, Vol. 19 No. 1, pp. 81-96.

Maon, F., Lindgreen, A. and Swaen, V. (2009). "Designing and implementing corporate social responsibility: An integrative framework grounded in theory and practice", Journal of Business Ethics, Vol. 87, pp. 71-89.

Marquis, C. and Raynard, M. (2015). "Institutional strategies in emerging markets", Academy of Management Annals, Vol. 9 No. 1, pp. 291-335.

Öberseder, M., Schlegelmilch, B.B. and Gruber, V. (2011). "Why don't consumers care about CSR?": A qualitative study exploring the role of CSR in consumption decisions", Journal of Business Ethics, Vol. 104, pp. 449-460.

Osagie, E.R., Wesselink, R., Blok, V., Lans, T. and Mulder, M. (2016). "Individual competencies for corporate social responsibility: A literature and practice perspective", Journal of Business Ethics, Vol. 135, pp. 233-252.

Osagie, E., Wesselink, R., Blok, V. and Mulder, M. (2022). "Learning organization for corporate social responsibility implementation: Unravelling the intricate relationship between organizational and operational learning organization characteristics", Organization & Environment, Vol. 35 No. 1, pp. 130-153.

Pedersen, E.R.G. and Gwozdz, W. (2014). "From resistance to opportunity-seeking: Strategic responses to institutional pressures for corporate social responsibility in the Nordic fashion industry", Journal of Business Ethics, Vol. 119, pp. 245-264.

Pedersen, E.R.G., Gwozdz, W. and Hvass, K.K. (2018). "Exploring the relationship between business model innovation, corporate sustainability, and organisational values within the fashion industry", Journal of Business Ethics, Vol. 149, pp. 267-284.

Pomering, A. and Dolnicar, S. (2009). "Assessing the prerequisite of successful CSR implementation: are consumers aware of CSR initiatives?", Journal of Business Ethics, Vol. 85, pp. 285-301.

Sharma, A. (2020). "Sustainability research in business-to-business markets: An agenda for inquiry", Industrial Marketing Management, Vol. 88, pp. 323-329.

Solarino, A.M. and Aguinis, H. (2021). "Challenges and best-practice recommendations for designing and conducting interviews with elite informants", Journal of Management Studies, Vol. 58 No. 3, pp. 649-672.

Soundararajan, V., Spence, L.J. and Rees, C. (2018). "Small business and social irresponsibility in developing countries: Working conditions and "evasion" institutional work", Business & Society, Vol. 57 No. 7, pp. 1301-1336.

Spence, L.J. (2016). "Small business social responsibility: Expanding core CSR theory", Business & Society, Vol. 55 No. 1, pp. 23-55.

Stoian, M.C. and Plakoyiannaki, E. (2023). "Understanding international CSR in SMEs", Journal of Small Business Management, pp.1-37.

Szegedi, K., Németh, T. and Körtvési, D. (2023). "Employer Branding in the Fashion Industry: CSR Actions by Fashion SMEs", Sustainability, Vol. 15 No. 3, pp. 1827.

Tarnovskaya, V., Tolstoy, D. and Melén Hånell, S. (2022). "Drivers or passengers? A taxonomy of multinationals' approaches to corporate social responsibility implementation in developing markets", International Marketing Review, Vol. 39 No. 7, pp. 1-24.

Tourky, M., Kitchen, P. and Shaalan, A. (2020). "The role of corporate identity in CSR implementation: An integrative framework", Journal of Business Research, Vol. 117, pp. 694-706.

Úbeda-García, M., Claver-Cortés, E., Marco-Lajara, B. and Zaragoza-Sáez, P. (2021). "Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes", Journal of Business Research, Vol. 123, pp. 57-69.

Van Thanh, P. and Podruzsik, S. (2018). "CSR in Developing Countries: Case Study in Vietnam", Management, Vol. 13 No. 4, pp. 287-300.

Xharavina, N., Kapoulas, A. and Miaoulis Jr, G. (2020). "Netnography as a marketing research tool in the fashion industry in Southeast Europe", International Journal of Market Research, Vol. 62 No. 4, pp. 499-515.

Yang, Y. and Jiang, Y. (2023). "Buyer-supplier CSR alignment and firm performance: A contingency theory perspective", Journal of Business Research, Vol. 154, pp. 113340.

Zerbini, F. (2017). "CSR initiatives as market signals: A review and research agenda", Journal of Business Ethics, Vol. 146 No. 1, pp. 1-23.

Zhang, Q., Oo, B.L. and Lim, B.T.H. (2019). "Drivers, motivations, and barriers to the implementation of corporate social responsibility practices by construction enterprises: A review", Journal of Cleaner Production, Vol. 210, pp. 563-584.

# WHEN THE PROTEUS EFFECT STIMULATES 3D MMORPG PLAYERS TO BUY...

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## ABSTRACT

The aim of this research is to identify and understand the reasons why players purchase virtual items (VI) in the virtual reality (3D) MMORPG. From the results of a sample of 567 players, two important theoretical elements emerge. First, the theoretical model highlights the mechanisms leading to VI purchase by drawing on the theoretical underpinnings of projective identification (Klein, 1946) and the Proteus effect (Yee and Bailenson, 2007) to demonstrate the strong influence of the avatar on player attitudes and behaviour in 3D multiplayer online worlds. Secondly, the results of our study provide a unified theoretical view by shedding light on the combined effects of the three constructs underlying the two previously mentioned theories, namely: embodiment, community engagement and sense of belonging. In addition, our research outlines managerial implications along two axes to help professionals develop more effective solutions in the future.

*Keywords: MMORPG, virtuals items, embodiment, Proteus effect, community engagement, sense of belonging, projective identification*

## INTRODUCTION

Taking advantage of the recent boom in virtual reality technology, the video game market, and more specifically the 3D MMORPG (Massively Multiplayer Online Role Playing Game) segment, is experiencing good growth prospects, with an average rate of 30% per year since 2020[1] . Currently, nearly 20 million players around the world play daily in these virtual multiplayer environments[2] . For MMORPG publishers, the search for profitability and profitability remains a major issue (Garnier and Prostak, 2015) and involves the implementation of a system for monetising virtual objects (Nojima, 2007; Lehdonvirta, 2009), which can be carried out in particular per unit or in the form of a loot box (Tan and Yang, 2022). Lehdonvirta (2009) defines a virtual object (VO) as a mass-produced product that is bought and sold in the same way as a conventional object; these virtual objects include items, characters and currencies in multiplayer and other online games. In these new 3D virtual games, OV

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[1]Internet source: www.realite-virtuelle.com/chiffres-vr-2021/, accessed on 13.10.2022
[2]Internet source: www.philomag.com/articles/mmorpg-le-grand-jeu, accessed on 26.08.2022

purchases are increasingly used by players to equip their avatars. Throughout the game, the purchase of OV then becomes a constructed, symbolic and emotionally charged consumption (Kamel and Bricmont, 2011). Consequently, understanding the mechanisms that encourage players to buy OVs is becoming a growing field of investigation among the research and professional communities.

Most of the research dealing with the purchase behaviour of MMORPG players focuses both on the evaluation of individual variables, through approaches centred on the motivations for online play or oriented towards attachment to OVs (Garnier and Poncin, 2013 ; Garnier and Prostak, 2015; Tan and Yang 2022), and on the analysis of situational variables focused on immersion and flow generated by the game (Csikszentmihalyi 1990; Volle and Charfi, 2013; Degorre and Galan 2013; Degorre, Galan and Girau, 2015)[1] . Unfortunately these studies are mainly developed in the context of two-dimensional MMORPG games and to our knowledge few studies have analysed the process that leads to OV purchase in the world of MMORPGs in the context of 3D gaming. Nevertheless, the vast majority of these studies have been conducted in 3D MMORPGs, displayed on a computer screen. Thus, very little is currently known about the influence of recent virtual reality MMORPGs on player's VIs purchase behaviour. Traditionally, virtual reality is considered a digital environment in which the individual is fully immersed through the use of artefacts such as stereoscopic vision, tracking level and image quality (Cummings & Bailenson, 2016). In addition, these different technological affordances allow the player to evolve in the virtual reality game by truly embodying his virtual avatar. In light of this observation, several research questions emerge:

**RQ1.** How does the process of embodiment, enabled by virtual reality, influence the relationship of the individual to the individual's avatar ?

**RQ2.** Does this virtual embodiment have an impact on the player's sense of community and community engagement ?

**RQ3.** Is purchasing behaviour impacted by these communities that are generated through these new virtual reality worlds ?

Whatever the typology of MMORPG (2D or 3D), the individual enters this virtual imaginary world through the use of an avatar, a virtual character, fixed or animated, of the user and defined as the graphic representation of the real player (Garnier and Poncin, 2013). However, a major difference remains in the game experience proposed between a 2D and 3D MMORPG. Indeed, the virtual reality (3D) mechanism generated by the device worn on the player's head (VR headset), offers him/her a tenfold immersion by means of a gesture modelled in real time in the digital game. According to the theory of projective identification (Klein 1946), the more the individual can project characteristics of

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[1]For a review of all of these variables that affect in-game virtual object purchase behaviour, see the meta-analysis by Cummings et al (2015)

the self (attitudes and behaviour) into the object, the more he will be able to identify with it. By extension, the more the player will have the feeling of embodying his avatar through the multiplayer online game, the higher his involvement in the game will be. Thus, with the intimate conviction of "being there" (Heeter, 1992; Slater and Wilbur, 1997) in the virtual universe, embodied by his digital companion (his avatar), the individual transcended by his virtual companion will be totally immersed and present in it, thus totally forgetting the meanderings of the real world and literally indulging in the pleasure procured by the game and by his "perfect virtual double" (Garnier and Poncin, 2013). Through this embodiment construct, numerous studies aimed at understanding its mechanisms highlight agentivity and possession as two fundamental antecedents characterising this concept (Argelaguet et al, 2016; Blanke and Metzinger, 2008; Roth et al, 2021). Consequently, a strong identification of the individual with his or her avatar is likely to result in Yee and Bailenson's (2007) Proteus effect. According to the theory of the Proteus effect, the individual, through his avatar, will unconsciously adjust his behaviour according to, on the one hand, the identity influence generated by the virtual appearance of his digital character by taking an observer position (Bem, 1972; Péna et al, 2009; Fox, Bailenson & Tricase, 2013) and on the other hand, the perception that other players have of him given the virtual personality of his avatar (behavioural confirmation principle - Yee & Bailenson, 2007; Guegan, Buisine & Collange, 2017). In other words, by identifying deeply with one's virtual character, the real identity of the individual will fade over time, to the benefit of the idiosyncratic personality of the avatar and its role in the virtual community. From then on, in a deep desire to form close ties with other members of the group, the individual will actively engage in the community by providing the skills and performance of his or her avatar to succeed in team quests and missions (Lu et al, 2019). Over time, community engagement creates a strong sense of belonging for the individual to their community. Therefore, in this world where the individual embodies himself through his avatar to identify more with it and his community, he is necessarily led to purchase virtual objects. The originality of this article lies in the mobilisation of these two theoretical foundations: projective identification through embodiment and the theory of proteus on the intention to purchase virtual objects in the context of the 3D MMMORPG, which has not yet been done to our knowledge.

Through this paper, we highlight the combined effect of embodiment on the sense of belonging, on community engagement and by mediation effect on the intention to purchase OV from players in VR MMORPGs. The results of the test of the theoretical model on a sample of 567 players of the game Zenith: "The Last City" contribute on two levels. Academically, it is one of the few studies to our knowledge that allows us to understand the purchase of virtual objects in the world of 3D multiplayer games. On a managerial level, this article provides game publishers, and more specifically managers and developers, with development paths aimed at designing more immersive and highly community-

based game solutions aimed at encouraging the player to purchase VPOs to further customise his avatar. This article will first discuss the theoretical framework based on the main theories mentioned above with the research hypotheses derived from them. Then, the methodology of the study and the presentation of the results obtained will be presented. Finally, the contributions, limitations and perspectives of the research will be discussed.

## LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

*The impact of agentivity on community engagement, sense of belonging*

According to Kilteni et al (2012), the sense of embodiment can be defined as follows: "the sense of embodiment towards a body B is the sense that emerges when the properties of B are treated as if they were the properties of one's own biological body". Agentivity, a component of embodiment, corresponds to the individual's sense of being the author of the action. (Slater et al, 2010). More specifically, agentivity combines aspects of intention, motor selection, action, and final control of movement (Kilteni et al, 2012). In fact, the higher the sense of agency, the more the individual will have the feeling of being fully present in the virtual game and ultimately of being an actor in its community. In their work on agentivity, Ayed and Dorta (2021) have shown that a strong sense of agency increases team spirit, exchanges and creativity within a group of individuals. Therefore, we formulate the following hypothesis:

**H1(a):** Agentivity positively influences player community engagement.

In their 2012 work, Kim et al showed that a strong identification of the individual with their avatar increases the feeling of trust towards the group and by extension the feeling of belonging. The reinforcement of this identification is made possible, in our view, through the agentivity mechanism. Thus we pose the following hypothesis:

**H1(b):** Agentivity positively influences the player's sense of community

*The impact of ownership on community engagement, sense of belonging*

Kilteni et al (2012) define ownership, the second component of the sense of embodiment, as the attribution of a virtual self to one's own body. In reality, for embodiment to be complete, the individual must necessarily feel that they are the main subject of the virtual character. In MMORPGs, the avatar, which represents a user, is defined as a virtual character driven by human behaviour (Kilteni et al, 2012). By extension, a strong sense of ownership of the avatar ineluctably engenders the

feeling of being fully present in the community as a salient virtual individuality (virtual personalities and physical characteristics of the avatar - Garnier and Poncin, 2013), able to exert specific influence within the group, satisfy individual needs and share common interests (Wu, Chen and Chung, 2010). Thus, we hypothesize the following:

**H2(a):** Ownership positively influences player's community engagement.

Over time, the avatar becomes stronger and stronger and the bond with the player becomes closer and closer. According to Watkins and Molesworth (2012), the greater the individual's sense of ownership of the avatar, the greater his or her attachment to the avatar and the greater his or her virtual identity projection within the gaming group. Thus, thanks to his avatar, the player occupies a place of choice in his virtual community, accentuating a strong positive identification process towards it (Guegan, Moliner and Buisine, 2015) and ineluctably implying a modification of his real attitudes and behaviour in favour of the group's expectations (Yee, Bailenson and Ducheneaut, 2009). With this in mind, we submit the following hypothesis;

**H2(b):** Ownership positively influences the player's sense of community.

*The impact of community engagement and sense of belonging on the player's intention to purchase virtual items to help their community.*

In the MMORPG universe, the virtual community is a real communication platform through which different members interact with each other to develop game strategies, progress, develop friendships and share common interests (Wu, Chen and Chung, 2010). Moreover, the desire to improve one's status, skills, create social bonds and have fun are important antecedents in an individual's search for a sense of community (Tonteri, Kosonen, Ellonen and Tarkiaine, 2011). Indeed, directly related to the Proteus effect, the roles (status and skills of the player in the clan) possibly played by the individual through the appearance and identity reflection of his avatar within the group, encourage him to enroll in a VI acquisition process in order to further explore and assert his virtual self (Parmentier and Roland 2009). In this same extension, the work of Belaud, Heitz-Spahn and Yildiz (2016) reveals that the influence of the community linked to the spirit of competition and the place occupied by the player with his group, positions him in a state of perseveration inciting him to continually purchase OVs to maintain his level in the game. Finally, in their work on virtual communities, Kim et al (2012) revealed that a strong identification with the community generates a favourable attitude towards the exploitation of virtual universes and by extension the purchase of OVs. In this regard, we put forward the following hypothesis:

**H3(a):** Community engagement positively influences player purchase intentions to support their gaming community.

Furthermore, according to Chavis and Newbrough (1986), a community is built on social relations linked by a strong sense of community, of belonging, which stimulates, in particular, games of influence, satisfaction and adhesion between the different members. In the case of MMORPGs, this same sense of belonging encourages individuals to form or join salient virtual communities in this cyberspace with strong norms, values and stereotypes and very often modifying the individual's behaviour (Péna and Blackburn, 2013). Dumazert (2017) has shown in particular that the purchase of OVs allows the avatar to be equipped according to the group's norms and inexorably reinforces its sense of belonging. Furthermore, in their work on the effects of community feeling, Yahia and Chaabouni (2015) argued that a strong sense of community belonging strongly increases the purchase intentions of group members to actively participate in the life of the community. Like community involvement, the sense of belonging is also closely related to the Proteus effect and more specifically to the de-individuation mechanism it engenders. Indeed, the anonymity offered by the avatar makes the individual more likely to buy OVs in order to assert an "avatarised" personality that is normalised to the community's expectations. Moreover, Hassouneh and Brengman (2011) have shown that the issue of acceptance by the community and the response to members' demands are two important levers in the intention to purchase in virtual worlds. Hence the following hypothesis:

**H3(b):** Sense of belonging positively influences the player's purchase intentions to support their gaming community.

## METHODOLOGY AND RESULTS

*Procedure.*

The conceptual model and resulting hypotheses were tested with players of the game Zenith: "The Last City". This is a VR MMORPG game released in January 2022 where players play and contribute to the improvement of this early version. The questionnaire was posted on several forums between February 2022 and September 2022. We collected 751 responses, of which 567 were validated. The concepts and constructs of agentivity, possession in relation to the game, sense of belonging to the group, commitment to the gaming group and intention to purchase virtual goods to further contribute to the performance of the game in the group were measured using measurement scales from the literature via a 7-point Likert scale. The model was estimated using structural equations. Data analysis was carried out using SPSS v28 and AMOS v26 software (table 1-2-3).

*Results.*

The results from the principal component analysis (PCA) and the use of structural equations show that the agentivity and possessions variables have a positive and significant impact on the sense

of belonging and community involvement. Thus, the hypotheses H1(a), H1(b), H2(a) and H2(b) of our conceptual model are validated (H1(a): $\beta = 0.210$, and $p < 0.001$; H1(b): $\beta = 0.273$ and $p < 0.005$; H2(a): $\beta = 0.238$ and $p < 0.001$; H2 (b): $\beta = 0.273$, and $p < 0.001$). Furthermore, it is clear that agentivity has a more significant impact on the sense of belonging and community involvement than possession (Table 4). Furthermore, purchase intentions are positively impacted by community involvement and sense of belonging. This allows us to validate hypotheses H3(a) and H3(b) (H3(a): $\beta = 0.244$ and $p < 0.001$; H3(b): $\beta = 0.121$ and $p < 0.005$). Finally, our results highlight the mediating effect of community involvement and sense of belonging between the independent variables of agentivity and possession and the dependent variable of intention to purchase OV (Table 4). In addition, the mediating effect is stronger for community involvement than for sense of belonging (Table 4). (table 4).

## DISCUSSIONS, CONTRIBUTIONS, LIMITATIONS AND FUTURE RESEARCH.

*Discussions.*

This study confirms the combined impact of the three constructs of embodiment, community engagement and belonging, on the purchase intentions of the player evolving in a virtual reality MMORPG. As such, this research complements studies confirming the impact of the feeling of embodiment on the intentions to visit tourist destinations among participants experiencing virtual reality (Caspar et al., 2015; Marasco et al., 2018; Pasanen et al., 2018; Leveau and Camus, 2022), by demonstrating more globally the multiple assets of the feeling of embodiment on the behaviour of the individual in these new digital worlds. Moreover, as the player is part of a virtual identity construction dynamic correlated to the expectations of his community, our study highlights the important role played by the avatar in OV purchase intentions. This research finding is in line with the Proteus effect of Yee and Bailenson (2007) and complements it.

*Theoretical and practical implications.*

More generally, in terms of theoretical contributions, the originality of this research lies at three levels. Firstly, to our knowledge, no research has tested this combination of hypotheses in a virtual reality game environment. Consequently, our model sheds light on a multifactorial mechanism that is still little analysed in academic research on this new theme. Moreover, rooted in the taxonomies of Dix (2017) and Flavián *et al.* (2019), our study of virtual reality worlds complements and supports the idea that embodiment is an essential and characteristic dimension of these new technological worlds. Secondly, our study is, in our opinion, the only one to highlight the impact of the Proteus effect on player purchasing behaviour in a 3D MMORPG. In fact, a significant number of studies on the Proteus

effect only focus on the mutation and identity exploration effects offered by the avatar. Third, the model highlights a possible new convergence of several theoretical foundations related to player purchase behaviour, namely the complementarity of the Proteus effect theory (Yee & Bailenson, 2007), the theory of virtual community sense (Blanchard & Markus, 2004; Blanchard, 2007) and the concept of embodiment (Kilteni *et al.*, 2012).

As far as the managerial implications are concerned, the results suggest two main operational axes. The first is instrumental, with a need for professionals to design and improve their game solutions by proposing more dynamic and immersive technologies in order to increase individuals' sense of embodiment and presence in the game, thus accentuating their role as privileged actors interacting with the members of their virtual community. The second axis has a psycho-sociological hue, directing the MMORPG's editors towards the interest of supporting strong links between players to consolidate solidarity and cooperation between them, thanks to the creation of more engaging community interfaces through team challenges (Lowe and Johnson, 2017), competitions between guilds and active, fluid audio chat systems. Furthermore, editors should develop exclusive social networking platforms specially dedicated to these new virtual reality games in order to encourage players to maintain their links even outside the game phases and strengthen attachment to the game and participatory cultures (Bugress and Jones, 2020). This will eventually strengthen the community tribalism of players with regard to the game and their community and thus encourage, on the one hand, players' repeated immersion and purchase in these new multiplayer game worlds and, on the other hand, positive word-of-mouth towards these games (Badrinarayanan *et al,* 2014)

*Limitations and future research.*

More generally, in terms of theoretical contributions, the originality of this research lies at three levels. Firstly, to our knowledge, no research has tested this combination of hypotheses in a virtual reality game environment. Consequently, our model sheds light on a multifactorial mechanism that is still little analysed in academic research on this new theme. Secondly, our study is, in our opinion, the only one to highlight the impact of the Proteus effect on player purchase behaviour in a 3D MMORPG. In fact, a significant number of studies on the Proteus effect only focus on the mutation and identity exploration effects offered by the avatar. Thirdly, the model highlights a new possible convergence of several theoretical foundations related to player purchase behaviour, namely: the complementarity of the Proteus effect theory (Yee and Bailenson, 2007), the virtual community feeling theory (Blanchard and Markus, 2004; Blanchard, 2007) and the embodiment concept (Kilteni et al, 2012). In terms of managerial implications, the results suggest two main operational axes. The first axis is instrumental, with the need for professionals to design and improve their game solutions by proposing more dynamic and immersive technologies in order to increase the individual's sense of embodiment and

presence in the game, thus accentuating his or her role as a privileged actor with the members of his or her virtual community. The second axis has a psycho-sociological dimension, by orienting publishers towards the interest of supporting strong links between players to consolidate solidarity and cooperation between them, thanks to the creation of more engaging community interfaces through team challenges, competitions between guilds and active audio chat systems.

However, despite the interesting information on the possible explanatory variables of purchase intentions of virtual goods in a 3D MMORPG, there are some limitations to our research. First of all, as previously mentioned, our model concerns an early game. Thus, this embryonic aspect of the game can necessarily lead to alterations in the results. In other words, the impact of the variables of the model analysed may evolve as the gameplay of the game becomes more sophisticated. Secondly, our model is based on declarative data that may call into question its external validity. It might be relevant to conduct this same study on another more mature virtual reality MMORPG, in order to confirm our results. Other future avenues of research remain to be explored in order to gain a deeper understanding of the purchasing behaviour of players in these virtual reality environments. In this respect, communities bring together many personalities with varying motivations. It could therefore be interesting to analyse the impact of members' personal motivations according to Yee's taxonomy (2007) on community involvement, and ultimately on purchase intention. Another research perspective would be to measure the impact of the clan leader on the nature of the individual's community commitment and sense of belonging with regard to the leadership continuum theory (Tannenbaum and Schmitt, 1958). Furthermore, as the avatar is intimately linked to the individual, the attachment to its virtual companion could influence its behaviour towards the community by limiting or reinforcing its personal involvement. In this respect, examining the impact of this attachment on the variables of community involvement and belonging may be a third relevant avenue for understanding the formation of purchase intentions. A fourth avenue of research could focus, following the example of Guadagno, Swinth and Blascovich's (2011) work on social evaluation in virtual environments, on assessing the impact of the avatar's appearance on the integration of the individual by other members of the community, and thus on the extent of his community commitment and his sense of belonging to his group. Finally, these multiplayer online games are directly mediated by computer or virtual reality headset. The degree of involvement of the individual in the game, and consequently their level of engagement in their community, is inextricably linked to their perception of the usefulness and ease of using this technology. Thus, understanding and measuring the effects of the TAM (Technology Acceptance Model - Davis et al, 1989) on community engagement and purchase intention could be a fifth and final area of research.

## CONCLUSION

The rise of the metaverse and new technologies is overturning the existing economic ecosystem. Virtual reality (VR) is reshaping the landscape of virtual worlds by offering highly immersive, collaborative 3D universes that promote pleasure in the use of these new digital information systems (Van der Heijden, 2004). This powerful community involvement necessarily leads individuals to buy OVs to express a strong sense of belonging to this same virtual community. These OV purchases are a godsend for BMs, which are tending to become business models no longer based on the sale of subscriptions but on the monetization of individual OVs.

## REFERENCES

Argelaguet F, Hoyet L, Trico M and Lecuyer A. (2016), "The role of interaction in virtual embodiment: Effects of the virtual hand representation", IEEE Virtual Reality (VR): 3-10

Ayed H and Dorta T. (2021) 'The agentivity of immersive virtual reality systems in a codesign situation: a comparative study between Hyve-3D and a traditional environment'. Design Sciences, Vol. 13 No. 1, pp. 27-41.

Badrinarayanan, V.A., Sierra, J.J., and Taute, H.A. (2014), Determinants and outcomes of online brand tribalism: Exploring communities of massively multiplayer online role-playing games (MMORPGs). Psychology Marketing, Vol 31, pp. 853–870.

Belaud L, Heitz-Spahn S, Yildiz H. (2017), The social and connected gamer: an analysis perspective through behavioural engagement theory. Decisions Marketing, French Marketing Association, Vol. 84, pp. 77-94.

Bem DJ. (1972), Self-Perception Theory Development of self-perception theory was supported primarily by a grant from the National Science Foundation (GS 1452) awarded to the author during his tenure at Carnegie-Mellon University, Editor(s): Leonard Berkowitz, Advances in Experimental Social Psychology, Academic Press 6 : 1-62.

Blanchard AL and Markus ML. (2004), The lived 'meaning' of a virtual community: characteristics and processes. SIGMIS Database, Vol. 35 No. 1, pp. 64-79.

Blanke O and Metzinger T. (2009), Full-body illusions and minimal phenomenal selfhood. Trends Cogn Sci, Vol. 13 No. 1, pp. 7-13.

Burgess, J. and Jones, C. (2020), "Exploring the forced closure of a brand community that is also a participatory culture", European Journal of Marketing, Vol. 54 No. 5, pp. 957-978.

Caspar E, Cleeremans A and Haggard P. (2015) The relationship between human agency and embodiment. consciousness and Cognition, Vol. 33, pp. 226-236.

Chavis DM and Newbrough JR. (1986), The meaning of "community" in community psychology. Journal of Community Psychology, Vol. 14 No. 4, pp. 335-340.

Cummings and Bailenson N. (2016), How Immersive Is Enough? A Meta-Analysis of the Effect of Immersive Technology on User Presence. Media Psychology Vol. 19 No. 2, pp. 272-309.

Csikszentmihalyi M. (1990), Flow: The psychology of Optimal Experience, New York.

Cummings, J.J., and Bailenson J.N. (2016), How Immersive Is Enough? A Meta-Analysis of the Effect of Immersive Technology on User Presence. Media Psychology, Vol. 19, pp. 272-309.

Davis F. (1993), User acceptance of information technology. international journal of Man-Machine, Vol. 38.

Degorre A, Galan JP. (2013), Music as a source of immersion in video games. International Congress of the French Marketing Association.

Degorre A, Galan JP and Giraud M. (2015), Control, flow and propensity to pay: an application to the video game experience. French Marketing Association, Marrakech, Morocco.

Dix, A. (2017), Human–computer interaction, foundations and new paradigms. Journal of Visual Languages & Computing, Vol. 42, pp. 122–134.

Dumazert JP. (2017), 'Negotiating the immaterial and the value of avatars: consequences of marketing through immersion, achievement and socialization in the Massively Multiplayer Video Game market'. Market and Organizations, Vol. 29 No. 2, pp. 33-49.

El Kamel L and Rigaux-Bricmont, B. (2011), Les apports du postmodernisme à l'analyse des univers virtuels comme expérience de consommation. The case of Second Life. Marketing Research and Applications, Vol. 26 No. 3, pp. 71-92

Flavián, C., Ibáñez-Sánchez, S. and Orús, C. (2019), The impact of virtual, augmented and mixed reality technologies on the customer experience. Journal of Business Research, Vol. 100, pp. 547–560.

Fox J, Bailenson J and Tricase. (2013), The embodiment of sexualized virtual selves: The Proteus effect and experiences of self-objectification via avatars, Computers in Human Behavior, Vol. 29 No. 3, pp. 930-938.

Garnier M and Poncin I. (2013), The avatar in marketing: synthesis, integrative framework and perspectives. Marketing Research and Applications, Vol. 28 No. 1, pp. 92-123.

Garnier M and Prostak G. (2015), 'Why pay in a free browser game? Motivations to play and purchase of virtual objects". Management & Avenir, Vol. 82 No. 8, pp. 183-207.

Gorisse G, Christmann O and Richir S. (2018), From presence to embodiment Proposal of a meta-model for virtual reality. Digital Interfaces, Vol. 1, pp. 94 - 113.

Guadagno RE, Swinth KR and Blascovich J. (2011), 'social evaluation of embodied agents and avatars' . Computers in Human Behavior, Vol. 27, pp. 2380-2385.

Guegan J, Buisine S and Collange J. (2017), 'Proteus effect and priming: these avatars that influence us', Psychology Bulletin, Vol. 547 No. 1, pp. 3-16.

Hassouneh D and Brengman M. (2014), A motivation-based typology of social virtual world users Computers in Human Behavior, Vol.33, pp. 330-338.

Heeter C. (1992), Being There: The Subjective Experience of Presence, Presence: Teleoperators & Virtual Environments, Vol. 1, pp. 262-271.

Kilteni K, Groten R and Slater M. (2012), The sense of embodiment in virtual reality. Presence: Teleoperators & Virtual Environments, Vol. 21, pp. 373-387.

Kim C, Lee SG and Kang M. (2012), I became an attractive person in the virtual world: Users' identification with virtual communities and avatars. Computers in Human Behavior, Vol. 28 No. 5, pp. 1663-1669.

KLEIN M. (1946), Notes on some schizoid mechanisms. The International journal of Psychoanalysis, Vol. 27, pp. 99-110.

Lea M, Spears R, and De Groot D. (2001), Knowing me, knowing you: Anonymity effects on social identity processes within groups. Personality and Social Psychology Bulletin Vol. 27, pp. 526-537.

Lehdonvirta, V. (2009) Virtual item sales as a revenue model: identifying attributes that drive purchase decisions. E-commerce research, Vol. 9, pp. 97-113.

Leveau PH and Camus S. (2022), The role of embodiment in the emotions aroused during virtual reality tourism visits. 9th AFMAT (Association Française de Management du Tourisme) conference, Angers, France

Lowe, B. and Johnson, D. (2017), "Diagnostic and prescriptive benefits of consumer participation in virtual communities of personal challenge", European Journal of Marketing, Vol. 51 No. 11/12, pp. 1817-1835.

Lu J, Xie X, Lan J, Peng TQ, Wu Y, and Chen W. (2019), BeXplorer: Visual analytics of dynamic interplay between communication and purchase behaviors in MMORPGs, Visual Informatics, Vol. 3 No.2, pp. 87-101.

Marasco A, Buonincontri P, Van Niekerk M, Orlowski M, and Okumus F. (2018) Exploring the role of next-generation virtual technologies in destination marketing, Journal of Destination Marketing & Management Vol. 9, pp.138-148.

Nojima, M. (2007), Pricing models and motivations for MMO play. In Proceedings of DiGRA.

Pasanen K, Pesonen J, Murphy J, Heinonen J and Mikkonen, J. (2019). Comparing Tablet and Virtual Reality Glasses for Watching Nature Tourism Videos. Information and Communication Technologies in Tourism: Proceedings of the International Conference in Nicosia.

Peña, J, Hancock JT, and Merola NA. (2009), The Priming Effects of Avatars in Virtual Settings. Communication Research, Vol. 36 No. 6, pp. 838-856.

Peña J and Blackburn K. (2013), The Priming Effects of Virtual Environments on Interpersonal Perceptions and Behaviors. Journal of Communication, Vol. 63 No. 4, pp. 703 - 720.

Rolland S and Parmentier G. (2009), Consumers of virtual worlds: identity construction and consumption experience in Second Life. Marketing Research and Applications, Vol. 24 No. 3, pp. 43-56.

Roth D and Latoschik ME. (2020), Construction of the Virtual Embodiment Questionnaire (VEQ). IEEE Trans Vis Comput Graph, Vol. 26 No. 12, pp. 3546-3556.

Slater M and Wilbur S. (1997), A Framework for Immersive Virtual Environments (FIVE): Speculations on the Role of Presence in Virtual Environment. Presence: Teleoperators & Virtual Environments, Vol. 6, pp. 603-616.

Tannenbaum R. and Schmitt W. (1958), How to choose a leadership pattern, Harvard Business Review, Vol. 36, pp. 95-101.

Tonteri L, Kosonen M, Ellonen HK and Tarkiainen A. (2011), Antecedents of an experienced sense of virtual community. Computers in Human Behavior, Vol. 27 No. 6, pp. 2215-2223.

Volle P and Charfi AA. (2010), Immersion in online experiential environments: the role of virtual reality devices. 26ème International Congress of the French Marketing Association: pp. 1-25.

Watkins R and Molesworth M. (2012), 'Attachment to Digital Virtual Possessions in Videogames'. Research in Consumer Behavior, Vol. 14, pp. 153-170.

Wee-Kheng T and Chieh-Yu Y. (2022), An exploration of MMORPG in-game virtual-item contribution to game enjoyment from the perspectives of purchase behavior and psychological ownership. Computers in Human Behavior, Vol. 134.

Wu JJ, Chen YH and Chung YS. (2010), 'Trust factors influencing virtual community members: A study of transaction communities'. Journal of Business Research, Vol. 63 No 9-10, pp. 1025-1032.

Yahia IB and Chaabouni A. (2015), "Effects of virtual community feeling on loyalty." International Management, Vol. 19 No. 2, pp. 189-202.

Yee, N. (2007) Gambling motivations in online games. Journal of CyberPsychology and Behavior, Vol. 9, pp. 772-775.

Yee N and Bailenson J (2007) The Proteus Effect: The Effect of Transformed Self-Representation on Behavior, Human Communication Research, Vol. 33 No. 3, pp. 271-290.

Yee N, Bailenson JN and Ducheneaut N (2009) The Proteus Effect Implications of Transformed Digital Self-Representation on Online and Offline Behavior. Research in communication, Vol. 36 No.2, pp. 285-312

Figure 1. Conceptual model and research hypotheses
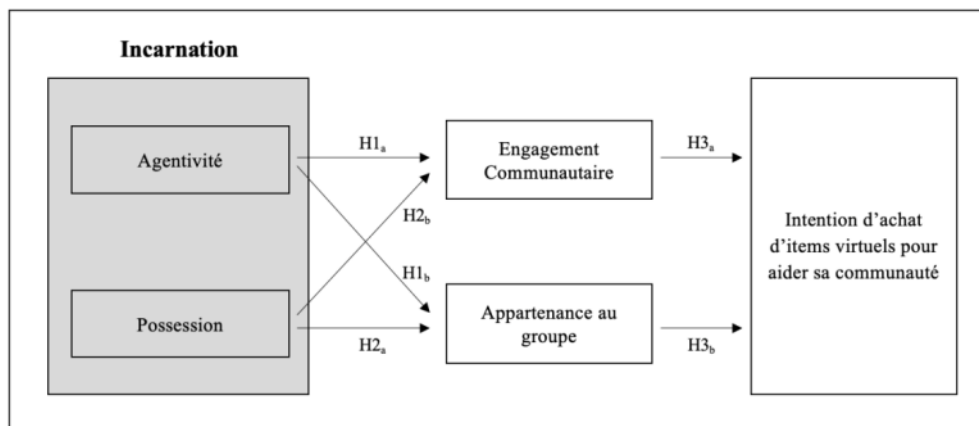


Table 1. Demographic analysis results

| Classification | | Frequency | Percentage of Percentage |
|---|---|---|---|
| Gender | Male | 485 | 85.52 |
| | Female | 82 | 14.48 |
| Age | Under 12 | 12 | 2.2 |
| | 13-15 | 79 | 13.96 |
| | 16-18 | 287 | 50.61 |
| | 19-21 | 140 | 24.73 |
| | 22-24 | 36 | 6.44 |
| | 25-27 | 7 | 1.3 |
| | 28-30 | 2 | 0.36 |
| | Over 30 | 1 | 0.29 |
| Education | Without diploma | 54 | 9.6 |
| | College certificate | 226 | 39.99 |
| | Middle-school certificate | 169 | 29.86 |
| | Middle-school certificate +1 | 36 | 6.36 |
| | Middle-school certificate +2 | 47 | 8.39 |
| | Bachelor | 22 | 3.69 |
| | Master | 8 | 1.23 |
| | Doctorate | 5 | 0.72 |

Table 2: The discriminant validity based on Fornel Larker Criterio

| Variables | Mean | AVE | IA | Agentivity | Possession | Group membership | Behavioral Commitment |
|---|---|---|---|---|---|---|---|
| IA | 4.000 | 0.581 | 0.762 | | | | |
| Agentivity | 4.487 | 0.755 | 0.152** | 0.869 | | | |
| Possession | 4.162 | 0.460 | 0.163** | 0.252** | 0.678 | | |
| Group membership | 4.857 | 0.749 | 0.058 | -0.056 | -0.090* | 0.865 | |
| Behavioral Commitment | 4.318 | 0.464 | 0.223** | 0.329** | 0.277** | -0.178** | 0.681 |

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Table 3. Discriminant Validity and Reliability

| Buildings | Alpha Cronbach | AVE | KMO | Sig |
|---|---|---|---|---|
| Possession | 0.78 | 46.028 | 0.855 | 0.000 |
| Agentivity | 0.84 | 75.513 | 0.713 | 0.000 |
| Group membership | 0.72 | 74.930 | 0.500 | 0.000 |
| Behavioral commitment | 0.76 | 46.410 | 0.825 | 0.000 |
| Intention to purchase virtual items | 0.72 | 58.130 | 0.540 | 0.000 |

AVE: average variance explained; Sig: significance

Table 4. Synthesis of the significant model's estimation relationships

| Variable relationships | | Estimate | H.E. | C.R. | Sig |
|---|---|---|---|---|---|
| Studied variables | | | | | |
| Agentivity | Group membership | 0.238 | 0.040 | 5.867 | *** |
| Possession | Group membership | 0.127 | 0.047 | 2.710 | ** |
| Agentivity | Behavioral commitment | 0.273 | 0.038 | 7.112 | *** |
| Possession | Behavioral commitment | 0.210 | 0.038 | 5.493 | *** |
| Group membership | IA | 0.121 | 0.046 | 2.615 | ** |
| Behavioral commitment | IA | 0.244 | 0.049 | 5.023 | *** |
| Control variables | | | | | |
| Age | Possession | -0.144 | 0.053 | -2.690 | ** |
| Age | Behavioral commitment | 0.124 | 0.048 | 2.595 | ** |

***: Significant at 1%; **: Significant at 5%.

# THE IMPACT OF CHANGES IN LEADERSHIP STYLES ON QUALITY CULTURE IN YOUTH NGOS: THE CASE OF LITHUANIA

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## ABSTRACT

The role of leadership in the development of a quality culture is of paramount importance considering the increasing influence of non-governmental organisations (NGOs) in the society. This research aims to bridge the gap in understanding the impact of changes in managers' leadership styles within youth non-governmental organisations (YNGOs) on the development of a quality culture. The subject of the research was Lithuanian YNGOs, which were selected due to the scarcity of scientific research in this area and their unique characteristics.

The concept of quality culture was operationalised as a set of structural/managerial and cultural/psychological elements. The study examined the transitions between transformational, transactional, and servant leadership styles. The research was conducted using qualitative research methods such as individual semi-structured interviews, focus group discussion, and qualitative content analysis.

A research design model was developed to illustrate the impact of changes in leadership styles of YNGO managers on the quality culture within YNGOs. Thirteen cases of leadership style changes were identified across the studied YNGOs.

In summary, the research showed the importance of quality culture within YNGOs, and emphasised the role of the YNGO manager in initiating and developing it. The findings suggest that changes in leadership styles could have a significant impact on the quality culture within YNGOs. Additionally, the perception of quality in YNGOs was identified as stakeholders' satisfaction and process quality. This research reveals the need for further research to get a broader discourse on quality culture and leadership within the context of YNGOs.

*Keywords: youth non-governmental organisations (YNGOs), quality, quality culture, leadership styles, change of leadership styles (in YNGOs).*

## INTRODUCTION

The influence of non-governmental organisations (NGOs) on public governance has been changing in recent decades, i.e. the roles and functions of the natural and legal persons involved in the sector have

expanded considerably. This demonstrates the need for scientific debate and theoretical models focusing on NGOs including the examination of leadership styles among managers in the non-governmental sector and the impact of changes in these styles on the quality culture in organisations. The role of NGOs in society is understood through two primary functions: representation of public interests (lobbying, active political participation activities) and provision of services in the intended/clearly defined field of interest (Pipirienė and Sinkevičiūtė, 2010). NGOs are categorised based on the field and scope of their activities. Among the various categories of NGOs, youth NGOs (YNGOs) have received relatively less research attention in terms of their scope of activities. However, Lithuania stands out as one of the leading countries in Europe in the field of youth work and the activities of YNGOs.

Given the contextual background, this research focuses on Lithuanian YNGOs, their managers' leadership styles and the impact of style changes on the organisation's quality culture. The significance of leadership in initiating and cultivating a quality culture becomes important, particularly due to the rapid changes in leadership styles due to the specificity of managing a YNGO. Managers of Lithuanian YNGOs often face high turnover rates, short tenures and lack of management experience. These factors are likely to greatly impact the quality culture in YNGOs.

Also it should be noted that the fragmentation of research leads to an ongoing debate on the concept and content of quality culture (Cronemyr *et al.*, 2017). Moreover, the limited research conducted in the non-governmental sector in general has resulted in the absence of a clearly defined concept of quality culture. Therefore, there was a need to define the concept of quality culture within YNGOs prior to analysing the impact of changes in leadership styles on quality culture.

The aim of the research is to determine how changes in leadership styles affect the quality culture in the YNGOs. The objectives of this research are as follows: 1) to define the concept of quality culture in the YNGOs by identifying its main features within the YNGOs; 2) to identify how changing leadership styles affect the quality culture within the YNGOs; 3) to develop a model of the impact of changes in leadership styles on the quality culture in the YNGOs.

## THEORETICAL BACKGROUND

*Quality Culture*

The pursuit of enhancing organisational processes is the reason for creating a quality culture within an organisation, by voluntarily selecting certain values, practices and instruments (Cronemyr *et al.*, 2017; Nilsson *et al.*, 2005). There are a number of different definitions of quality culture in the public sector, but no singular definition specifically tailored to NGOs. Nevertheless, quality culture in NGOs can be understood as a part of the organisational culture, which is characterised as a whole of

structural/managerial and cultural/psychological elements (Mohd Ali and Musah, 2012; Bendermacher *et al.*, 2017; Ntim, 2014; Valiuškevičiūtė and Žiogevičiūtė, 2006).

Furthermore, the overall mindset, shared values, and commitment of the members/volunteers of the organisation are also important for a quality culture. Considering the factors analysed, it can be said that the quality culture is influenced by both internal elements and external context. The external context includes various political, and social aspects, such as national culture, economic and other factors, as well as various emergencies, while the internal elements are represented from the scientific literature analysed through structural/managerial and cultural/psychological categories (see Figure 1).
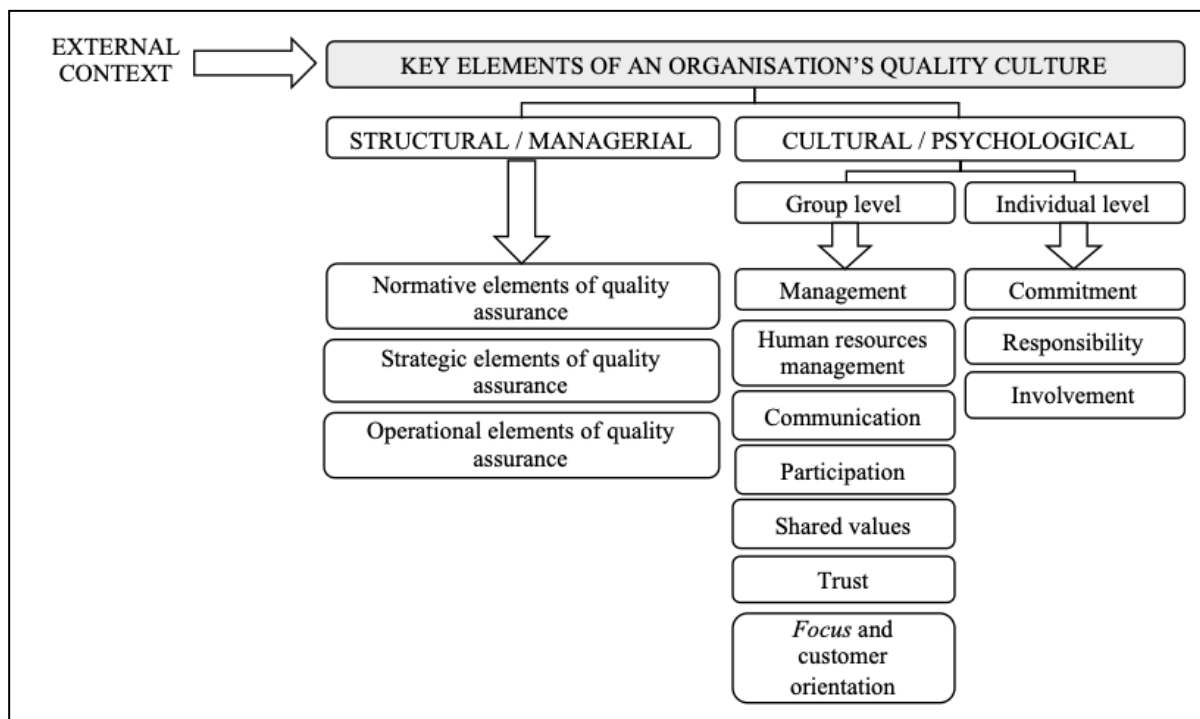


Figure 1. A Model of Perception of a Quality Culture
Source: compiled by the authors, based on Johnson, 2000; European University Association, 2006; Adomavičiūtė and Pukelytė, 2010; Hildesheim and Sonntag, 2020.

In order to find out the practical perception of quality culture in YNGOs the research uses this theoretical model of the perception of a quality culture.

*Leadership Styles of NGOs Managers*

Leadership styles of managers play a crucial role in the success of NGOs. The scientific literature frequently identifies transformational, transactional, and servant leadership styles as commonly observed in the non-governmental sector. Table 1 below shows the main characteristics associated with each of these leadership styles.

| LEADERSHIP STYLES | MAIN CHARACTERISTICS |
|---|---|
| Transformational | Inspirational motivation (creating and inspiring a vision); creating a supportive environment; anticipating how to act; ability to communicate creatively with subordinates; idealised influence; personalised attention. |
| Transactional | Performance monitoring; defining objectives; ensuring feedback; career planning; compliance with the rules; focus on extrinsic motivation; communication about rewards. |
| Servant | Empowerment and education; humility; authenticity; interpersonal acceptance; indication of direction; careful management. |

Table 1. Key Characteristics of Transformational, Transactional and Servant Leadership Styles
Source: compiled by the authors, based on Bass, 1985; Harter, 2002; Kasiulis and Barvydienė, 2005; Rowold and Rohmann, 2009; Van Dierendonck, 2011; Lutz Allen *et al.*, 2013; Kutkaitis and Petrulis, 2014; Kammerhoff *et al.*, 2019; Petrulis *et al.*, 2021.

As mentioned above, there are 3 main leadership styles of managers that are commonly observed in NGOs. Transformational managers inspire and motivate their team members to work towards a common goal, while transactional managers provide rewards and incentives to team members for achieving specific goals (Kasiulis and Barvydienė, 2005; Rowold and Rohmann, 2009). Servant managers, on the other hand, prioritise the needs of their team members and empower them to achieve goals (Petrulis, 2017).

Upon examining the characteristics of leadership styles in NGOs, it became evident that the expression of transformational, transactional and servant leadership styles have very distinct differences that can affect the perception of quality culture. Therefore, it was decided to assess the practical expression of these leadership styles and the impact of their changes within YNGOs.
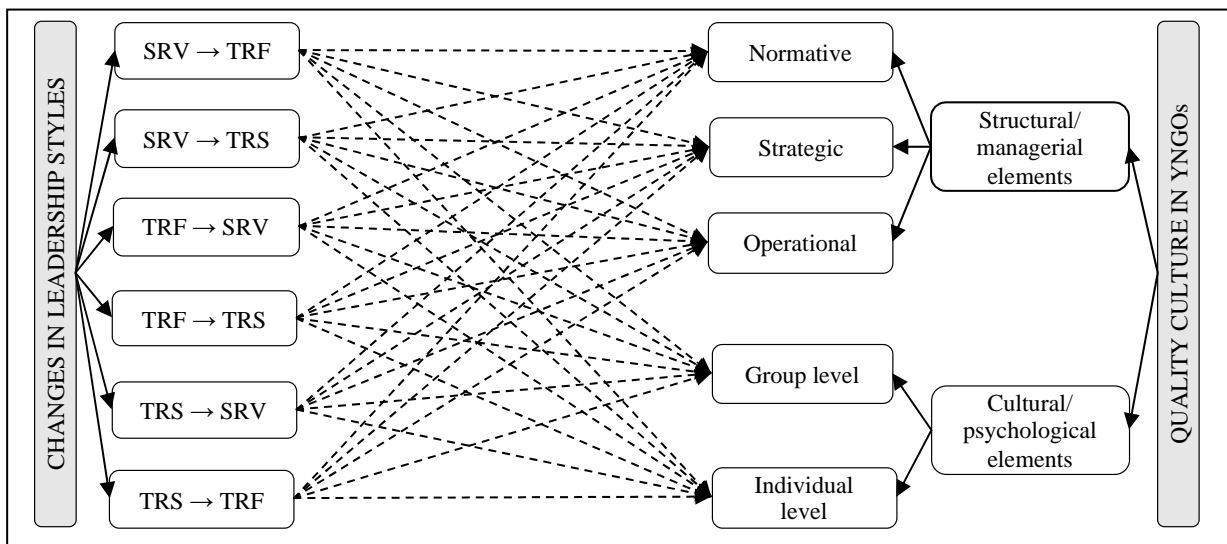


Figure 2. A Research Design Model
Source: compiled by the authors, based on an analysis of the scientific literature.

## RESEARCH METHODOLOGY

The research design model itself is operationalised as a set of quality culture elements and cases of change in leadership styles (see Figure 2).

*Research Methods*

The research adopts a qualitative research methodology, using the following methods: individual semi-structured interviews and focus group discussion. A qualitative content analysis method was chosen to process the data (Bitinas *et al.*, 2008; Gaižauskaitė and Valavičienė, 2016; Žydžiūnaitė and Sabaliauskas, 2017). Analysis was performed using "MAXQDA Analytics Pro 2022 (Release 22.4.0)" software and "Microsoft Excel", a "Microsoft Office 365" application.

*Principles of Questionnaire Design*

The instruments to identify and assess the expression of leadership styles, like the Transformational Leadership Behaviour Inventory (Podsakoff *et al.*, 1990), the Global Transformational Leadership Scale (Carless *et al.*, 2000), Multifactor Leadership Questionnaire (Avolio and Bass, 1991), Leadership Style Assessment Instrument (Petrulis *et al.*, 2021) were analysed. The latter, developed by Petrulis *et al.* (2021), was chosen.

The questions about the elements of quality culture were formulated by drawing upon the findings of a literature analysis, i.e. the main elements of quality culture identified on the basis of Adomavičienė and Pukelytė (2010), Hildesheim and Sonntag (2020), Jackson (2004), Johnson (2000), Rowold and Heinitiz (2007), Staufenbiel and Hartz (2000), Zeitz *et al.* (1997).

*Population*

Population studied – Lithuanian YNGOs. Lithuanian YNGOs are distinguished by a rapid turnover (and with it, changes in leadership style) of YNGO managers, which is a very topical phenomenon in the context of Lithuanian YNGOs. In addition to the fixed term of office (usually lasting from 1 to 2 years), there is often a predefined limit on the number of consecutive terms an individual can serve. Furthermore, the position of a YNGO manager is typically restricted to individuals within a specific age range, which is defined as a young person between the ages of 14 and 29 (inclusive), as per the Law on Youth Policy Framework of the Republic of Lithuania (2003).

*Sample Size*

Given the absence of rigid guidelines for determining the sample size in a qualitative research, it was decided to include a total of 12 participating YNGOs (of which 12 YNGOs managers in office at the time of the research as well as 24 YNGOs managers who had completed their term of office were planned to be surveyed in individual semi-structured interviews). In addition, 6 members/volunteers of

the YNGOs active at the time of the research were invited to partake in the focus group discussion (Bitinas *et al.*, 2008).

*Sampling Technique*

A combination of mixed purposive sampling approach, combining maximum variation sampling and criterion sampling, was chosen for selection of the participating YNGOs. (Bitinas *et al.*, 2008, Gaižauskaitė and Valavičienė, 2016; Žydžiūnaitė and Sabaliauskas, 2017). The YNGOs were selected based on the following criteria: a) the organisation is registered in the State Enterprise Centre of Registers under the designation "Non-Governmental Organisation"; b) the organisation has not initiated closure (no bankruptcy or other reasons for deregistration); c) the legal form is association (based on the Law on Youth Policy Framework of the Republic of Lithuania 2003); d) the term of office of the manager of the organisation shall be a minimum of 1 year and a maximum of 2 years in the governing document(s); e) the age range of the organisation's member/volunteer as defined in the governing document(s) corresponds to the age range of a young person.

*Characteristics of the Research Participants*

Out of the 12 YNGOs managers approached, 10 provided their consent to participate in the research conducted within the YNGOs they manage. In order to maintain confidentiality and anonymity, the names of the participating YNGOs have been coded.

| YNGO | Main objective(s) of the organisation | Duration of the manager's term of office | Number of managers | Focus group participant code (number) |
|---|---|---|---|---|
| YNGO-1 | Represent the interests of students at the university. | 1 year | 3 (M1-M3) | P1(1) |
| YNGO-2 | Represent the interests of students at the university. | 1 year | 3 | 0 |
| YNGO-3 | Represent the interests of students at the university. | 1 year | 3 | 0 |
| YNGO-4 | To shape youth policy and represent the interests of young people and youth organisations. | 2 years | 3 | P2(1) |
| YNGO-6 | To disseminate the ideas of a specific political ideology among young people, and to train members for political and social activities. | 1 year | 3 | P3(1) |

| YNGO-7 | To represent students' interests, promote initiative and citizenship. | 2 years | 3 | P4(1) |
|---|---|---|---|---|
| YNGO-8 | To carry out non-formal education activities and develop a healthy lifestyle community among children and young people. | 2 years | 3 | P5(1) |
| YNGO-9 | To unite students in a particular field of study and represent their interests. | 1 year | 2 | 0 |
| YNGO-10 | To unite students in a specific field of study, to encourage their involvement in improving their studies and their participation in social activities. | 1 year | 3 | 0 |

Table 2. Characteristics of the YNGOs that Participated in the Study
Source: compiled by the authors, based on the statutes of the YNGOs and data from the State Enterprise Centre of Registers.

Due to the lack of possibility to assess the change in leadership styles, YNGO-5 was excluded from the research sample.

The research involved interviewing a total of 26 YNGOs managers, comprising 9 managers who were currently in office at the time of the research and 17 managers who had completed at least half of the designated term outlined in the statutes. Additionally, 5 out of 6 members/volunteers of the different YNGOs participated in the focus group discussion, matching the set out attributes: a) the member/volunteer is active in the YNGO under the time of the research; b) the member/volunteer has experienced at least one change in the leadership styles of YNGO's managers, i.e. a member/volunteer has been a part of at least two different YNGO's managers teams.

*The Concept of Quality Culture in the YNGOs*
The concept of quality culture within the YNGOs has been clarified based on a theoretical framework. According to the categories of the elements of quality culture, Figure 3 shows the concept of quality culture in the YNGOs, with the identified sub-categories. The frequency of recurrence of the sub-categories is indicated in brackets with the first number representing the distribution among YNGOs managers and the second number representing the distribution among YNGOs members/volunteers.
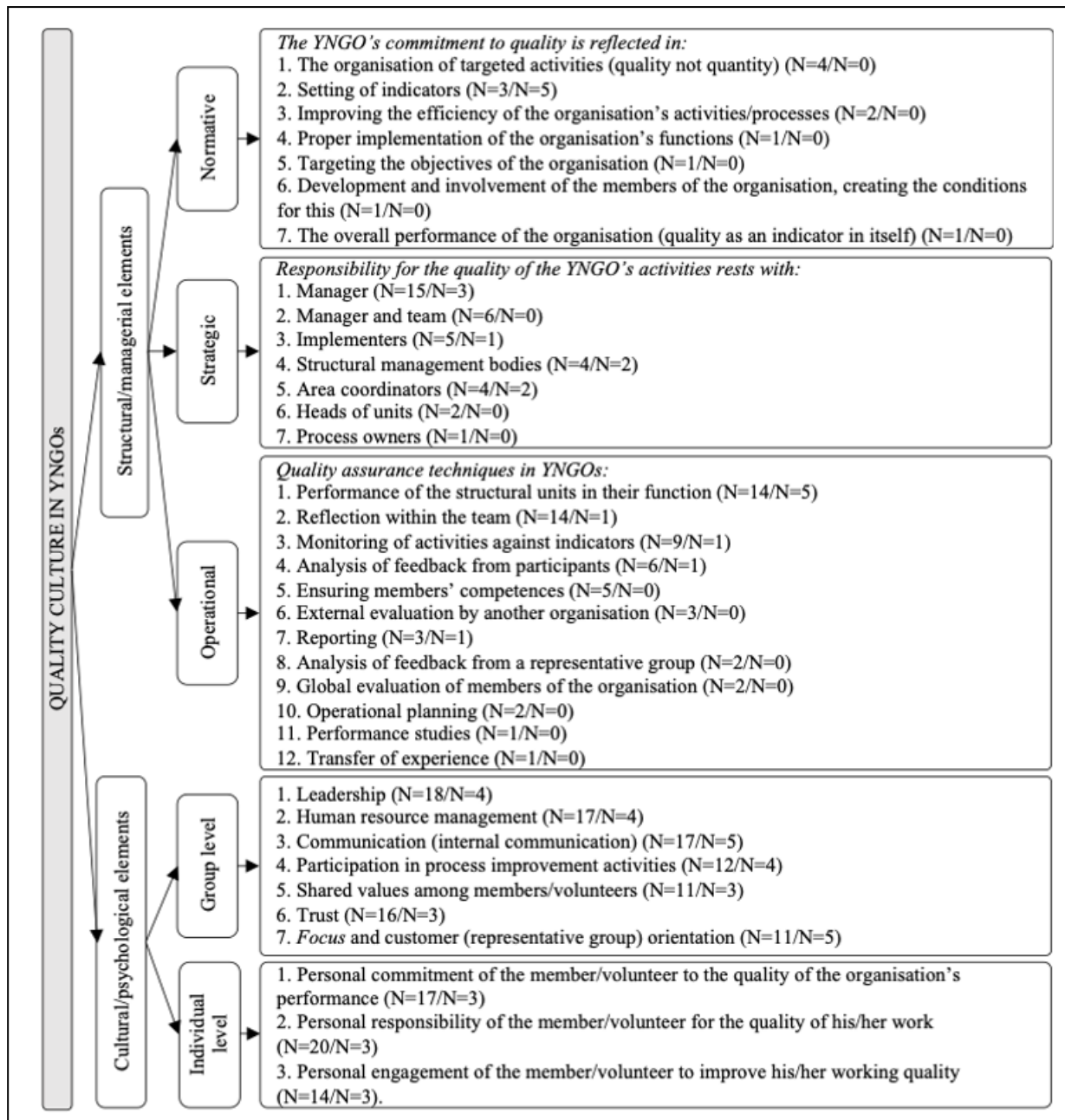
Figure 3. Concept of Quality Culture in YNGOs
Source: compiled by the authors, based on the research results.

To determine whether the normative elements of quality assurance exist in YNGOs, the YNGOs managers were asked how the pursuit of quality is reflected in the organisation's aims. It should be noted that the pursuit of quality through the aims in the YNGOs is justified given the prevailing perception of quality in YNGOs, which is mostly related to the processes of YNGOs. Members/volunteers of YNGOs who participated in the focus group discussion highlighted the pursuit of quality through the setting of indicators (N = 5), while agreeing and noting that it is predominantly short-term in nature.

The research also encountered challenges regarding the clarity of quality in YNGOs, most of the

managers interviewed struggled to define it clearly. It should be noted that the objective was to define the concept of quality culture in YNGOs by identifying its main features. However in order to achieve this objective an additional task emerged during the study, namely, the need to clarify the perception of quality within YNGOs.

To summarise the perception of quality in YNGOs, the definitions of quality in YNGOs provided by YNGOs managers and members/volunteers were categorised according to their content into 2 categories and 12 sub-categories. It was observed that quality in YNGOs is perceived as stakeholders' satisfaction and process quality. When comparing the frequency of occurrence of the sub-categories, smooth implementation of activities (N = 6) and focused activities based on a strategy or action plan (N = 6) stood out. The perception of smooth implementation of activities in YNGOs relates to completing tasks according to a predetermined plan within the organisation and maintaining consistent organisation of activities. On the other hand focused activities are perceived as having a clear, precise direction and a goal or plan. The desire to improve organisational processes is one of the reasons for developing a quality culture in an organisation, the prevailing perception of process quality in the YNGOs confirms the importance of developing a quality culture in the YNGOs.

The strategic elements of quality assurance are associated with the responsibility of organisational performance. According to the opinion of YNGOs managers, it was found that the most frequent person taking responsibility for the quality of the organisation's performance is the manager (N = 15). The results suggest that the majority of the YNGOs surveyed are conducive to the development of a quality culture due to the perceived importance of the manager's role and responsibility in quality assurance. Similarly, most members/volunteers of the YNGOs also confirmed that the manager (N = 3) is responsible for the quality of the YNGOs' activities.

In assessing the existence of operational elements of quality assurance in YNGOs, it was found that quality assurance is achieved through reflection within the team (N = 14) and through the performance of the structural units in their function (N = 14), which is mainly related to the analysis of the organisation's performance. Besides, all focus group discussion participants identified the sub-category of the performance of the structural units in their function (N = 5).

The assessment of cultural/psychological elements of quality culture was also analysed. In summary, all the cultural/psychological elements of quality culture were mentioned at least once by YNGOs managers and members/volunteers of YNGOs and identified as the most important for achieving quality of the YNGO. For a more detailed breakdown of the elements assessment, please refer to Figure 3.

Comparing the results of the analysis of the scientific literature and the results of the research, it could be concluded that the theoretical model of perception of a quality culture, which consists of

structural/managerial and cultural/psychological elements (Johnson, 2000; European University Association, 2006; Adomavičiūtė and Pukelytė, 2010; Hildesheim and Sonntag, 2020), is applicable to YNGOs. Within each category of normative, strategic and operational elements of quality assurance, sub-categories were identified, revealing the diversity of opinions and attitudes. In addition, all cultural/psychological elements of quality culture were identified at least once as being central to the quality of an YNGO's performance and none were marked as unimportant or irrelevant in the YNGO context.

*The Impact of Changes in Leadership Styles of YNGOs Managers on Quality Culture*

YNGOs managers gave their views on each criterion in response to questions designed to assess leadership style. The managers' answers were interpreted, and the assessment of each criterion was attributed to a specific leadership style, considering the characteristics of different leadership styles. The overall insight is that the most dominant leadership styles amongst the YNGOs managers surveyed are transformational (12 out of 26 managers) and servant (11 out of 26 managers). The least dominant leadership style is transactional (3 out of 26 managers). These findings are consistent with the results of research conducted on the assessment of leadership styles in the non-governmental sector, which found that, in general, the majority of NGOs managers are characterised by transformational leadership style traits (Estrada and Carranza, 2016; Šešić and Stefanović, 2017). Additionally, research suggests that in the absence of transformational leadership style, the most suitable alternative in the non-governmental sector is servant leadership style (Palumbo, 2016). To show the impact of changes in leadership styles on the quality culture in YNGOs, cases of leadership style changes were grouped together (see Table 3).

| Case | Leadership style | Changing to | Leadership style | Frequency of occurrence of case |
|---|---|---|---|---|
| Case 1 | Servant | → | Transformational | 4 |
| Case 2 | Servant | → | Transactional | 2 |
| Case 3 | Transformational | → | Servant | 4 |
| Case 4 | Transactional | → | Servant | 1 |
| Case 5 | Transactional | → | Transformational | 2 |
| Case 6 | Transformational | → | Transactional | 0 |
| Leadership style has not changed | | – | | 4 |

Table 3. Changes in Leadership Styles in the YNGOs Studied
Source: compiled by the authors, based on the research results.

Based on the results presented in Table 3, 13 out of 17 possible changes in leadership style were identified. Cases, where there was no change in the leadership style within the YNGO, were excluded from further analysis and interpretation. Given the qualitative uncertainty created by the research in the YNGOs to clarify the expression of the normative elements of quality assurance, and their difficulty to identify in this context, the impact of changes in leadership styles on the normative elements of quality assurance has not been further assessed.

*Summary of the Cases of Change Analysis*

The cases of leadership styles changes are summarised in Table 4.

| Cases of Change | Quality Culture |
|---|---|
| Case 1: SRV → TRF | In addition to the manager, responsibility for the quality of the YNGO's performance is/may be delegated to each member/volunteer who carries out the activities. The quality assurance function is becoming more delegated to the team, with reflection and analysis of feedback from the representative group.<br>The perception of elements Participation in process improvement activities, Personal commitment of the member/volunteer to the quality of the organisation's performance, Personal responsibility of the member/volunteer for the quality of his/her own work as key to the quality of the YNGO's performance remains, but new elements Leadership and Personal engagement of the member/volunteer to improve his/her working quality are added. |
| Case 2: SRV → TRS | The responsibility for the quality of the YNGO's performance remains solely with the manager. There is an increase in the use of quality assurance methods linked to the accountability of the organisation to justify the legitimacy of its performance.<br>The perception of elements Human resource management, Trust, Personal responsibility of the member/volunteer for the quality of his/her work as key to the quality of an YNGO's performance remains. Elements that are becoming more prominent are Shared values among members/volunteers and Focus and customer (representative group) orientation. |
| Case 3: TRF → SRV | The responsibility for the quality of the YNGO's performance remains with manager, manager and team, and area coordinators, but is/may be delegated to heads of units and structural management bodies. Quality assurance and reflection within the team by the structures remains, but there is also an increase in other forms of quality assurance.<br>The perception of element Human resource management as one of the most important for the quality of the YNGO's performance remains. The Personal responsibility of the member/volunteer for the quality of his/her work and more group level elements (Leadership, Communication (internal communication), Participation in process improvement activities) are emerging. |
| Case 4: TRS → SRV | The responsibility for the quality of the YNGO's performance remains solely with the manager. Quality assurance varies, with a greater emphasis on analysing feedback from participants in activities than on reflection within the team or on the results of monitoring activities against indicators.<br>More individual level elements (Personal commitment of the member/volunteer to the quality of the organisation's performance, Personal responsibility of the member/volunteer for the quality of his/her work) are highlighted as key to the quality of an YNGO's performance. |

| Case 5: TRS → TRF | The responsibility for the quality of the YNGO's performance remains with the manager but could be delegated to the implementers. No major changes in quality assurance were identified. The perception of element Personal responsibility of the member/volunteer for the quality of his/her work as one of the most important for the quality of the YNGO's performance remains and elements Shared values among members/volunteers, Focus and customer (representative group) orientation, Personal commitment of the member/volunteer to the quality of the organisation's performance do not. |
|---|---|

Table 4. Summary of the Impact of Changes in Leadership Styles on the Quality Culture in the YNGOs
Source: compiled by the authors, based on the research results.

Based on the data in Table 4, a model of the impact of changes in leadership styles on the quality culture has been developed for use in the YNGOs. The model is presented schematically in Figure 4.
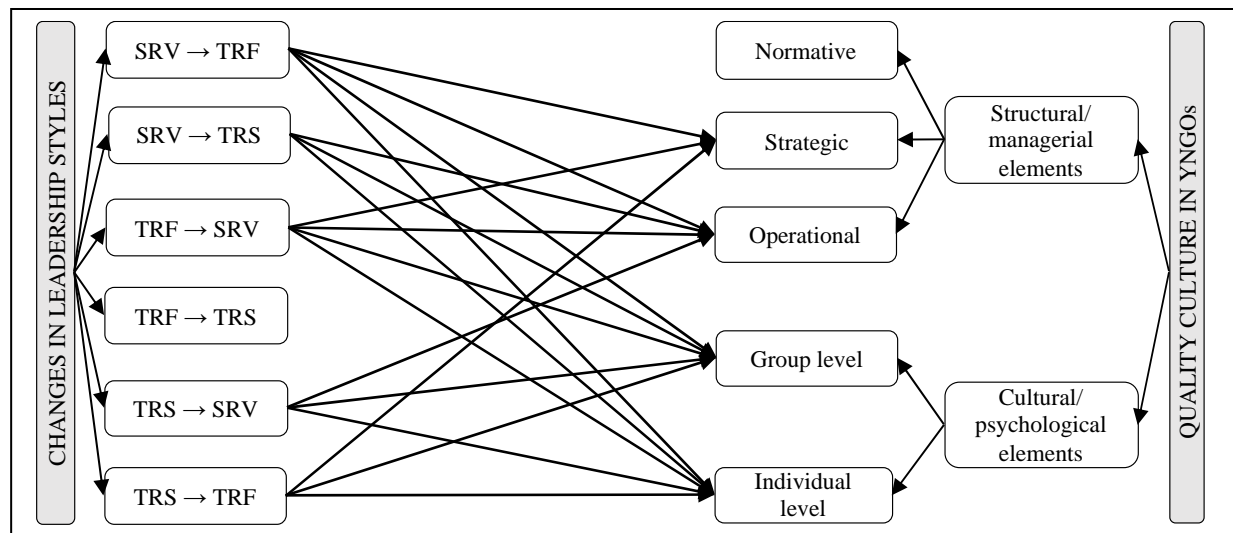


Figure 4. A Model of the Impact of Changes in Leadership Styles on the Quality Culture in the YNGOs
Source: compiled by the authors, based on the research results.

Summarising the impact of changes in leadership styles on the quality culture in YNGOs, it was found that changes affect both the structural/managerial elements and the cultural/psychological elements of the quality culture.

The impact of changes in leadership styles on the strategic elements of quality assurance was identified. Changing: a) servant to transformational and transactional to transformational styles, responsibility for the quality of the YNGO's performance is not only assumed by the manager, but also delegated/may be delegated to each of the implementers; and b) servant to transactional, and transactional to servant styles, responsibility for the quality of the YNGO's performance remains solely with the manager; c) transformational to servant leadership style, responsibility for the quality of the YNGO's performance remains with the manager, the manager's team and area coordinators. However, it is/may be further delegated to heads of units and structural management bodies.

The impact of changes in leadership styles on the operational elements of quality assurance was identified. Changing: a) servant to transformational and transactional to servant leadership styles,

quality assurance is more likely to be carried out through the analysis of feedback (from the participants in the activities or the representative group). However, the reflection within the team is less prominent when transitioning from a transactional to a servant leadership style; b) servant to transformational leadership style change, reflection within the team is more frequent; c) transformational to servant leadership style, quality assurance and reflection within the team are maintained by the structures, but there is an increase in the number of methods to ensure quality in the YNGOs; d) servant to transactional leadership style, quality assurance methods also increases, but mainly related to the organisation's accountability to its stakeholders; e) transactional to transformational leadership style, there is not a significant change identifying quality assurance methods. In contrast, according to the assessment of the YNGOs managers and members/volunteers themselves, the assessment of quality in YNGOs mainly changes depending on the perception of quality by the manager or the manager and manager's team.

The impact of changes in leadership styles on the cultural/psychological elements of quality culture was identified. As leadership styles change, some of the cultural/psychological elements of a quality culture remain unchanged, while in other cases, more elements become apparent. According to the assessment of the YNGOs managers and members/volunteers, the cultural/psychological elements of a quality culture that are most affected by the change are leadership, human resource management, communication (internal communication) and trust.

## DISCUSSION AND CONCLUSIONS

1. The research found that the theoretical elements of quality culture used in the public sector are appropriate to the population studied, namely YNGOs. The structural/managerial elements of the quality culture in YNGOs consist of the following: a) normative elements of quality assurance: the pursuit of quality in YNGOs is mainly manifested through focused activities and the setting of indicators; b) strategic elements of quality assurance: the responsibility for the ensuring the quality of the YNGO's performance is mainly assumed by the manager or by the manager and manager's team; and c) operational elements of quality assurance: the most common methods employed for quality assurance in YNGOs include reflection within the team and the implementation of the activities carried out by the functions of the structural units. The most important cultural/psychological elements of a quality culture are identified as leadership, human resource management and communication (internal communication).

2. The research produced an additional result regarding the perception of quality in the YNGOs. This was due to the uncertainty of YNGOs managers, defining normative elements of quality assurance in the YNGOs. The definitions of quality of the YNGOs were grouped according to their content, into the

categories of stakeholders' satisfaction and process quality, to expand the definition of quality. The most recurrent sub-categories of the YNGOs perception of quality were identified as the smooth implementation of activities and focused activities based on a strategy or action plan.

3. Considering the specificities of leadership in the NGOs and YNGOs and having identified the leadership styles that have been studied by different authors in the context of NGOs, the research assessed the expression of transformational, transactional and servant leadership styles. The research identified that all leadership styles are applicable in YNGOs with the most frequently observed leadership styles being transformational and servant.

4. The findings have shown the impact of changes in leadership styles on various elements of a quality culture including taking responsibility for the quality of the YNGO's performance, the methods employed for quality assurance, and the cultural/psychological elements perceived to be crucial for the quality of a YNGO's performance. The strategic elements of quality assurance are impacted by all changes in leadership styles, except for the change from servant to transactional and transactional to servant leadership styles. The operational elements of quality assurance are generally not affected, except in the case of a change from a transactional to a transformational leadership style. In contrast, the cultural/psychological elements of the quality culture are impacted by all changes in leadership styles. When there is a change in leadership style within a YNGO, some of these elements are no longer present or become more pronounced.

## IMPLICATIONS

1. Due to the unclear boundaries of quality perception and loosely defined quality aspirations lacking clear objectives the YNGO needs to find consensus and define the concept of quality within the organisation. This includes determining how quality is manifested in its activities and establishing a monitoring mechanism for quality assessment. While previous studies have analysed NGOs in general terms, the results of our study can be used to define the notion of quality in a specific YNGO, involving stakeholders at all levels of the organisation's structure.

2. Based on the construct of quality culture in the YNGOs, as defined in previous studies and refined in this study, and by assessing the *status quo* in each organisation, the relevant categories of elements (strategic/managerial and/or cultural/psychological) can be further developed in the particular YNGO in a targeted way to consolidate the perception of quality culture in the organisation.

3. The problem of the use of "management/leadership" style terms in Lithuanian terminology was revealed. The current term "vadovavimo stilius" in Lithuanian (which translates to "management style" in English) should be replaced with "lyderystės stilius" (which translates to "leadership style" in

English) or "vadovo lyderystės stilius" (which translates to "leadership styles of managers" in English) in Lithuanian, as they are literal terms with distinct meanings.

4. The YNGO can make more precise decisions and choose more targeted measures to foster the continuous development of a quality culture in the YNGO, by using the elements of a quality culture highlighted in this study, which is affected by a change in leadership style.

## POSSIBLE DIRECTIONS FOR FURTHER RESEARCH

1. Further quantitative research could be carried out to statistically test the significance of the relationship between changes in leadership styles and the elements of quality culture in YNGOs.

2. Further research could assess whether the impact of changes in leadership styles in YNGOs is influenced by the manager's previous management experience, the size of the team they manage, the geographical context, membership of an umbrella organisation or other internal/external factors.

## REFERENCES

Adomavičienė, G. and Pukelytė, R. (2010), "Kokybės kultūra aukštojo mokslo institucijoje: dimensijos ir kriterijai", Profesinis rengimas: tyrimai ir realijos, 19, pp. 12-22.

Avolio, B. J. and Bass, B. M. (1991), The full-range of leadership development. Center for Leadership Studies, Binghamton, New York, NY.

Aželytė, D. and Kaušylienė, A. (2008), "Vadovavimo stilių įtaka ugdymo įstaigos kaitai", Edukacinės studijos, 5, pp. 14-26.

Bass, B. M. (1985), "Leadership: Good, better, best", Organizational dynamics, 13(3), pp. 26-40.

Bendermacher, G. W. G., Oude Egbrink, M. G. A., Wolfhagen, I. H. A. and Dolmans, D. H. J. M. (2016), "Unravelling quality culture in higher education: a realist review", Higher Education, 73(1), pp. 39-60.

Bitinas, B., Rupšienė, L. and Žydžiūnaitė, V. (2008), Kokybinių tyrimų metodologija: vadovėlis vadybos ir administravimo studentams. S. Jokužio leidykla-spaustuvė, Klaipėda.

Carless, S. A., Wearing, A. J. and Mann, L. (2000). "A Short Measure of Transformational Leadership", Journal of business and psychology, 14(3), pp. 389-405.

Cronemyr, P., Bäckström, I. and Rönnbäck, Å. (2017), "Quality culture deployment – using behaviours to explain, diagnose and improve a quality culture", International Journal of Quality and Service Sciences, 9(3/4), pp. 498-518.

Estrada, C. R. and Carranza, M. T. G. (2016), "Leadership Style in Nonprofit Organizations, the Mexican Case", International Journal of Business, Humanities and Technology, 6(4), pp. 25-34.

European University Association (2006), Quality Culture in European Universities: A Bottom-up Approach. Report on the Three Rounds of the Quality Culture Project 2002-2006. European University Association, Brussels.

Gaižauskaitė, I. and Valavičienė, N. (2016), Socialinių tyrimų metodai: kokybinis interviu. VĮ Registrų centro Teisinės informacijos departamentas, Vilnius.

Harter, S. (2002), "Authenticity", in Snyder, C. R. and Lopez S. J. (Eds.), Handbook of positive psychology, Oxford University Press , Oxford, United Kingdom, UK, pp. 382-394.

Hildesheim, C. and Sonntag, K. (2020), "The Quality Culture Inventory: a comprehensive approach towards measuring quality culture in higher education", Studies in Higher Education, 45(4), pp. 892-908.

Jackson, P. R. (2004), "Employee commitment to quality: Its conceptualisation and measurement", International Journal of Quality & Reliability Management, 21(7), pp. 714-730.

Johnson, J. J. (2000), "Differences in Supervisor and Non-Supervisor Perceptions of Quality Culture and Organizational Climate", Public Personnel Management, 29(1), pp. 119-128.

Kammerhoff, J., Lauenstein, O. and Schütz, A. (2019), "Tuning into performance and satisfaction in nonprofit orchestras: One link between transformational leadership and satisfaction is through reduction in conflict", Nonprofit Management and Leadership, 30(2), pp. 321-338.

Kasiulis, J. and Barvydienė, V. (2005), Vadovavimo psichologija. Technologija, Kaunas.

Kutkaitis, A. and Petrulis, A. (2014), "Vadovavimo stilių vertinimas Klaipėdos ugdymo įstaigose", Regional Formation and Development Studies, 1(11), pp. 171-182.

LR Jaunimo politikos pagrindų įstatymas 2003 (Valstybės žinios, 2003, Nr. 119-5496).

Lutz Allen, S., Smith, J. E. and Da Silva, N. (2013), "Leadership Style in Relation to Organizational Change and Organizational Creativity: Perceptions from Nonprofit Organizational Members", Nonprofit Management and Leadership, 24(1), pp. 23-42.

Mohd Ali, H. and Borhandden Musah, M. (2012), "Investigation of Malaysian higher education quality culture and workforce performance", Quality assurance in education, 20(3), pp. 289-309.

Nilsson, L., Antoni, M. and Dahlgaard, J. (2005), "Continuous improvement in product development", International Journal of Quality & Reliability Management, 22(8), pp. 753-768.

Ntim, S. (2014), "Embedding quality culture in higher education in Ghana: quality control and assessment in emerging private universities", Higher Education, 68(6), pp. 837-849.

Palumbo, R. (2016), "Challenging Servant Leadership In The Nonprofit Sector: The Side Effects Of Servant Leadership", Journal of Nonprofit Education and Leadership, 6(2), pp. 81-98.

Petrulis, A. (2017), "Darbuotojams priimtiniausias vadovavimo stilius organizacijoje", Regional formation and development studies, 1(21), pp. 109-121.

Petrulis, A., Verkulevičiūtė-Kriukienė, D. and Razma, A. (2021), "Vadovavimo stilių vertinimas organizacijose", Regional Formation and Development Studies: journal of social sciences, 3(35), pp. 87-100.

Pipirienė, V. and Sinkevičiūtė, E. (2010), "Nevyriausybinės organizacijos: šiuolaikinis požiūris", Viešasis administravimas, 1/1(25/26), pp. 73-80.

Podsakoff, P. M., MacKenzie, S. B., Moorman R. H. and Fetter R. (1990), "Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors", The Leadership Quarterly, 1(2), pp. 107-142.

Rowold, J. and Rohmann, A. (2009), "Relationships Between Leadership Styles and Followers' Emotional Experience and Effectiveness in the Voluntary Sector", Nonprofit and voluntary sector quarterly, 38(2), pp. 270-286.

Staufenbiel, T., and Hartz, C. (2000), "Organizational Citizenship Behavior: Entwicklung und erste Validierung eines Messinstruments", Diagnostica, 46(2), pp. 73-83.

Stewart, A. J. (2016), "Exploring Nonprofit Executive Turnover", Nonprofit Management & Leadership, 27(1), pp. 43-58.

Šešić, M. D. and Stefanović, M. (2017), "Leadership styles and values: the case of independent cultural organizations", Cultural Management: Science and Education, 1(1), pp. 29-37.

Valiuškevičiūtė, A. and Žiogevičiūtė, A. (2006), "Universitetų ir kolegijų personalo atsakomybė už aukštojo mokslo kokybės vadybą", Aukštojo mokslo kokybė, 3, pp. 44-67.

Van Dierendonck, D. (2011), "Servant Leadership: A Review and Synthesis", Journal of Management, 37(4), pp. 1228-1261.

Zeitz, G., Johannesson, R., & Ritchie Jr, J. E. (1997), "An Employee Survey Measuring Total Quality Management Practices and Culture: Development and Validation", Group & Organization Management, 22(4), pp. 414-444.

Žydžiūnaitė, V. and Sabaliauskas, S. (2017), Kokybiniai tyrimai: principai ir metodai: vadovėlis socialinių mokslų studijų programų studentams (Antroji laida.). Vaga, Vilnius.

# TO AI OR NOT TO AI? GENERAL PUBLIC ATTITUDES TOWARDS THE USE OF ARTIFICIAL INTELLIGENCE: CASE OF ZADAR COUNTY

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## ABSTRACT

This research paper considers various aspects of the application of artificial intelligence in different areas of human activity and the general attitudes of users about the use of artificial intelligence. The intensive development and increasingly frequent application of artificial intelligence in various areas of human activity entails some serious challenges for humanity. The application of artificial intelligence can improve efficiency and productivity in various fields, but it can also lead to job losses and changes in the labor market. User attitudes toward the use of artificial intelligence can vary significantly depending on many sociodemographic factors, such as age, education, and experience with technology. Also, the ethical issues related to the use of artificial intelligence are numerous and complex and require careful consideration. Issues such as data privacy, liability for decisions made by artificial intelligence and the impact on society are just some of those that must be considered when applying artificial intelligence. This research examines various aspects of the application of artificial intelligence and provides a brief overview of the general attitudes and opinions of the residents of Zadar county regarding the use of artificial intelligence and ethical issues related to it.

*Keywords: artificial intelligence; AI application; public attitudes.*

## INTRODUCTION

Modern technologies have become integral to people's daily lives, with widespread usage in both personal and professional activities. In recent years, the computer industry has placed special emphasis on developing algorithms and software solutions that enable these technologies to learn and adapt to different situations in a way similar to the human brain. This primarily refers to the field of Artificial Intelligence (AI), which has experienced significant growth in recent years due to the increase in computing power and the availability of big data sets. This has enabled further development of machine learning and deep learning technologies.

There are numerous definitions of AI that can be found across different sources. For example, in the online edition of the Croatian Encyclopedia, AI is defined as a part of computer science that deals with the development of computers' ability to perform tasks that require some form of intelligence (Croatian

Encyclopedia, 2021). Regardless of the definition, some of the main outlines of AI are that it has the ability to navigate new challenging situations in different contexts, understand human language, detect subtle differences in the state of the system under observation and draw complex conclusions based upon them. In a nutshell, humanity is witnessing the development of a powerful disruptive technology that is likely to change the way we think, work, and live in general.

The term AI is mainly used to denote the intelligence property of a "non-living" computer system or a machine, although in practice a significant part of these machines is not necessarily intelligent. According to the Croatian encyclopedia, an intelligent system is considered to be: "[…] any system that exhibits adaptive behavior, learns based on experience, uses large amounts of knowledge, exhibits the properties of awareness, communicates with humans using natural language and speech, allows errors and ambiguities in communication, etc." (Croatian Encyclopedia, 2021), which is in accordance with the previously mentioned. Furthermore, the same source states that the main functions of an intelligent system are collecting and processing information, interacting with the work environment, communicating with humans or other intelligent systems, collecting and processing knowledge, inference, and planning. (Croatian Encyclopedia, 2021)

This paper provides a brief overview of the evolution of AI and its applications in various areas of human activity, with a special focus on ethical issues that are crucial in this context. Additionally, a survey was conducted to examine the general public attitudes and opinions in Zadar county regarding various aspects of AI use. The results obtained from the survey are analyzed and discussed in later chapters.

## THE EVOLUTION OF AI

Back in 1947, Alan Turing gave lectures on the vision of creating artificial intelligence at the London Mathematical Society. In his famous paper "Computing Machinery and Intelligence", Turing posed the question of whether machines could engage in cognitive processes (Turing, 1950). In order to get an answer to this question, it is first necessary to define what thinking is. However, it is almost impossible to define thinking unambiguously, as the process itself differs from person to person. Turing also devised the so-called Turing test, which examines a machine's ability to show intelligence indistinguishable from that of human beings. The main idea of the Turing test was that if a machine succeeds in the test, then it is qualified to be labeled as artificial intelligence (Xu et al., 2021). In the article "Computing Machinery and Intelligence", in addition to the Turing test, Turing also introduced the term *learning machine* and presented the idea of the *child machine*. According to Russell and Norvig (2020), the child machine represented a paradigm shift because it evolved around solving simpler problems and simulating the mind of a child instead of previous attempts to simulate the mind of an

adult. Researchers have observed that, in order to possess human intelligence, it is necessary for a machine to possess the trifold manifestation of intelligence: perceptual intelligence (the ability to touch, hear, see, etc.), cognitive intelligence (the ability to reason, induce and acquire a higher level of knowledge) and decisional intelligence (the ability to make decisions), echoing the holistic perspective on cognition discussed by Aizawa (2003).

However, the inception of contemporary AI research is attributed to John McCarthy, who introduced the term "artificial intelligence" at a Dartmouth College conference in 1956, which subsequently led to the emergence of AI as a scientific discipline. The first created AI programs did not understand what they were calculating and solving, and problems could only be solved if they were syntactically simplified. Problems were solved by trying all possible solutions. In 1969, algorithms for multi-layer neural networks were discovered. In 1980, AI became popular again as more researchers at different universities were working on the so-called "expert systems". (Xu et al., 2021)

In the 1990s, AI research shifted towards developing machine learning algorithms, which allowed computers to learn from data and improve their performance over time. This led to significant advances in areas such as natural language processing, computer vision, and speech recognition. In the 2000s, the availability of large amounts of data and the development of more powerful computing hardware enabled the development of deep learning algorithms, which have driven many recent advances in AI. Deep learning algorithms can learn complex patterns from data and have been used to achieve state-of-the-art performance in tasks such as image and speech recognition. In the present day, AI is being applied in a wide range of fields, from healthcare and finance to transportation and entertainment. AI technologies such as machine learning and natural language processing are being used to develop intelligent systems that can interact with humans in more natural ways, and to solve complex problems that were previously thought to be beyond the reach of computers. The field of AI continues to evolve rapidly, with ongoing research into areas such as reinforcement learning, generative models, and transfer learning. As AI technologies continue to advance, they are likely to have an even greater impact on humanity in the coming years.


## ETHICAL ISSUES

Ethics can be defined as a set of moral behaviors that are accepted by a society or social group. Science defines morality as a social phenomenon that concerns concrete human actions limited by social rules. Currently, there are numerous ongoing debates regarding the use of the term "artificial" when referring to primarily human abilities such as intelligence. (Croatian Encyclopedia, 2021)

Yudkowsky argues that the problem of defining "artificial intelligence" and thus of ethics within this field arises from the assumption that individuals fully comprehend the concept of intelligence,

including artificial intelligence. Yudkowsky also emphasizes that artificial intelligence is not a fully defined and established science, but rather exists at the boundaries of our current understanding, which are constantly shifting. (Yudkowsky, 2008)

In her work, Marija Putica emphasizes the fundamental definitional problem of artificial intelligence, which includes the ubiquitous problem of ethical or unethical use of artificial intelligence. The definition of intelligence itself remains a contentious issue with no single consensus. Putica believes that the key lies in defining the main goal of artificial intelligence, which can be divided into two categories: building intelligent machines and understanding the nature of intelligence. Ultimately, the main goal is unique and involves building an artificial brain capable of perceiving, under-standing, and predicting. (Putica, 2018)

In 2018, an independent expert group issued ethical guidelines for reliable artificial intelligence. As the main goal of the guidelines, they state that the task is to pro-mote reliable artificial intelligence. What is meant by the epithet reliable, is stated within three components that should be realized and consistent throughout the entire life cycle of the system. Artificial intelligence should respect all enacted laws and regulations, as well as ensure compliance with ethical principles and values. It should be resilient from both a technical and social perspective. Resilience is a contentious issue because systems can also unintentionally cause damage. The ethical principles defined in the document are: respect for human autonomy, prevention of harm, fairness and explainability. Respect for human autonomy excludes machine manipulation by humans, deception or any form of coercion. The freedom and autonomy of the human being should be fully respected. The ethical principle of explainability is cited as key to building user trust in artificial intelligence systems. (European Commission, 2019)

Yampolskiy argues that classic search-based applications of artificial intelligence, such as spell-checking or text translation, do not raise ethical concerns. However, when we add definitional frameworks to artificial intelligence that refer to the ability of universal problem-solving and recursive self-improvement and emphasize the possibility of surpassing human ability, ethics become an important topic of discussion. (Yampolskiy, 2012)

Drew McDermott believes that the difference is very subtle when it comes to programming an agent that does not violate ethical constraints and an agent that is programmed to follow ethical rules. Also, he adds that it is crucial to determine in advance whether the issue of ethics will be on the programmer or on the system during the execution of the program. The question should not be asked whether the machine will behave ethically, because that same machine does not know the concept of ethics. Instead, the machine should be placed in a situation where it must decide on the correctness of the procedure. (McDermott, 2011)

There are many discussions about the ethics of artificial intelligence, and the future that is directed towards the development of artificial intelligence encourages discussions on the mentioned topic. Pursuing the thesis that technological progress is not a goal but a means to help human action in different spheres of life, may be the path that takes us away from the fear of unethical artificial intelligence. (Müller, 2021)

Neil Postman once stated that while technological ingenuity should be admired, it should not be considered the highest possible form of human achievement. Neil Post-man's statement can be interpreted as a warning against the over-reliance on technology and the tendency to view it as a panacea for all of society's problems. He believed that while technology can be a powerful tool for improving people's lives, it should not be seen as a substitute for human values such as compassion, empathy, and creativity. Instead, he argued that technology should be used in service of these values, rather than as a replacement for them. (Postman, 1992)

## APPLICATIONS OF AI

The development of AI-based technologies has been intensifying in recent years, and there are significant applications of such technologies in various areas of human activity. Research shows that the global artificial intelligence market size was valued at USD 136.55 billion in 2022, with a growth forecast of about 1300% by the end of this decade. (Grand View Research, 2023) In addition to that, almost 87% of global organizations believe that the use of AI can increase their competitiveness (Ransbotham et al., 2020), while 83% of early adopters of AI technologies believe that the implementation of AI systems in their business is one of the highest priorities (Fatemi, 2019). In terms of the workforce, there is general concern that the development and application of AI systems could lead to the automation and elimination of large numbers of jobs worldwide. However, research shows that by 2025 nearly 100 million new jobs will be created in various AI-related industries. (World Economic Forum, 2020)

AI has significant applications in various fields of human activity, such as e-commerce, robotics, healthcare, education, production, marketing, tourism, transportation, agriculture, energy and many more. For example, in healthcare, AI-driven diagnostic tools have exhibited potential for early disease detection, improving patient outcomes (Obermeyer and Emanuel, 2016). Moreover, AI-powered predictive analytics are aiding personalized medicine through analysis of medical data (Johnson et al., 2020). In the financial domain, AI algorithms enhance risk assessment, fraud detection, and trading strategies, optimizing decision-making (Ilag and Athave, 2019). AI-driven advancements are also evident in autonomous vehicles, where machine learning algorithms facilitate real-time navigation and collision avoidance (Bojarski et al., 2016). Natural language processing (NLP) has revolutionized

communication interfaces. AI-driven NLP models, such as ChatGPT, enable human-like interaction between users and machines, enhancing chatbots, translation services, and content generation (Brown et al., 2020). AI-powered computer vision technologies have revolutionized sectors like agriculture, by enabling precision farming through plant disease detection (Abade et al., 2021), and retail, by enhancing customer experience through automated checkout systems (James et al., 2021).

The aforementioned applications of AI represent just a small fraction of all possible uses of AI. It is beyond the scope of this paper to name all of them, but some of the of the most common other applications include web search, digital personal assistants, machine translations, smart homes, cities and infrastructure, fighting disinformation and many more. (European Parliament, 2020)

## METHODOLOGY

For the purposes of the research, a questionnaire was constructed which, in addition to the sociodemographic characteristics of the respondents, sought to determine the extent to which the respondents are familiar with the concept of artificial intelligence and how much they use some of the well-known applications that are based on AI, what are their views on the application of AI in different areas of human life, and on the ethics of AI application. In addition to that, a partial GAAIS (*General Attitudes towards Artificial Intelligence Scale*) (Schepman & Rodway, 2020; Schepman & Rodway, 2022) was used in the questionnaire, which was previously adapted and reused by Jönsson (2021) to measure the general attitudes of users towards the use of AI. Jönsson used only eight of the twenty particles contained in the original GAAIS scale. The first four particles were used to measure positive attitudes and the other four were used to measure negative attitudes towards AI using a five-point Likert scale. To validate this transformation, Jönsson conducted a Cronbach test for both categories, yielding a Cronbach $\alpha$ of 0.854 for the positive composite score and a Cronbach $\alpha$ of 0.765 for the negative category. Lastly, for the purpose of deriving a composite score from this partial GAAIS scale, the authors aggregated the initial four component scores and subsequently subtracted the summation of the remaining four component scores. The resultant composite value varies within the interval of +16 to -16, wherein the utmost positive score signifies an entirely affirmative disposition, while the peak negative score signifies an entirely negative disposition concerning Artificial Intelligence (AI). The study was carried out in February 2023 within Zadar county, Republic of Croatia, utilizing an online survey questionnaire administered to a convenient sample of participants. The invitation to participate in the research was sent via social networks and via e-mail. Participants were guaranteed anonymity and filling in the questionnaire was voluntary. The introductory part of the questionnaire contained the explanation and the aim and purpose of the research.

A total of 265 participants took part in the research, of which 68.9% were female (N=182) and 31.1% were male (N=82). The majority of respondents were young, aged between 18-27 (61.1%), followed by middle-aged respondents between 28-37 (17.7%) and 38-47 (14.3%), and the least number of respondents aged 48-57 (6.8%). Slightly less than half of the respondents completed secondary school as their highest level of education (47.2%), while slightly more than a third completed university undergraduate (16.2%) or graduate (22.6%) studies. The smallest share of respondents completed a master's degree or doctorate (7.9%) or some professional undergraduate study (5.3%). At the same time, the largest part of respondents (48.6%) was educated (or is still being educated) in the field of social sciences (48.8%), followed by technical (21.8%) and humanities (10.9%), while the least number of respondents were educated in interdisciplinary (7.8%) and natural sciences (4.3%) fields. Among other sociodemographic characteristics, respondents also answered questions about their current employment status and average income. Almost two-thirds of the respondents were students, mostly full-time students (46%) who are not employed, and slightly less those who work in parallel with their studies (14.1%). The rest of the respondents, a little more than a third of them, were employed in the private (23.6%) or public (14.4%) sector or are independent private entrepreneurs (1.1%). In accordance with their employment status, most respondents have a monthly income of less than 500 euros (50.4%), while the rest of the sample includes equally represented categories of respondents with monthly incomes of 500-1000 euros (14.6%) and 1000-1500 euros (19.2%), and slightly less of those with above-average incomes in the range of 1500-2000 euros (8.5%) or more than 2000 euros (7.3%).

## RESULTS AND DISCUSSION

The participants were asked to self-assess their understanding of AI on a five-point Likert scale, where 1 indicated that they didn't understand the term at all and 5 indicated their complete understanding of the term. The average rating of participants' understanding of AI was 3.513 with a standard deviation of 0.926, which suggests that there was a moderate amount of variation in the ratings given by participants. In the next question, participants were given six definitions of AI and were asked to rate how accurate they were. The first four definitions could be considered completely accurate as they were taken from the scientific literature, while the last two were intentionally constructed in a way that does not correspond to the concept of artificial intelligence. The main goal of this question was to determine how objective respondents' self-assessment of their understanding of AI was. According to the obtained results, 25.66% of respondents recognized the first definition as completely ac-curate, and 42.64% of respondents recognized it as mostly accurate, while 12.07% of respondents recognized it as mostly or completely inaccurate. The second definition was recognized as completely accurate by 25.66% of respondents and as mostly accurate by 28.68% of respondents, while 29.81% of respondents

recognized it as mostly or completely inaccurate. The third definition was recognized as completely accurate by 21.13% of respondents and as mostly accurate by 31.32% of respondents, while 16.22% of respondents recognized it as mostly or completely inaccurate. The fourth definition was recognized equally as completely or mostly accurate by 46.41% of respondents, while almost a quarter of respondents (24.53%) recognized it as mostly or completely inaccurate.

The remaining two definitions were deliberately given in the same context as the previous four but did not correspond to the real meaning of the term AI. Namely, the fifth definition given in this question was "Artificial intelligence is a human-robot", and the sixth definition was "Artificial intelligence is a machine that will replace human workforce". These definitions are not scientifically accurate as they do not reflect the complexity of artificial intelligence and its applications. Also, while it is true that artificial intelligence has the potential to automate certain tasks and jobs, it is unlikely that it will completely replace human workers. As for the results, the fifth definition was recognized as completely inaccurate by only 16.98% of respondents and as mostly inaccurate by 15.47% of respondents, while almost half of the respondents (41.88%) recognized it to be mostly or completely accurate. The sixth definition proved to be even more deceiving, as 53.95% of respondents recognized it to be completely or mostly accurate, while only 17.35% of respondents realized that the definition was not accurate.

These results suggest that respondents, despite rating their understanding of the concept of artificial intelligence as good, are relatively superficially acquainted with the concept itself. Therefore, a correlation coefficient between the degree of education and self-assessment of understanding of the concept of AI, and the assessment of the accuracy of the offered definitions has been calculated.

| | Correlation coefficients r | |
|---|---|---|
| Definition accuracy assessment | Degree of education | Self-assessment of understanding AI |
| First definition | 0.216 | 0.217 |
| Second definition | -0.013 | -0.013 |
| Third definition | 0.113 | 0.143 |
| Fourth definition | 0.177 | 0.177 |
| Fifth definition | -0.025 | -0.035 |
| Sixth definition | -0.168 | -0.081 |

Table 1. Correlation coefficients between education level and self-assessed understanding of the concept of AI, and assessment of accuracy of the offered AI definitions (source: author's work)

From the data presented in Table 1, there are no significant correlations between education level and self-assessed understanding of the concept of AI and recognition of the level of accuracy of the offered AI definitions. There was, however, a weak positive correlation (r=0.274) between education level (average of 3.366, with standard deviation of 1.469, where 1 denotes the lowest level and 6 denotes the highest level of education) and self-assessed understanding of the concept of AI (average of 3.513, with standard deviation of 0.925), so a t-test was performed to determine whether there is a statistically

significant difference in self-assessment of understanding of the concept of artificial intelligence with respect to the level of education of respondents. The obtained results of the t-test (t=1.381, with N=265) indicate that there is no significant difference (p<0.05) in self-assessment of understanding of the concept of artificial intelligence with respect to the level of education of respondent, i.e. that the respondents level of education didn't influence their understanding of the concept of artificial intelligence significantly.

| | 1 – completely disagree | 2 – mostly disagree | 3 – nor agree, nor disagree | 4 – mostly agree | 5 – completely agree |
|---|---|---|---|---|---|
| I am interested in using artificially intelligent systems in my daily life. | 6.04% | 10.19% | 30.57% | 30.19% | 23.02% |
| There are many beneficial applications of artificial Intelligence. | 3.02% | 3.40% | 15.85% | 41.13% | 36.60% |
| Artificial Intelligence can provide new economic opportunities. | 3.02% | 4.15% | 22.64% | 38.49% | 31.70% |
| Artificial Intelligence is exciting. | 6.42% | 9.06% | 26.42% | 31.32% | 26.79% |
| I think artificial Intelligence is dangerous. | 5.66% | 12.08% | 38.87% | 23.77% | 19.62% |
| Organizations use artificial Intelligence unethically. | 4.15% | 9.43% | 46.79% | 26.04% | 13.58% |
| I shiver with discomfort when I think about future uses of artificial Intelligence. | 12.45% | 22.26% | 32.83% | 18.87% | 13.58% |
| Artificial Intelligence is used to spy on people. | 8.68% | 19.25% | 38.49% | 21.13% | 12.45% |

Table 2. Partial GAAIS results1 (Schepman & Rodway, 2020; adapted by Jönsson, 2021) (source: author's work)

Table 2 shows the percentages of respondents' answers to individual particles of the partial GAAIS scale. For each particle, two highest values are highlighted, i.e. the highest value is highlighted with a darker shade of gray, while the second highest value is highlighted with a lighter shade of gray. From the distributions of responses to individual particles of the partial GAAIS scale, it is evident that the respondents were mostly in agreement, or (in a slightly smaller percentage) completely in agreement with positive statements about artificial intelligence, while they had a predominantly neutral attitude towards negative statements or mostly agreed with them to a great extent. One possible explanation for these results is that people generally hold a positive view of artificial intelligence and its potential benefits. However, they may be less familiar with its potential negative consequences, resulting in more neutral responses to negative statements about AI. Additionally, composite values of the respondents' answers to all eight particles were calculated. The first four particles were summed with a positive sign

[1] Highest value in each row is highlighted with a darker shade of gray, while the second highest value is highlighted with a lighter shade of gray.

and the last four with a negative sign. The resulting values ranged from +16 to -16, where an extremely positive result (+16) indicated very positive attitudes towards artificial intelligence, while an extremely negative result (-16) indicated very negative attitudes among the respondents. Values closer to 0 indicated neutrality in the respondents' attitudes towards the use of artificial intelligence. The distribution of the composite results can be seen in Figure 1.
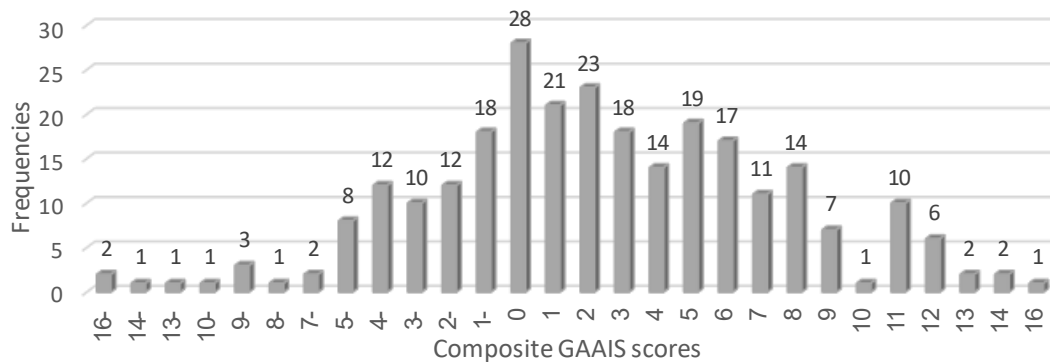


Figure 1. Partial GAAIS composite score distribution (source: author's work)

In the following question, the respondents were offered some of the most popular smartphone applications based on the use of AI, with a request to rate whether they are familiar with the applications and how often they use them. The list of applications was found in various tech blog posts that deal with comparisons and evaluations of such applications and that create lists of the most popular applications. The main objective of this question was to determine whether and to what extent the participants use AI-based technologies that are readily available to them on a daily basis, mostly free of charge if they own smartphones. The respondents were offered the following 15 applications, all of which are based on AI algorithms: *Siri, Alexa, Cortana, ELSA (English Language Speech Assistant), Socratic, Youper, Replika, Robin, Hound, FaceApp, Google Assistant, SwiftKey, Hopper, ChatGPT* and *Fyle* (Top 30 Artificial Intelligence Apps for iOS and Android, 2022)

The obtained results suggest that the majority of these applications are known to the participants (i.e. they are aware of their existence), but do not use them at all. Specifically, only for the applications Siri, Alexa, FaceApp, Google Assistant, Swiftkey and ChatGPT did a small number of participants state that they use them frequently or even daily (from 2% to 9%), while for most other applications they stated that they either do not know about them (from 10% to 15%) or never use them (around 80% of participants). Even for the previously mentioned applications, for which some of the participants stated that they use them frequently, the largest share of participants (from 50% to 60%) stated that they never use them. Based on the obtained answers, it can be concluded that in most cases, the participants very rarely use these technologies or do not use them at all, while a significant portion of the participants are not even familiar with the mentioned technologies. This suggests a general lack of interest in using AI-

based technologies, which is indicative considering that the vast majority of participants are relatively highly educated and of younger age.

In the next two questions, the participants were asked to evaluate to what extent they consider the use of artificial intelligence in everyday life to be ethically correct. The questions differed in a way that the first question emphasized the condition that such technology is used autonomously (without direct human control), while the second question emphasized the use of artificial intelligence provided that it is fully controlled and regulated by humans. Both of the aforementioned questions used a five-point Likert scale. The participants were able to express their views by choosing a rating between 1 and 5, where a rating of 1 meant that they considered such use of AI in people's everyday lives to be completely unethical, while a rating of 5 meant that they considered such use to be completely ethical. The results are shown in the following figure (Figure 2).
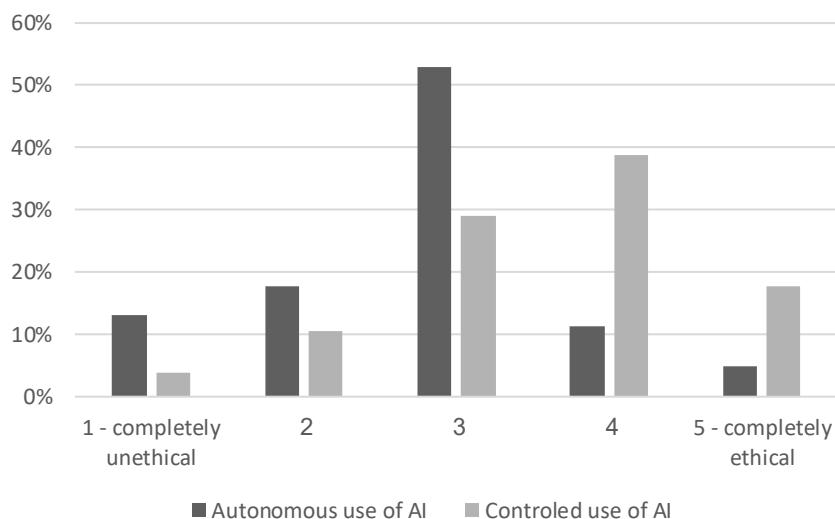


Figure 2. Answers to the question about the ethics of using AI in everyday life with/without human control (source: author's work)

As for the first question (autonomous use of AI), the participants responded with an average rating of 2.769 (standard deviation 0.982), while on the second question (AI fully controlled by humans) they responded with an average rating of 3.562 (standard deviation 1.021). The results indicate that the use of AI in everyday life would be significantly more acceptable to participants if it was fully controlled by humans (t=9.109, p<0.05).

Finally, the last question was related to the potential impact (according to the participants' opinions) of using artificial intelligence to improve quality and productivity in certain areas of human activity. The question consisted of 15 particles, each representing a certain area of human activity, and the answers were offered in the form of a semantic differential on a scale from -2 to +2, where a rating of -2

represented a completely negative impact and a rating of +2 represented a completely positive impact. Ordered average scores (and standard deviations) of all answers are shown in Table 3.

| Area of human activity (with some examples) | (-2) | Average | (+2) | St. dev. |
|---|---|---|---|---|
| *Robotics (e.g. transfer and assembly of things in factories, cleaning, inventory, etc.)* | | | 1,080 | 0,972 |
| *E-commerce (e.g. virtual shopping assistants, security systems, etc.)* | | | 0,989 | 0,891 |
| *Computer games (e.g. game testing, player behavior prediction, etc.)* | | | 0,931 | 1,081 |
| *Agriculture (e.g. soil quality identification, land cultivation, etc.)* | | | 0,901 | 1,073 |
| *Education (e.g. administrative tasks, creation of educational content, voice assistants, personalized* | | | 0,772 | 1,085 |
| *Finance (e.g. potential fraud detection, risk prediction in investments or lending, etc.)* | | | 0,700 | 1,090 |
| *Marketing (e.g. market analysis, customer targeting, customer support)* | | | 0,674 | 1,127 |
| *Data security (e.g. threat prevention, unusual activity detection, etc.)* | | | 0,616 | 1,150 |
| *Tourism (e.g. recommendation systems, guest reception and service, etc.)* | | | 0,536 | 1,142 |
| *Transport (e.g. heavy cargo transport, traffic congestion management, shared passenger* | | | 0,534 | 1,173 |
| *Healthcare (e.g. automatic disease detection, general diagnostics, surgeries, etc.)* | | | 0,439 | 1,274 |
| *Automotive industry (e.g. autonomous driving, driving assistance systems, etc.)* | | | 0,430 | 1,214 |
| *Everyday human activities (e.g. face recognition, voice assistants, etc.).* | | | 0,413 | 1,199 |
| *Social media (e.g. analysis and understanding of post content, user content recommendations, etc.)* | | | 0,330 | 1,167 |
| *Human resources (e.g. candidate acceptability assessment, etc.)* | | | -0,398 | 1,204 |

Table 3. The respondent's opinions on potential impact of using artificial intelligence to improve quality and productivity in certain areas of human activity (source: author's work)

Based on the results presented in this table, it is evident that the participants have mostly positive attitudes towards the potential impact of AI on areas such as robotics, e-commerce, computer games and agriculture, while their attitudes towards the impact of AI on areas such as education, finance, marketing and data security are only slightly less positive. Also positive, but to a lesser extent, are the participants' attitudes towards the potential impact of AI in areas such as tourism, transport,

healthcare, automotive industry and everyday human activities (such as face recognition or voice assistants). The least positive attitude was expressed by the participants in the context of AI application in the field of social media, potentially due to poor and inappropriate user content recommendations that social network users often encounter. Finally, the only negative rating referred to the participants' opinion on the use of AI in the field of human resources, where the specific example given was the assessment of candidate acceptability when applying for a particular job. These results can serve as a basis for future research, as it would be interesting to further investigate the reasons why respondents have such positive or negative attitudes.

## CONCLUSION

The results of the research indicate a division of opinions on artificial intelligence (AI). AI has the potential to bring many benefits to society, such as improving efficiency and productivity, enhancing healthcare and education, and helping to solve complex problems. For example, AI can be used to improve medical diagnosis and treatment, personalize education, and optimize supply chain management. However, it also has its drawbacks, such as the potential for job displacement, bias and discrimination, and concerns about privacy and security. These concerns must be addressed to ensure that the benefits of AI are realized while minimizing its negative impacts.

One of the main concerns with the application of AI is ethics. The research shows that respondents are more accepting of the use of AI in everyday life if it is controlled by humans. Ethical considerations in the use of AI in everyday life include ensuring that AI systems are transparent, accountable, and fair. It is also important to ensure that AI systems respect human rights and values. This means that AI systems should be designed and used in a way that respects human dignity, autonomy, and privacy.

The public is generally cautious when it comes to AI and there are fears that its rapid development could lead to unforeseeable consequences for humanity. These fears are not unfounded as there have been instances where AI systems have caused harm or behaved in unexpected ways. Respondents believe that the use of AI in certain areas of human activity (such as robotics, e-commerce, agriculture, education, finance, marketing, data security, etc.) is desirable and can have mostly positive impact. However, they also believe that all these applications should be controlled by humans. This control can take many forms, such as setting standards for the development and use of AI systems or establishing regulatory frameworks to ensure their safe and responsible use.

In conclusion, the research underscores the dual nature of artificial intelligence (AI), as it offers potential benefits while also raising substantial concerns. Ethical considerations and human oversight are crucial for responsible AI integration. The cautious approach of the public and the need for

controlled development further emphasize the importance of balancing AI's promise with its potential risks.

This research provides guidelines on determining the areas in which the application of AI would be either more or less desirable. It is recommended that the research be expanded and repeated on a larger sample to monitor changes in attitudes towards the application of AI along with its development. This will help policymakers and other stakeholders make informed decisions about how to best harness the potential of AI while minimizing its risks.

# REFERENCES

Abade, A., Ferreira, P. A., and de Barros Vidal, F. (2021), "Plant diseases recognition on images using convolutional neural networks: A systematic review", Computers and Electronics in Agriculture, Vol. 185

Aizawa, K. (2003), The Systematicity Arguments. Springer, New York

Bojarski, M., et al. (2016), "End to end learning for self-driving cars", arXiv preprint arXiv:1604.07316.

Brown, T., et al. (2020), "Language models are few-shot learners", Advances in neural information processing systems, Vol. 33, pp. 1877-1901.

Croatian Encyclopedia (2021), Croatian Encyclopedia (online edition). Miroslav Krleža Institute of Lexicography. (accessed 12 March, 2023), available at: http://www.enciklopedija.hr/Natuknica.aspx?ID=63150

European Commision (2019), "Ethics guidelines for trustworthy AI", First published 8 April 2019. (accessed on 15 March 2023), available at: https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai

European Parliament (2020), "What is artificial intelligence and how is it used?" [online] Available at: https://www.europarl.europa.eu/news/en/headlines/society/20200827STO85804/what-is-artificial-intelligence-and-how-is-it-used (accessed on 26 March 2023).

Fatemi, F. (2019), "3 Ways Artificial Intelligence Is Transforming Business Operations." [online] Forbes. Available at: https://www.forbes.com/sites/falonfatemi/2019/05/29/3-ways-artificial-intelligence-is-transforming-business-operations/ (accessed on 26 March 2023).

Grand View Research (2023), "Artificial Intelligence (AI) Market Size, Share & Trends Analysis Report By Solution (Hardware, Software, Services), By Technology (Deep Learning, Machine Learning, Natural Language Processing, Machine Vision), By End Use, By Region, And Segment Forecasts, 2022 – 2030.". available at: https://www.marketresearch.com/Grand-View-Research-v4060/Artificial-Intelligence-Size-Share-Trends-31516566/ , (accessed on 26 March 2023)

Ilag, B. N., and Athave, Y. (2019), "Artificial Intelligence: Risk Assessment and Considerations for the Future", International Journal of Computer Applications, Vol.181 No.43

James, N., Antony, N. T., Shaji, S. P., Baby, S., and Annakutty, J. (2021), "Automated checkout for stores: A computer vision approach.", Revista geintec - gestao inovacao e tecnologias, Vol.11 No.3, pp. 1830-1841.

Jönsson, J. (2021), "AI acceptance and attitudes: People's perception of healthcare and commercial AI applications." Bachelor thesis. Linköping University, Department of Computer and Information Science. Available at: http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-176507 (accessed on 15 January 2023)

Johnson, K. B., et al. (2021), "Precision medicine, AI, and the future of personalized health care.", Clinical and translational science, Vol.14 No.1, pp. 86-93.

McDermott, D. (2011), "What matters to a machine?" In M. Anderson & S. L. Anderson (Eds.), Machine Ethics (pp. 88-114). Cambridge University Press., pp. 2-5, https://doi.org/10.1017/CBO9780511978036.010

Müller, V.C. (2021), "Ethics of Artificial Intelligence and Robotics" In: E.N. Zalta, ed. The Stanford Encyclopedia of Philosophy (Summer 2021 Edition). [online] Available at: https://plato.stanford.edu/archives/sum2021/entries/ethics-ai/ (accessed on 15 March 2023)

Obermeyer, Z., and Emanuel, E. J. (2016), "Predicting the future—big data, machine learning, and clinical medicine.", The New England journal of medicine, Vol. 375 No.13

Postman, N. (1992), "Technopoly: The Surrender of Culture to Technology" United States: Vintage Books.

Putica, M. (2018), "Artificial Intelligence: Doubts of the Contemporary Development", Hum, 13(20), p. 198-213. (accessed on 7 April 2023), available at: https://hrcak.srce.hr/219733

Ransbotham, S. et al. (2020), "Expanding AI's Impact With Organizational Learning" [online] MIT Sloan Management Review. Available at: https://sloanreview.mit.edu/projects/expanding-ais-impact-with-organizational-learning/ (accessed on 25 March 2023)

Russell, S., and Norvig, P. (2016), Artificial Intelligence: A Modern Approach. Pearson.

Schepman, A. and Rodway, P. (2020), "Initial validation of the general attitudes towards Artificial Intelligence Scale", Computers in Human Behavior Reports, [online] 1. Available at: https://www.sciencedirect.com/science/article/pii/S2451958820300142 (accessed on 15 January 2023)

Schepman, A. and Rodway, P., (2022), "The General Attitudes towards Artificial Intelligence Scale (GAAIS): Confirmatory Validation and Associations with Personality, Corporate Distrust, and General Trust", International Journal of Human-Computer Interaction. [online] Available at: https://doi.org/10.1080/10447318.2022.2085400 (accessed on 15 January 2023)

Turing, A. M. (1950), "Computing machinery and intelligence.", Mind, Vol. 59 No. 236, pp. 433-460.

World Economic Forum (2020), "The Future of Jobs Report 2020" [online] Available at: https://www.weforum.org/reports/the-future-of-jobs-report-2020 (accessed on 26 March 2023)

Xu, Y., et al. (2021), "Artificial intelligence: A powerful paradigm for scientific research", The Innovation, Vol.2 No.4, 100179. https://doi.org/10.1016/j.xinn.2021.100179

Yampolskiy, R.V. (2012), "Artificial Intelligence Safety Engineering: Why Machine Ethics Is a Wrong Approach", In V. C. Müller (Ed.), Philosophy and Theory of Artificial Intelligence (pp. 389-396). Springer. (accessed on 15 March 2023), available at: http://cecs.louisville.edu/ry/AIsafety.pdf

Yudkowsky, E. (2008), "Artificial Intelligence as a Positive and Negative Factor in Global Risk", In Global Catastrophic Risks, edited by Nick Bostrom and Milan M. Ćirković, pp. 308–345. New York: Oxford University Press

# EMPLOYMENT AFTER RETIREMENT: FACTORS AFFECTING WORKING AT OLD DAYS IN LITHUANIA

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## ABSTRACT

**The purpose** of the present study is to investigate individual, financial, and other factors affecting individuals' choice to work beyond the retirement.

**Design/Methodology/Approach.** A regression analysis method was applied using unique administrative Lithuanian data to test a set of our hypotheses on the impact of various factors (individual, financial, and other) on bridge employment. The sample consisted of 16.8 thousand new old-age pension recipients from 2017, 2018, 2020 and 2021.

**Findings.** Closer inspection of the data reveals that contrary to what might be expected, higher employment in old age is associated with higher pre-retirement pay, higher acquired pension record and higher-skilled work. Moreover, the results of our analysis provide evidence that higher positions and higher pay, along with better health retention, appear to be essential conditions for staying in work beyond retirement age.

**Originality/value.** The topic widely analyzed by foreign authors, has not been studied much in Lithuania; there is a lack of information on how pandemic and other factors affect behavior of elderly after retirement. The results of regression analysis allow us to conclude that the impact of COVID-19 was significant: persons who reached retirement age during the pandemic were less likely to work beyond the retirement than those who reached this stage in better times.

*Keywords: bridge employment, work beyond retirement, Lithuania*

## INTRODUCTION

Rapid population aging, substantially increased public health expenditures and pressure on both social insurance and social assistance schemes mainly dedicated to older dependent persons present major challenges for European countries. To secure the financial sustainability of pension systems many countries implemented structural reforms, such as shifting from the defined benefit to defined contribution schemes and moving from single to multi-tiered pension systems to lower the share of pay-as-you-go pensions. Moreover, they started to increase the retirement age and discourage early retirement arrangements because easy early labor market exit would create growing imbalances

between active years and years in retirement. However, the financial and economic crisis highlighted weaknesses in some pension systems and denied the myth that specific type of pension system can cope with demographic changes by itself, whereas increasing pension age is also not enough to reduce negative aging impact on pension systems.

As one of the solutions to resource the needs of an aging population is the encouragement of individuals to stay in the labor market for longer, avoiding labor shortages for employers, providing employees with bigger income in old age, and ensuring the stability of pension and health systems. The choice to work beyond the retirement can be very individual and depend on different factors.

The aim of this paper is to find out what factors affect the choice of retirees to work beyond the retirement in order to elaborate reasonable recommendations to the Lithuanian pension system and labor market policies. In the sections that follow, first, we briefly discuss main employment after retirement concepts, review quantitative and qualitative studies on postretirement employment and present our conceptual framework. In the next section, we present research methodology and design. Then, based on the results of our analysis on work after retirement in Lithuania, we recommend an agenda for future research.

## THEORETICAL BACKGROUND

Concept "bridge employment" can have several meanings and is slightly different from European countries to United States (Dingemans *et al.*, 2016). As Gobeski and Beehr (2009) summed up the ideas of some researchers (Doeringer, 1990; Feldman, 1994; Sterns and Subich, 2005) employment of any sort (part-time, temporary, full-time, or self-employment) after retirement from a career job is called bridge employment, signifying the ''bridge'' from pre-retirement employment to full retirement via an extension of one's work-life. This exclusion is common in studies examining the bridge employment in United States. Here, the main feature becomes the work of a completely different job than the one worked during the career. In studies examining work in retirement in European countries, a simpler definition prevails, finding that bridge employment will be defined as the participation in paid work by those who receive old-age benefit (Dingemans *et al.*, 2016). Sometimes in the works of researchers, such synonyms as "work in retirement", "work beyond pensionable age", "silver work" (Deller *et al.*, 2009; Maxin and Deller, 2010) or the "fourth pillar" of income (Giarini, 2009) can be found. In the framework of our research in case of Lithuania, bridge employment will mean simply staying to work in the same place, which is usually done in Lithuania, unless the workload at the same employer can be reduced (Figure 1).
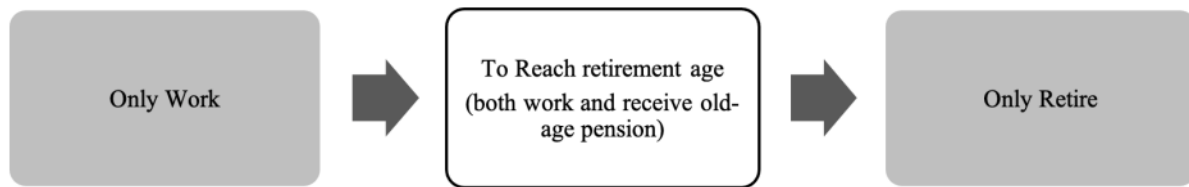
Figure 1. Bridge employment model used in this research

Source: compiled by the authors

Two main different motives to work after retirement can be reported (Figure 2). On the one hand, a person may want to get life satisfaction and feel a sense of need for society by continuing to work (motive "want"). On the other hand, financial necessity may determine the choice to work, and it may be the sole and main motive in individual cases (motive "need"). Beehr and Bennett (2015) found that the main outcomes of bridge employment were identity, finances and social groups which were related to life satisfaction and health. Older workers in bridge employment were satisfied with their work, because they could keep learning and demonstrate their competency (Sewdas *et al.*, 2017). Dingemans and Henken (2019) also found that working seem to be the most important for life satisfaction for older people.
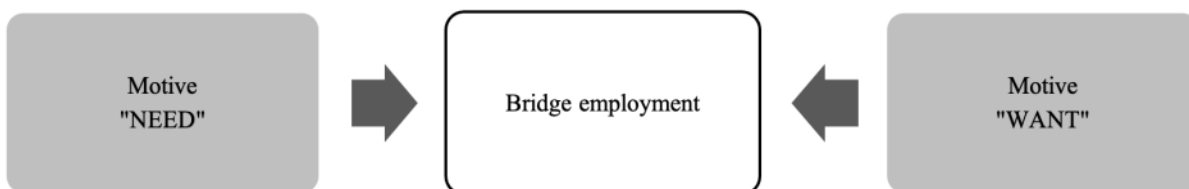


*Figure 2. Two main motives for bridge employment*

*Source: compiled by the authors using Beehr and Bennet (2015), Sewdas et al. (2017), Dingemans and Henkens (2019)*

The issue is not only about the desires and feelings of being part of society, but also about the growing need for older people to work longer due to the increasing pressure on the financial stability of the pension system. Analyzing the motives to work in old days, Maestas and Zissimopoulos (2010) immediately found that economic challenges arise when the increase in people surviving to old age and the decline in the number of young people alive to support them cause the growth in society's consumption needs to outpace growth in its productive capacity. Bridge jobs may sometimes reflect the financial necessity to avoid poverty risk, especially for those at the lower end of the socioeconomic scale. Consequently, individuals may not want to work longer, but they may need to work to support their consumption and avoid poverty.

Researchers analyzing many factors affecting bridge employment focus on a complex set of socioeconomic factors (age, gender, health, work history, sector a person worked), contextual factors

(including family influence), macroeconomic and psychological ones. Some authors analyzed such factors as owning a house or flat with mortgage (Platts *et al.*, 2019), partner's employment (Platts et al., 2019), individual's marital status (Dingemans *et al.*, 2016), number of children (Fasbender, 2016).

The authors of this research grouped factors affecting bridge employment similarly to Zitikytė (2019). The uniqueness of this study is the inclusion of the pandemic factor, the estimation of which will be a completely new breakthrough in this topic when studying bridge employment in Lithuania. (Figure 3).
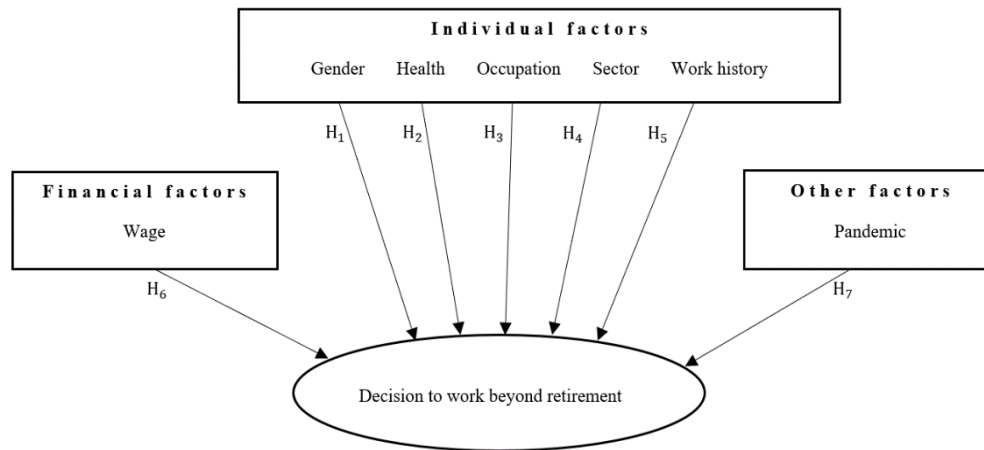


*Figure 3. Conceptual framework of the study*
*Source: compiled by the authors*

Firstly, individual factors such as gender, health, occupation, sector, and work history, are discussed in this paper.

First well-known predictor of bridge employment is gender, with men being more likely to work beyond the retirement (Komp *et al.*, 2010; Maestas and Zissimopoulos, 2010; Platts *et al.*, 2019; Fasbender, 2016). Komp *et al.* (2010) found that different factors were important for men and women. Firstly, they found that older women were less likely to engage in paid work than older men were. Secondly, socio-economic status had a more developed influence among older men: wealthy persons with a high educational level and high occupational prestige were particularly likely to work. Among women, persons with high occupational prestige were particularly likely to engage in paid work. Therefore, the connection between socio-economic status and paid work was stronger developed among men than among women. Most authors agree that women's labor force participation rate is lower than men's because of social norms and women's responsibility for familial caregiving (Komp *et al.*, 2010; Pleau, 2010). Pleau (2010) found that for women, being married and having high household wealth were negatively associated, and higher earnings positively associated with reentry to the labor market; for men, wealth and earnings had the opposite effect. Therefore, social roles such as being

married, having children or grandchildren may lower odds of retired women employment. Zitikytė (2019) modeling Lithuanian data did not determine gender factor as meaningful. However, this could have happened due to the inclusion of a factor when analyzing whether a person works after a year, because a year after reaching the retirement age, a similar proportion of men and women are still working. However, this study will also analyze the effects of the pandemic, which may have different effects on men and women. In the light of the foregoing, the following hypothesis is stated for Lithuanian retirees:

$H_1$: Men are more likely to work longer than women are.

Next, being in good health is mentioned as an important precondition for working beyond retirement age (Sewdas *et al.*, 2017; Platts *et al.*, 2019; Dingemans *et al.*, 2016; Fasbender, 2016). Most often, researchers asked individuals to self-assess their health status (Fasbender; 2016; Wang *et al.*, 2008) and they found out that better subjective health was more likely to engage in post-retirement employment. It is quite predictable that individuals in better health will be more likely to work longer than those who require treatment or experience health limitations while working. Considering this, we finish with hypothesis:

$H_2$: Healthier older workers may choose bridge employment more often than their unhealthy counterparts may.

Another factor often analyzed in the literature is education. Some authors use in their researches the level of education as a factor affecting bridge employment, some – occupation. One can imagine that the two are related, a higher level of education leads to a higher professional level. Some authors agreed that more educated individuals were more likely to work longer (Dingemans *et al.*, 2016; Platts *et al.*, 2019; Sewdas *et al.*, 2017; Komp *et al.*, 2010). Komp *et al.* (2010) to evaluate the impact of education on bridge employment used two factors educational level and occupational prestige. Komp *et al.* (2010) found that the higher the occupational prestige, the more likely an older person was to engage in paid work. Educational level was found meaningful only to men with the idea that older men with a high educational level were more likely to work for pay. In case of Lithuania the data of individual's occupation will be analyzed, therefore it is expected that:

$H_3$: Individuals with higher occupational level are more likely to work beyond the retirement than individuals with lower ones.

It is rare to come across articles that consider the sector in which a person works as a separate factor. In the case of Lithuania, the sector factor has already been examined earlier and included, as it can create greater incentives to work even after retirement for those persons who work in the public sector. Zitikytė (2019) found that managers in the public sector were more likely to work than those in

the private one. These estimations showed that people in the public sector are more assured of job opportunities in old age and can continue working more successfully beyond the retirement age, while in the private sector; young workers are more in demand with older ones being less attractive to employers. To test whether the sector factor remains significant analyzing a longer period than Zitikytė (2019), such hypothesis is formulated:

$H_4$: People working at public sector are more likely to choose bridge employment than workers from the private one.

It is likely that individuals who have worked longer may have accumulated more experience and use it to a great advantage at an older age. In addition, when retirement approaches, such persons will remain in the labor market longer. Moreover, those who have a shorter work history may have it intermittently for some reason, and this may be an indicator that if they have worked for a shorter time before retirement, they will not choose to work after it. Zitikytė (2019) to analyze the impact of work history for individuals used the data of acquired pension record and found that in the case of Lithuania a higher acquired pension record was related to a higher likelihood of working beyond the retirement. This study will hypothesize the same:

$H_5$: The more years a person has worked, the greater the likelihood of post-retirement employment.

Another factor - wage - is not widely discussed in literature. Kim and Feldman (2000) found that salary was inversely related to accepting bridge employment. Kerr and Armstrong-Stassen (2011) found that financial necessity was not significantly associated with commitment or the intention to continue working. On the contrary, Zitikytė (2019) found for Lithuanian data that wage factor could be useful to detect if person choosed bridge employment. It was established that a higher average wage during an individual's last three years prior to retirement increases the likelihood of participating in the labor market after retirement. That is why once again doing research for Lithuanian data it is concluded with hypothesis that even after the pandemic:

$H_6$: The higher a retiree's average wage was before the retirement, the more likely a retiree is to engage in bridge employment.

When the pandemic started, many worried that older people would have a harder time than younger people because of higher morbidity and more severe side effects of the coronavirus (Morrow-Howell, 2020; Schumaker, 2020; Shi *et al.*, 2020), and elderly may also lose work more often because during the pandemic more work was organized remotely using information technology, which became the beginning quite a challenge for older people (Truxillo *et al.*, 2020; Kanfer *et al.*, 2020). Bellotti *et al.* (2021) reviewing literature summed up that older worker job loss rates in general were lower compared to younger, but did not stabilize and, once they lost their jobs, they were thought to

face more difficulties in finding a new occupation. The youngest workers, oldest workers (over 60 years old), and low-income earners were the most impacted (Hoehn-Velasco *et al*., 2021). To test whether the pandemic changed the chances of bridge employment, we formulated the final hypothesis:

$H_7$: Those people who were assigned an old age pension during Covid-19 pandemic were less likely to work beyond retirement than those who were assigned an old-age pension earlier.

The binary response models developed to test the hypotheses will be presented in the next section.

## METHODOLOGY AND RESEARCH DESIGN

To have a true picture of the impact of various factors on bridge employment in Lithuania, the binary response models were applied. The analyzed sample consists of 16.8 thousand new old-age pension recipients from 2017, 2018, 2020 and 2021. Those who reached retirement age in 2019 were not included in the analysis, because it would be difficult to assess whether they did not work a year later because of the start of the pandemic, or whether they simply would have decided not to work a year later even if the pandemic had not occurred. This research was done by using unique Lithuanian social security data, which allowed investigating not a sample, as in the cases of other authors, but the whole population. To test the main hypothesis of this study, linear regression models were applied. The two standard binary outcome models, the logit, and the probit models, specify different functional forms for this probability as a function of regressors. The logit model specifies:

$$L_i = \Lambda[\beta_0 + \beta_1 gender + \beta_{21} sick_L + \beta_{22} sick_H + \beta_3 occupation + \beta_4 sector +$$
$$+\beta_{51} acquired\ pension\ record + \beta_{52} acquired\ pension\ record^2 + \beta_6 log\ (average\ wage) +$$
$$\beta_7 pandemic],$$

where $\Lambda$ is the cumulative distribution function of the logistic function. The response variable regresses and denotes the employment status in retirement and adopts the value 1 for being employed and 0 for being unemployed one year after the retirement.

An alternative model is the probit model, which specifies:

$$I_i = \Lambda[\beta_0 + \beta_1 gender + \beta_{21} sick_L + \beta_{22} sick_H + \beta_3 occupation + \beta_4 sector +$$
$$+\beta_{51} acquired\ pension\ record + \beta_{52} acquired\ pension\ record^2 + \beta_6 log\ (average\ wage) +$$
$$\beta_7 pandemic + \varepsilon]$$

The dummy variable of gender was included, with being 1 if a retiree was a man and being 0 if a retiree was a woman. The dummy variable of the sick variable was created where $Sick_L$ Meant that a

person was sick less than 5 times during the last ten years before retirement, and the factor $Sick_H$ Meant that a person was sick 5 or more than 5 times during the last ten years before retirement (the average duration of sick cases was found 5 cases for this data, therefore, 5 was chosen as the threshold separating lower sickness from the higher one). The dummy variable of sector was included, with being 1 if a retiree worked in the public sector and being 0 if a retiree worked in the private one. A variable occupation included nine main groups of occupations according to the Classifier of Lithuanian occupations: managers, professionals, technicians and associate professionals, clericals, service and sales workers, craft and related trades workers, machine operators and assemblers, unskilled workers and skilled agricultural, forestry and fishery workers. A factor of acquired pension record of second power was used to evaluate the decreasing influence of the retirement record. It was likely that with increasing the retirement record, the likelihood of bridge employment would increase (a factor of acquired pension record). However, at a relatively high retirement record, its influence was less pronounced (factor of acquired pension record [2]). To see how a percentage change in wage affect the probability of bridge employment, factor of average wage was logarithmic. The dummy variable of pandemic was included, in one case with being 0 if a retiree was awarded an old-age pension in 2017 and 2018 and being 1 if a retiree was awarded an old-age pension in 2020 and 2021, and in the second case with being 0 if a retiree was awarded an old-age pension in 2017, 2018, 2021 and being 1 if a retiree was awarded an old-age pension in 2020, during the first year of the Covid-19 pandemic. The results obtained are discussed in the next section.

## MAIN FINDINGS

In Lithuania, the share of working old-age pension recipients is increasing: in 2010, 9.2 percent of all old-age pension recipients worked, and in 2022, 12 percent worked (Figure 4).
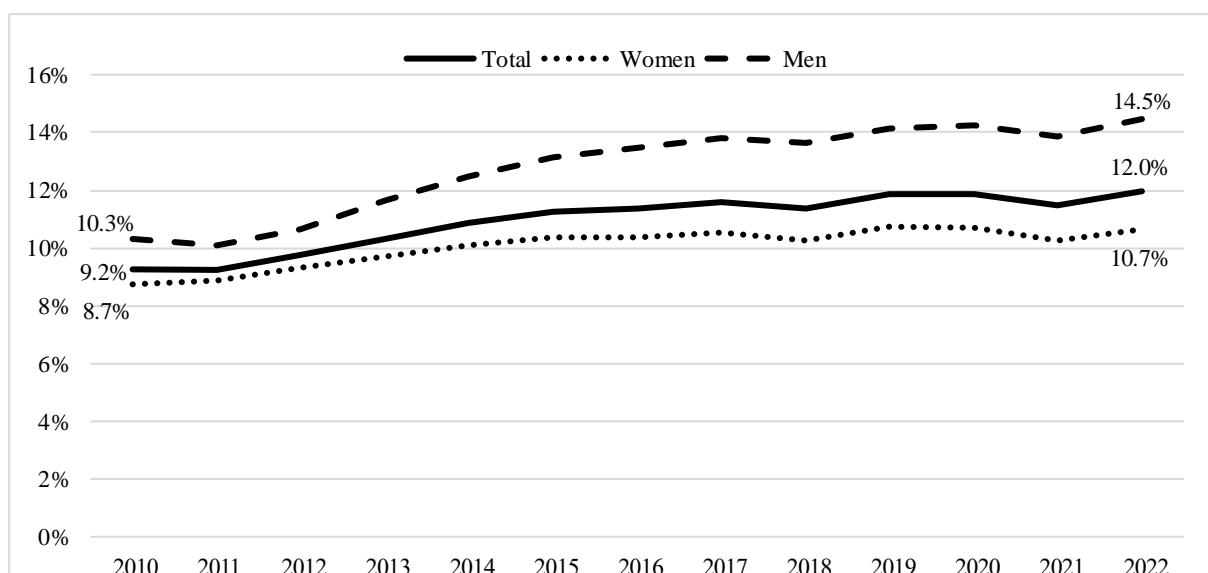
Figure 4. Share of working old-age pension recipients among all old-age pension recipients
Source: State social insurance fund

In Lithuania, old-age pension recipients can receive both old-age pension and work income at the same time. There are opportunities to receive an early retirement pension (no more than 5 years before the retirement age) and to postpone the payment of the retirement pension (by postponing the receipt of the retirement pension for a year, an old-age pension is increased by 8 percent). Receiving an early old-age pension and postponing an old-age pension are not very popular in Lithuania (about 5,000 people receive early old-age pensions, and about 1,000 people receive a deferred pension). Our study looked at how determined new old-age pension recipients are likely to work, that is, whether they work one year after reaching the retirement age. The study showed that 43 percent of the persons who started receiving old-age pension in 2017-2018, were working a year after reaching the retirement age. Those who reached retirement age during the pandemic in 2020, activity in the labor market decreased: a year later, only 36 percent of old-age pension recipients, who started receiving their pension in 2020, were working. In the next year, 2021, those retiring were somewhat more active, but a decrease was still observed compared to 2017-2018: a year later, 37.1 percent of them were still working (Table 1).

|  | 2017 | 2018 | 2020 | 2021 |
|---|---|---|---|---|
| The share of working retirees | 43.0 | 42.6 | 35.8 | 37.1 |

Table 1. The share of working retirees in 2017, 2018, 2020, 2021
Source: State Social Insurance Fund

Those who worked in the public sector were more likely to work after retirement than those who worked in the private sector: 72 percent of those who worked in the public sector and 64 percent of those who worked in the private one, worked in retirement. As found in the literature review, people's employment in older age may depend on occupation. The largest share of working old-age pension recipients is among managers and professionals (Table 2). After reaching retirement age a year later, the share of managers who are still working increases year by year and the pandemic did not have a negative impact. On the contrary, the employment of managers only increased during the pandemic. During the pandemic, employment fell among professionals, service and sales workers, technicians, and associate professionals and skilled agricultural, forestry and fishery workers. The pandemic did not have a significant impact on the employment of unskilled workers: before the pandemic, 59-62 percent of those who retired were working, during the pandemic, 61-62 percent of those who retired were working.

| Name of occupation | 2017 | 2018 | 2020 | 2021 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Managers | 74 | 70 | 74 | 77 |
| Professionals | 71 | 77 | 72 | 73 |
| Service and sales workers | 70 | 69 | 67 | 64 |
| Clericals | 68 | 61 | 65 | 64 |
| Technicians and associate professionals | 66 | 70 | 64 | 63 |
| Skilled agricultural, forestry and fishery workers | 65 | 50 | 43 | 63 |
| Plant and machine operators | 63 | 69 | 62 | 63 |
| Craft and related trades workers | 63 | 64 | 61 | 60 |
| Unskilled workers | 62 | 59 | 62 | 61 |

Table 2. The share of working retirees in 2017, 2018, 2020, 2021 according to occupations, in percent

Source: State Social Insurance Fund

Regression models were constructed for the collected data. By applying these models of the probability of being employed beyond retirement, it was found out that a higher obligatory pension record, a higher average wage before retirement, working in public sector and lower sickness rate were positively associated with accepting bridge employment, while a higher sickness rate, being a man, and reaching retirement age during pandemic were inversely related to accepting such employment (Table 3).

| | LPM | | Logit | | Probit | |
|---|---|---|---|---|---|---|
| | Estimate | Pr(>t) | Estimate | Pr(>t) | Estimate | Pr(>t) |
| (intercept) | 0.1328 | 0.1419 | -1.5152 | 0.0001*** | -0.9400 | 0.0000*** |
| gender | -0.0197 | 0.0163* | -0.0928 | 0.0155* | -0.0583 | 0.0012* |
| $sick_L$ | 0.0105 | 0.2227 | 0.0494 | 0.2243 | 0.0287 | 0.2428 |
| $sick_H$ | -0.0654 | 0.0000*** | -0.2929 | 0.0000*** | -0.1812 | 0.0000*** |
| occupation: | | | | | | |
| professionals | -0.0196 | 0.1470 | -0.0968 | 0.1446 | -0.0523 | 0.1845 |
| technicians and associate professionals | -0.0786 | 0.0000*** | -0.3839 | 0.0000*** | -0.2261 | 0.0000*** |
| clericals | -0.0884 | 0.0000*** | -0.4254 | 0.0000*** | -0.2534 | 0.0000*** |
| service and sales workers | -0.0389 | 0.0164* | -0.2015 | 0.0090** | -0.1153 | 0.0130* |
| skilled agricultural, forestry and fishery workers | -0.1266 | 0.0093** | -0.5726 | 0.0076** | -0.3456 | 0.0095** |
| craft and related trades workers | -0.0793 | 0.0000*** | -0.3776 | 0.0000*** | -0.2238 | 0.0000*** |
| plant and machine operators | -0.0613 | 0.0000*** | -0.2998 | 0.0000*** | -0.1759 | 0.0000*** |
| unskilled occupations | -0.0881 | 0.0000*** | -0.4193 | 0.0000*** | -0.2486 | 0.0000*** |
| sector | 0.0373 | 0.0000*** | 0.1775 | 0.0000*** | 0.1045 | 0.0000*** |
| acquired pension record | 0.0177 | 0.0002*** | 0.0705 | 0.0013** | 0.0444 | 0.0010*** |
| $acquired\ pension\ record^2$ | -0.0001 | 0.0150* | -0.0006 | 0.0401* | -0.0004 | 0.0335* |
| log(average_wage) | 0.0640 | 0.0000*** | 0.2966 | 0.0000*** | 0.1771 | 0.0000*** |
| pandemic | -0.0272 | 0.0003*** | -0.1256 | 0.0004*** | -0.0762 | 0.0000*** |

Table 3. The results of the models

Source: compiled by the authors

When the factor of pandemic was included into the models with being 0 if a retiree was awarded an old-age pension in 2017, 2018, 2021 and being 1 if a retiree was awarded an old-age pension in 2020, during the first year of the Covid-19 pandemic, the variable was insignificant. But the

factor of pandemic was significant with being 0 if a retiree was awarded an old-age pension in 2017 and 2018 and being 1 if a retiree was awarded an old-age pension in 2020 and 2021. However, these coefficients of logit and probit models in Table 4 are not suitable to interpretation yet. For the interpretation, marginal coefficients at the mean are calculated and presented (Table 4). All three models explain 67% of variability.

All individual factors, including gender, sickness rate, occupation, sector and acquired pension record, were significant in the models. The results of the models showed that men were less likely to work than women when they reached retirement age. The probability of doing bridge employment for men was 1.3-1.9 percentage points lower than for women. This did not correlate with the results of literature results where it was saying that women were less likely to work beyond the retirement (Komp *et al.*, 2010; Maestas and Zissimopoulos, 2010; Platts *et al.*, 2019; Fasbender, 2016). There could be two explanations here. First, the indicator of whether a person worked in retirement was recorded one year after retirement, when it was observed that a similar proportion of men and women worked. So, in some cases we could get that men would be more likely to work longer, in others - women. Second, and most likely, the period under consideration also included the pandemic period (2020 and 2021), which kept employment higher in certain occupations at that time, for example, health care workers were in high demand during the pandemic, and the majority of those working here were women. Therefore, it was found that women were even more likely to work longer than men were.

Support was found for Hypothesis 2, namely that a lower sickness rate was related to a higher likelihood of participating in bridge jobs. Bridge employment was a less likely option for people who took sick leaves more than five times in the period of the last ten years. Individuals who were sick more than five times in the period of last ten years were by 4.2-6.5 percentage points less likely to work than those who were sick less. The factor of $sick_L$ was insignificant therefore it will not be interpreted. The result that those who are sick more often are less likely to work after retirement correlates with the results obtained by other authors, which were reviewed in the literature (Sewdas *et al.*, 2017; Platts *et al.*, 2019; Dingemans *et al.*, 2016; Fasbender, 2016; Wang *et al.*, 2008; Zitikytė, 2019). This means that better health, less illness can become a serious investment in the individual's future, when a person who wants to work longer, for example for socialization or personal realization, will be able to choose to do so, because he will not feel health restrictions. On the contrary, if a person is limited by health problems, he will not choose to be in the labor market for longer, because it is more difficult to do it physically.

|  | | LPM | Logit | Probit |
|---|---|---|---|---|
| (intercept) | | 0.1328 | -0.3254 | -0.2212 |
| gender | | -0.0197 | -0.0199 | -0.0137 |
| | $sick_L$ | 0.0105 | 0.0106 | 0.0067 |
| | $sick_H$ | -0.0654 | -0.0629 | -0.0426 |

| occupation: | | | |
|---|---|---|---|
| professionals | -0.0196 | -0.0207 | -0.0012 |
| technicians and associate professionals | -0.0786 | -0.0824 | -0.0532 |
| clericals | -0.0884 | -0.0913 | -0.0596 |
| service and sales workers | -0.0389 | -0.0432 | -0.0271 |
| skilled agricultural, forestry and fishery workers | -0.1266 | -0.1229 | -0.0813 |
| craft and related trades workers | -0.0793 | -0.0811 | -0.0526 |
| plant and machine operators | -0.0613 | -0.0644 | -0.0413 |
| unskilled workers | -0.0881 | -0.0900 | -0.0585 |
| | | | |
| sector | 0.0373 | 0.0381 | 0.0245 |
| acquired pension record | 0.0177 | 0.0151 | 0.0104 |
| *acquired pension record*$^2$ | -0.0001 | -0.0001 | -0.0001 |
| log(average_wage) | 0.0640 | 0.0637 | 0.0416 |
| pandemic | -0.0272 | -0.0269 | -0.0179 |

Table 4. Marginal effects of the models for bridge employment in Lithuania

Source: compiled by the authors

The factor of occupation was included in the models comparing the probability of working for representatives of all occupations compared to managers. Results leaded us to the conclusion that professionals were 0.1-2 percentage points less likely to work than managers (respectively, technicians and associate professionals: 5.3-8.2 p.p, clericals: 6.0-9.0 p.p., service and sales workers: 2.7-4.3, skilled agricultural, forestry and fishery workers: 8.0-13.0 p.p., craft and related trades workers: 5.2-8.1, plant and machine operators: 4.1-6.4 p.p., unskilled workers: 5.9-9.0 p.p.). This analysis of occupations showed that the probability of professionals and managers to remain in the labor market after retirement was quite similar, in fact, the occupation factor of professionals was not statistically significant: it did not differ significantly from managers. Meanwhile, unskilled workers, craft, and related trades workers, skilled agricultural, forestry and fishery workers, technicians, and associate professionals, were less likely to work than managers. This perfectly corresponded to the results of other researchers who stated that more educated individuals were more likely to work longer (Dingemans *et al.*, 2016; Platts *et al.*, 2019; Sewdas *et al.*, 2017; Komp *et al.*, 2010).

The factor of sector in which a person worked was included into regressions with the hypothesis saying that people in the public sector should be more likely to work in retirement in comparison to the private one. The factor of sector was significant in the models and thus led to the conclusion that individuals working in the public sector were 2.4-3.8 percentage points more likely to stay in the labor market after retirement than those who worked in the private one.

Regression models also showed that a higher acquired pension record was related to a higher likelihood of doing bridge jobs, which supports Hypothesis 5. For each year of pension record, individuals were 1.0-1.8 percentage points more likely to work. However, since the acquired pension

record was high, it did not increase and even decreased the likelihood of working. These results agreed with Zitikytė (2019) results, indicating that the influence of this factor has not changed due to the pandemic and has remained very similar.

Moreover, a higher average wage a year prior to retirement increased the likelihood of participating in the labor market after retirement, which supports Hypothesis 6. The result of logarithm of wage was the average change in the probability when wage increased by (about) 10% (because a change in the log of 0.1 was about a 10% increase in wage). Marginal effect was 0.06, so the probability that a person would work beyond the retirement increased by 0.006, or 0.6 percentage points, given a 10% increase in wage. And the results showed that a person who had earned a higher average wage before retirement was more likely to stay in the labor market for longer.

Finally, in this analysis, the evaluation of the pandemic factor took a very important place. The results of the models showed that the persons who retired during the pandemic were 1.7-2.7 percentage points less likely to work than those who retired before this pandemic. This shows that the impact of the pandemic exists, and that older people have faced greater challenges in the labor market during the pandemic.

## CONCLUSION

The authors believe that this research contributes to the expansion of knowledge on bridge employment considering the pandemic period as well. The data reveal that in case of Lithuania, the pandemic has reduced older people's ability to work, and the impact of the pandemic has been felt among people of retirement age. A limitation of the study is that the attribute if person works is recorded for a year after reaching the retirement age. In the future, a later period could be studied, that is, whether a person works for a longer period after reaching the retirement age. The current study answers the question of how likely it is that a person withdraws from the labor market as soon as he or she reaches the retirement age. Future research covering a longer period could answer the question of what characteristics make people tend to stay in the labor market for longer period. In addition, it would make sense in other studies to analyze what effect the pandemic had on the employment of older people in the long term: whether it was just a short-term shock after all.

## REFERENCES

Beehr, T.A. and Bennett, M.M. (2015), "Working after retirement: Features of bridge employment and research directions", Journal of Work, Aging and Retirement, Vol. 1 No. 1, pp. 112-128.
Bellotti, L., Zaniboni, S., Balducci, C. and Grote, G. (2021), "Rapid review on COVID-19, work-related aspects, and age differences", International Journal of Environmental Research and Public Health, Vol. 18 No. 10, pp. 5166.

Deller, J., Liedtke, P.M. and Maxin, L.M. (2009), "Old-age security and silver workers: An empirical survey identifies challenges for companies, insurers and society", Journal of The Geneva Papers on Risk and Insurance-Issues and Practice, Vol. 34, pp. 137-157.

Dingemans, E. and Henkens, K. (2019), "Working after retirement and life satisfaction: Cross-national comparative research in Europe", Journal of Research on Aging, Vol. 41 No. 7, pp. 648-669.

Dingemans, E, Henkens, K and van Solinge, H. (2016), "Working Beyond Retirement in Europe. An Investigation of Individual and Societal Determinants Using SHARE", Journal of Netspar Discussion Paper, No. 06/2016-022, Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2796625

Doeringer, P.B. ed. (1990), Bridges to retirement: Older workers in a changing labor market, Cornell University Press, Cornell University.

Fasbender, U., Wang, M., Voltmer, J.B. and Deller, J. (2016), "The meaning of work for post-retirement employment decisions", Journal of Work, Aging and Retirement, Vol. 2 No. 1, pp. 12-23.

Feldman, D.C. (1994), "The decision to retire early: A review and conceptualization", Journal of Academy of management review, Vol. 19 No. 2, pp. 285-311.

Giarini, O. (2009), "The four pillars, the financial crisis and demographics–Challenges and opportunities", The Journal of The Geneva Papers on Risk and Insurance-Issues and Practice, Vol. 34 No. 4, pp. 507-511.

Gobeski, K.T. and Beehr, T.A. (2009), "How retirees work: Predictors of different types of bridge employment", The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, Vol. 30 No. 3, pp. 401-425.

Hoehn-Velasco, L., Silverio-Murillo, A. and de la Miyar, J.R.B. (2021), "The long downturn: The impact of the great lockdown on formal employment", Journal of Economics and Business, Vol. 115, pp. 105983.

Kanfer, R., Lyndgaard, S.F. and Tatel, C.E. (2020), "For whom the pandemic tolls: A person-centric analysis of older workers", Journal of Work, Aging and Retirement, Vol. 6 No. 4, pp. 238-241.

Kerr, G. and Armstrong-Stassen, M. (2011), "The bridge to retirement: Older workers' engagement in post-career entrepreneurship and wage-and-salary employment", The Journal of Entrepreneurship, Vol. 20 No. 1, pp. 55-76.

Kim, S. and Feldman, D.C. (2000), "Working in retirement: The antecedents of bridge employment and its consequences for quality of life in retirement", Academy of management Journal, Vol. 43 No. 6, pp. 1195-1210.

Komp, K., van Tilburg, T. and van Groenou, M.B. (2010), "Paid work between age 60 and 70 years in Europe", International journal of ageing and later life, Vol. 5 No.1, pp. 45-75.

Maestas, N. and Zissimopoulos, J. (2010), "How longer work lives ease the crunch of population aging", Journal of Economic Perspectives, Vol. 24 No. 1, pp. 139-160.

Maxin, L. and Deller, J. (2010), "Activities in retirement: individual experience of silver work", Journal of Comparative Population Studies, Vol. 35 No. 4.

Morrow-Howell, N., Galucia, N. and Swinford, E. (2020), "Recovering from the COVID-19 pandemic: A focus on older adults", Journal of aging & social policy, Vol. 32 No. 4-5, pp. 526-535.

Platts, L.G., Corna, L.M., Worts, D., Mcdonough, P., Price, D. and Glaser, K. (2019), "Returns to work after retirement: a prospective study of unretirement in the United Kingdom", Journal of Ageing & Society, Vol. 39 No. 3, pp. 439-464.

Sewdas, R., De Wind, A., Van Der Zwaan, L.G., Van Der Borg, W.E., Steenbeek, R., Van Der Beek, A.J. and Boot, C.R. (2017), "Why older workers work beyond the retirement age: a qualitative study", Journal of BMC public health, Vol. 17 No. 1, pp. 1-9.

Shi, S., Qin, M., Shen, B., Cai, Y., Liu, T., Yang, F., Gong, W., Liu, X., Liang, J., Zhao, Q. and Huang, H. (2020), "Association of cardiac injury with mortality in hospitalized patients with COVID-19 in Wuhan, China", Journal of JAMA cardiology, Vol. 5 No. 7, pp. 802-810.

Schumaker, E. (2020), "What we know about coronavirus' long-term effects", Journal of ABC News, pp. 315-320.

Sterns, H.L. and Subich, L.M. (2005), "Counseling for Retirement".

Truxillo, D.M., Cadiz, D.M. and Brady, G.M. (2020), "COVID-19 and its implications for research on work ability", Journal of Work, Aging and Retirement, Vol. 6 No. 4, pp. 242-245.

Zitikytė, K. (2019), "To work or not to work: factors affecting bridge employment beyond retirement, case of Lithuania", Journal of Ekonomika, Vol. 98, pp. 33-54.

Wang, M., Zhan, Y., Liu, S. and Shultz, K.S. (2008), "Antecedents of bridge employment: a longitudinal investigation", Journal of applied Psychology, Vol. 93 No. 4, pp. 818.

# BOOK OF CONFERENCE ABSTRACTS

# TESTING MEANINGFUL CORRELATION AMONG ECONOMIC INDICATORS IN THE CASE OF LEBANON'S FINANCIAL CRISIS

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## ABSTRACT

**Purpose**- The paper aims to identify and analyze the factors that have had the greatest impact on the financial and economic crisis in Lebanon since 2019. This will be accomplished by studying economic factors before the crisis and the solutions attempted after the crisis began to identify patterns of economic behavior during a period of geopolitical instability.

**Design/methodology-** The proposed research uses mixed research methods with a long-sectional time dimension. The qualitative analysis is based on a literature review that leads to the design of semi-structured interviews, while the quantitative part includes multi-regression analysis, descriptive statistics, and multiple correlation.

The authors conducted a literature review, analyzed secondary data and observations, and drafted a set of semi-structured interviews with economists to validate their findings. They conducted 16 interviews with politicians, central bank employees, commercial bank managers and employees, and economists to achieve a wide range of responses. They analyzed the interviews using NVivo and will conduct a multi-regression analysis to determine the impact of independent variables (FDI, currency exchange rate, CPI, currency in circulation, foreign assets reserves, and trade imbalance) on Lebanon's GDP for the last ten years (2012-2022). They will also analyze the correlation between independent variables and use descriptive statistics, meaningfulness indicators, and correlation of F-test and $R^2$ coefficient for multiple determination to demonstrate the strength of the association.
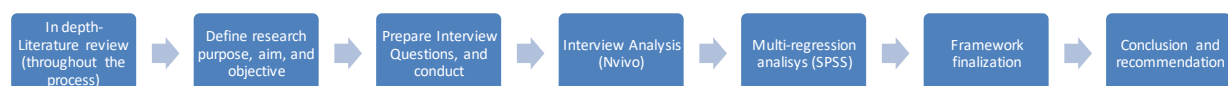


Figure 1: Summary of research process

**Findings/results**- The majority of the interviews conducted in the research suggest that political instability and domestic mismanagement by policy makers are to blame for the severity of the financial crisis in Lebanon. Exchange rate fluctuations have also had a dramatic impact on the country's economic development. Further multi-regression analysis will be conducted to validate these findings and identify any correlations and meaningfulness.

**Originality/value**- The findings of this research contribute to deep analysis of one of the worst economic crisis globally since the mid-19th century (World Bank, 2022), still ongoing. This paper would be basis for future monetary decisions, budgetary decisions, and future research.

**Social implications**- financial instability and geopolitical instability have a negative strong impact in economic development and societal wealth especially for countries highly connected to the global economy.

## LITERATURE REVIEW AND GENERAL THEORETICAL APPROACHES

The critical current situations of the banking and financial sectors in Lebanon are due to decades of cumulative political conflicts, either domestic, international or both. During the currently ongoing crisis, the lack of foreign currency reserves led to high volatility of each local currency and to strong disfunctions in the banking system, hence the economic turmoil of this country. Figure 2 shows the fluctuation of several variables in the Lebanese market.
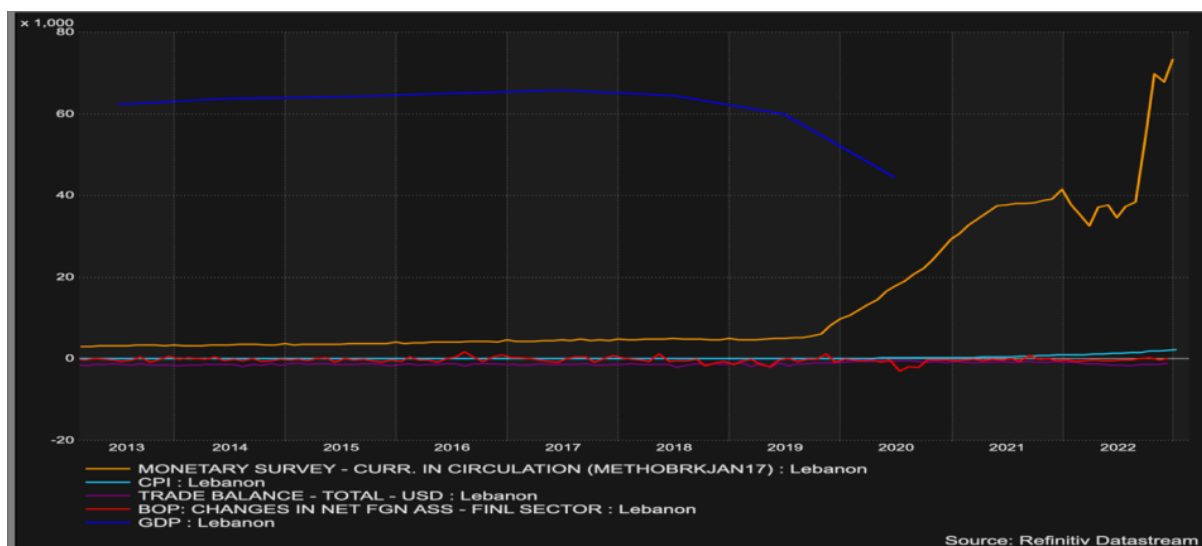


Figure 2: Economic indicators high variation in Lebanon, from 2012-2022. Source: Refinitiv, (2023)

Based on these variations, the research question raised is: **How are the FDI, currency in circulation, CPI, trade imbalance, foreign assets reserves, and currency exchange rate interrelated and how they impact economic development and GDP of Lebanon?**

The macroeconomic situation and financial equilibrium can be impacted by various factors in both the macroeconomic Keynesian and Classical economic theories (Eichengreen, 2020). Political instability can have a positive correlation with economic growth (Veiga, 2011), with urbanization rate being the most impactful variable in politically unstable nations (Xu, 2011). As concluded by Georgiadis and Schumann, (2021), a balance in currency inflows and outflows is a must to have exchange rate stability

and manage economic risk. This relies on the fact that exchange rates fluctuation have higher impact on the economy with reflected imbalance in foreign exchange currencies flows. Moreover, a trade deficit corroborated with an import-oriented economy has several disadvantages. The first disadvantage is the reliance on foreign currency, and beyond that is the negative effect on domestic industries, local economy erosion, and raise of unemployment (Özcan Karahan, 2020). Trade imbalance may lead to current account deficit. The imbalance in the current account in its turn is one of the reasons that stimulates financial crises, and so interrupting economic stability or growth of a country (Özcan Karahan, 2020). Figure 3 summarises the variables considered in this literature review.
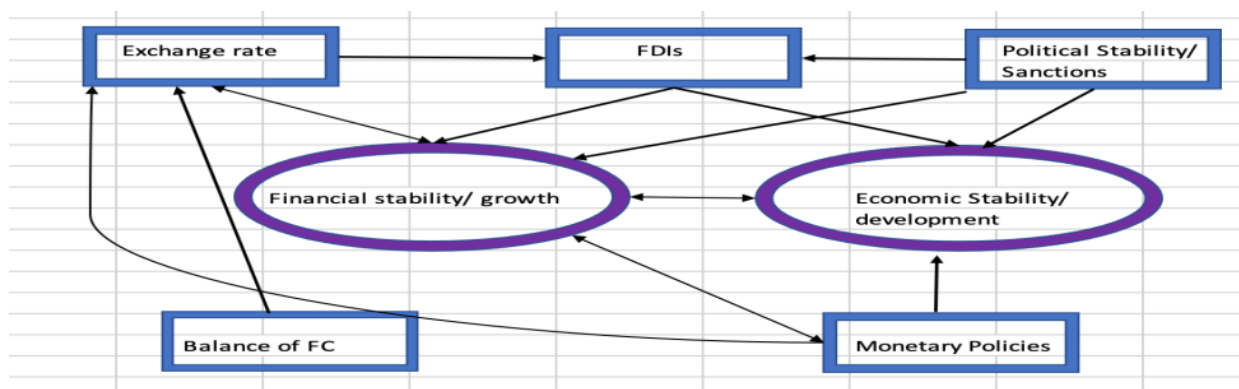


Figure 3: Theoretical Framework of the study regarding the interconnection among variables analysed in literature review, Source: authors compilation.

High Foreign Direct Investment (FDI) achievement is important for economic development and currency stability is one of its main determinants (Nunnenkamp, 2002). However, Lebanon's currency has been fluctuating drastically in the past three years while FDI has dropped significantly from about $631 million in 2018 to about $53 million in 2020 (Worldbank, 2022). Money supply and inflation have a positive correlation according to studies based on the theories of Karl Marx, Friedman, and Irving Fisher (Kwon et al, 2009)(Doan Van, 2019). Central banks consider the impact of inflation on economic growth and use monetary policies to manage it, and either through a contractionary or expansionary action, the Central banks aim to control the cash liquidity, or currency in circulation, in a market, although the results are not always direct.

*Keywords: FDI, CPI, Financial crisis, Lebanon, Currency exchange rate, GDP, Economic growth, trade imbalance.*

# REFERENCES

Doan Van, D. (2019), "Money supply and inflation impact on economic growth", Journal of Financial Economic Policy, Emerald Publishing Limited, Vol. 12 No. 1, pp. 121–136, doi: 10.1108/JFEP-10-2018-0152.

Eichengreen, B. (2020), "Keynesian economics: can it return if it never died?", Review of Keynesian Economics, Edward Elgar Publishing Ltd, Vol. 8 No. 1, pp. 23–35, doi: 10.4337/roke.2020.01.03.

Georgiadis, G. and Schumann, B. (2021), "Dominant-currency pricing and the global output spillovers from US dollar appreciation", Journal of International Economics, Vol. 133, p. 103537, doi: 10.1016/j.jinteco.2021.103537.

Kwon et al. (2009), "Public Debt, Money Supply, and Inflation: A Cross-Country Study | SpringerLink", available at: https://link.springer.com/article/10.1057/imfsp.2008.26 (accessed 27 February 2023).

Nunnenkamp, P. (2002), Determinants of FDI in Developing Countries: Has Globalization Changed the Rules of the Game?, Working Paper No. 1122, Kiel Working Paper.

Özcan Karahan. (2020), "Sustainability of Current Account Deficit in Turkey", International Journal of Business and Economic Sciences Applied Research, Eastern Macedonia and Thrace Institute of Technology, Vol. 13 No. 2, pp. 62–69, doi: 10.25103/ijbesar.132.05.

Refinitiv. (2023), "Sign In", available at: https://amers2.login.cp.thomsonreuters.net/auth/ (accessed 24 February 2023).

Veiga, A.A., Francisco José. (2011), "How Does Political Instability Affect Economic Growth?", IMF, available at: https://www.imf.org/en/Publications/WP/Issues/2016/12/31/How-Does-Political-Instability-Affect-Economic-Growth-24570 (accessed 27 February 2023).

World Bank. (2022), "Overview", World Bank, Text/HTML, , available at: https://www.worldbank.org/en/country/lebanon/overview (accessed 24 February 2023).

Worldbank. (2022), "Foreign direct investment, net outflows (BoP, current US$) - Lebanon | Data", available at: https://data.worldbank.org/indicator/BM.KLT.DINV.CD.WD?end=2021&locations=LB&start=2009 (accessed 27 February 2023).

Xu, T. (2011), "THE DETERMINANTS OF POLITICAL INSTABILITY: A REGRESSION ANALYSIS".

# KNOWLEDGE MANAGEMENT STRATEGIES OF EMERGING MARKET FIRMS: AN UPPER ECHELON PERSPECTIVE

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## ABSTRACT

Scholars have recently emphasized how SMEs manage knowledge scarcity through network resources (Thrassou et al., 2020). However, in institutional voids filled emerging markets like India (Liedong et al., 2020), even large firms may struggle with knowledge scarcity. Leveraging upper-echelon and resource-based theories, we explore how CEO masculinity measured as the facial width-to-height ratio (fWHR) (Ahmed et al., 2019) influences firms' knowledge management practices, especially technological knowhow possessed by firms under boundary conditions of knowledge resources provided by firms' internationalization and slack resources. We suggest that CEOs with high fWHR exert more efforts toward knowledge management practices and can possess more technological knowhow owing to their higher achievement drive (He et al., 2019). Furthermore, leveraging resource-based theory, we theorize that strategic resources of firms such as level of internationalization and slack resources strengthen the impact of CEOs' masculinity on firms' technological knowhow. This assertion of ours is because as emerging markets suffer from poor knowledge resources, internationalization can render access to knowledge resources and thus enable more masculine CEOs to absorb and manage this acquired knowledge within the firm. As knowledge has to be acquired externally, the availability of slack resources would strengthen masculine CEOs' ability to invest in appropriate knowledge management tools to sustain knowledge within the organization (Adams & Lamont, 2003). We base our findings on a sample of 378 Indian firms. We add to knowledge management literature, where the role of CEOs and their traits on knowledge management has been explored to a lesser extent (Ferraris et al., 2023). We further add to knowledge management literature from emerging markets, where extant research has not explored drivers of knowledge management in the context of emerging markets. Because emerging markets need external learning mechanisms for knowledge acquisition owing to the poor institutional environment (Liu & Vrontis, 2017), a firm's internationalization could provide those resources.

Furthermore, CEOs remain key decision-makers due to the high-power distance in emerging market firms like those from India. Thus, their traits and attributes will likely influence strategic outcomes in emerging markets (Wei et al., 2018). Thus, we add to the peculiarity of knowledge management strategies in emerging markets by exploring CEO masculinity and internationalization

and slack resources as moderators of CEO masculinity and technological knowledge management relationship.

*Keywords: Knowledge management, emerging markets, upper echelon, CEO masculinity, facial width to height ratio, internationalization, slack resources*

## REFERENCES

Adams, G. L., & Lamont, B. T. (2003). Knowledge management systems and developing sustainable competitive advantage. Journal of Knowledge Management, 7(2), 142-154.

Ahmed, S., Sihvonen, J., & Vähämaa, S. (2019). CEO facial masculinity and bank risk-taking. Personality and Individual Differences, 138, 133-139.

Ferraris, A., Degbey, W. Y., Singh, S. K., Bresciani, S., Castellano, S., Fiano, F., & Couturier, J. (2022). Microfoundations of strategic agility in emerging markets: empirical evidence of Italian MNEs in India. Journal of World Business, 57(2), 101272.

He, X., Yin, H., Zeng, Y., Zhang, H., & Zhao, H. (2019). Facial structure and achievement drive: Evidence from financial analysts. Journal of Accounting Research, 57(4), 1013-1057.

Liedong, T. A., Peprah, A. A., Amartey, A. O., & Rajwani, T. (2020). Institutional voids and firms' resource commitment in emerging markets: A review and future research agenda. Journal of International Management, 26(3), 100756.

Thrassou, A., Vrontis, D., Crescimanno, M., Giacomarra, M., & Galati, A. (2020). The requisite match between internal resources and network ties to cope with knowledge scarcity. Journal of Knowledge Management, 24(4), 861-880.

Vrontis, D., & Christofi, M. (2021). R&D internationalization and innovation: A systematic review, integrative framework and future research directions. Journal of Business Research, 128, 812-823.

Wei, J., Ouyang, Z., & Chen, H. A. (2018). CEO characteristics and corporate philanthropic giving in an emerging market: The case of China. Journal of Business Research, 87, 1-11.

# THE IMPACT OF MANAGERIAL PERCEPTIONS ON IMPLEMENTING ENVIRONMENTAL STRATEGIES IN B2B

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## ABSTRACT

Rapidly growing environmental issues, including climate change, air pollution, and global, are becoming critical problems on the global agenda (Celik, 2020). This lead to increased interest in adopting environmental strategies, which denote the extent at which environmental issues are multilingual into firms' strategic plans (Banerjee et al., 2003). This interest emerged originally in the early 1970s, when the earth started to suffer severe environmental issues that put humans at risk (Levy and Zaltman, 1975). Menon and Menon (1997) pioneered the concept of environmental strategy, which indicates firms' orientation and commitment to environmental challenges. This strategy reflects the emerging of societal performance objectives, firm entrepreneurship focus, and marketing strategy by reflecting environmental challenges when drafting policies and plans. Banerjee et al. (2003) suggested that environmental strategy can be applied at three different levels (corporate, business, and functional), which requires integration and coordination to guarantee that environmental concerns are addressed correctly across different levels of the firm.

In this study, we introduced the concept of managerial perception in the adoption of eco-friendly practices (Abu Farha and Elbanna, 2018), which was ignored in previous studies that was focusing on examining the effects of resources and capabilities on environmental strategy (Groening et al., 2018; Leonidou et al., 2017). The proposed model was tested using data collected from 234 firms. The results reveals that firms with an entrepreneurial and political frame of reference are highly expected to utilize environmental strategies to address environmental concerns. Additionally, traditional factors, including organizational resources and capabilities, presents a strong correlation with the implementation of environmental strategies. The results reveal that environmental strategies are associated with managerial frame of reference (managerial perception). Therefore, managers should carefully assess the logic of their strategy focus and manage it respectively. In practice, when managers distinguish that their frame of reference influences the utilization of environmental strategies, they can improve the outcome and value of such strategies during the design and execution stages.

The study proposed model
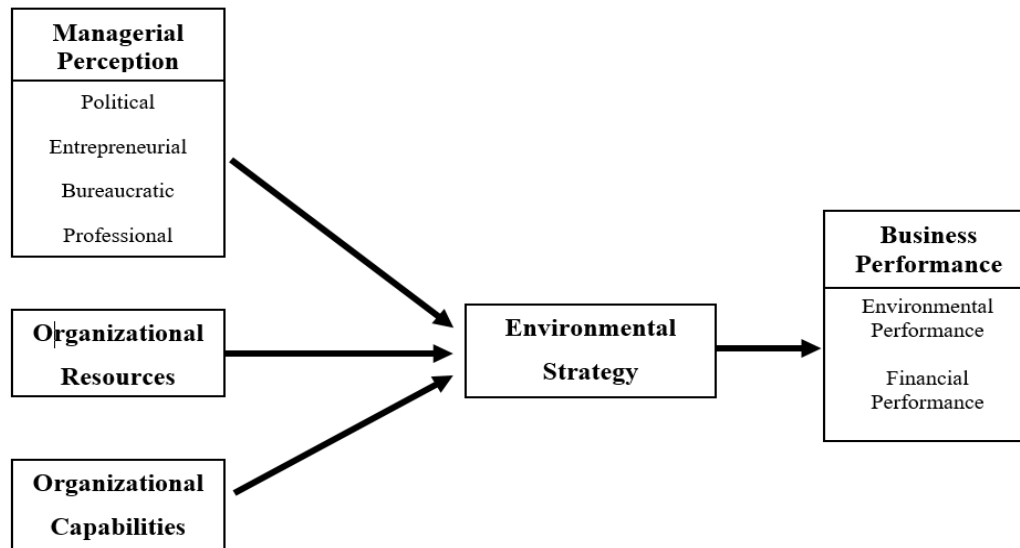
*Keywords: Environmental strategy, management perception, organizational resources, organizational capabilities, frame of reference, B2B, Qatar.*

## REFERENCES

Abu Farha, A., and S. Elbanna (2018), "Do different marketing practices pre-suppose different frames of reference? An exploratory study", Journal of Business and Industrial Marketing, Vol. 33 No. 3, pp. 337-352.

Celik, S. (2020), "The effects of climate change on human behaviors. Environment, climate, plant and vegetation growth", Springer: pp. 577-589.

Levy, S. and Zaltman, G. (1975), Marketing, society and conflict, Prentice-Hall, Englewood Cliffs, NJ.

Menon, A., and Menon, A. (1997), "Enviropreneurial marketing strategy: the emergence of corporate environmentalism as marketing strategy", Journal of Marketing, Vol. 61, No. 1, pp. 51-67.

Banerjee, S. B., Iyer, E. S., and Kashyap, R. K. (2003), "Corporate environmentalism: antecedents and influence of industry type", Journal of Marketing, Vol. 67 No. 2, pp. 106-122.

Leonidou, L.C., Christodoulides, P., Kyrgidou, L.P., and Palihawadana, D. (2017), "Internal drivers and performance consequences of small firm green business strategy: The moderating role of external forces", Journal of Business Ethics, Vol. 140 No. 3, pp. 585-606.

Groening, C., Sarkis, J., and Zhu, Q. (2018), "Green marketing consumer-level theory review: A compendium of applied theories and further research directions", Journal of Cleaner Production, Vol. 172, pp. 1848-1866.

# MEASURING THE SOCIOECONOMIC IMPACT OF USING ROBOTIC SYSTEMS IN RECYCLING: THE CASE OF GREECE AND CYPRUS

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## ABSTRACT

## INTRODUCTION

Organisations in all economic sectors are expected to contribute towards the achievement of the 17 Sustainable Development Goals (Antonaras, 2018). Recycling is a crucial aspect of sustainable living, as it plays a key role in protecting the environment, conserving resources, and reducing waste. Recycling is one of the key components of the European Green Deal which aims to promote circular economy principles including the reuse and recycling of materials and to reduce the environmental impact of the targeted increase of production and consumption. The recovery of materials can be significantly enhanced by robots equipped with sensors and artificial intelligence to adapt to different types of materials and improve sorting accuracy.

This is also the target of the project "Fast sorting robotic system for promoting interregional recycling activities of Greece and Cyprus" (InterRecycle) which is implemented within the framework of the Cooperation Programme INTERREG V-A "Greece-Cyprus 2014-2020". The project promotes the use of smart robotic systems which automate the recycling waste material sorting/classification process so that the productivity of material retrieval in the two sorting facilities in Greece (Association of Solid Waste Management of Crete - ESDAK) and Cyprus (Green-Dot), which until now mainly rely on manual sorting, can be amplified.

InterRecycle focuses on improving waste sorting robots (e.g., Koskinopoulou et al., 2020; Raptopoulos et al., 2020), which use a combination of machine learning algorithms and computer vision, to provide a composite autonomous system that successfully identify, localize, and categorize recyclables in a challenging and demanding industrial environment (Koskinopoulou et al., 2020). The purpose of the current study is to measure the socioeconomic impact of the use of the robotic systems in the two sorting facilities in Greece and Cyprus. Robots and automation have the potential to greatly impact the socioeconomic landscape in various ways. Through our analysis, we tried to understand whether the robotic systems are making a difference in solving societal issues and whether they create economic value (Costa and Pesci, 2016) as it is supported that robots can work faster and more efficiently than humans, which can then lead to increased productivity and lower costs for businesses

(Ballestar et al., 2020). Regarding the societal benefits, the stakeholder approach was utilised to measure the social impact of the project. Such an approach, like SROI, is often used by organizations and investors who are looking to understand the full impact of their activities beyond just financial returns. It can help them to make more informed decisions about where to allocate their resources and how to maximize their impact (e.g., Lingane and Olsen, 2014; Rotheroe and Richards, 2007).

## METHODOLOGY

The methodology for measuring the socioeconomic impact of the InterRecycle project includes quantitative research and a comparative analysis using performance metrics. The quantitative research involved measuring [a] the perceptions of employees working at the sorting facilities in Cyprus and Greece, and [b] collecting and analysing citizens' perceptions relevant to the use of robotic systems in the two recycling systems. Both surveys were contacted prior and after the implementation of the robotic systems in the two sorting facilities in order to capture any changes and determine any perception changes. The fast-sorting robotic systems were installed in the two facilities in early 2023. The initial perception surveys were conducted in November 2022, while the final surveys were planned for June 2023. Finally, a comparative analysis was used to assess the impact of the use of robotic systems by collecting performance and productivity metrics and indicators of the two sorting systems prior and after the pilot implementation in the two facilities in Greece and Cyprus. Specific indicators capturing the performance and productivity of the recyclable materials were considered and collected from the two facilities proving insights of the performance of the systems before using the robots. The same indicators were collected after the pilot use of the robots, to allow a comparison of the two time points within each country.

## PRELIMINARY RESULTS

At the point of writing this abstract the project is still in progress and consequently, only some preliminary results are currently available regarding the socioeconomic impact of the project. The initial employee perception surveys indicated a high level of job satisfaction in both facilities. However, it was observed that there was more variance in respondents' answers considering the questions that had to do with the efficiency of the existing sorting system, such as the speed of the belt. Furthermore, the public opinion surveys indicate that citizens in both countries are positively inclined towards recycling and have a positive view regarding the installation of robotic systems for the sorting of recyclable materials.

The performance and productivity indicators collected before the installation of the robotic systems in the two facilities reveal a significant potential for increasing the quantities of recyclable materials.

Current results indicate that relatively significant quantities of quality recyclable material cannot be collected with the manual sorting process and are lost as waste. Our hypothesis supports that the productivity rate will increase with the use of the robots and thus expect the performance and productivity indicators to be collected in June 2023 will show significantly reduced quantities of quality recyclable materials.

## CONTRIBUTION OF THE STUDY

This empirical research provides important insights for managerial practice and extends existing research on sorting robotic systems and automation. Although the project is ongoing, the benefits of implementing a sorting robotic system in companies are clear. By automating the sorting process, companies can improve their efficiency by reducing the time and resources required to sort items. Additionally, these systems can be highly accurate when sorting specific materials, resulting in better outcomes. Another significant benefit is the enhancement of employee safety, which is a top concern for managers. Furthermore, real-time data collection is crucial in today's industries, and using sorting robotic systems can provide valuable insights for evaluating the system and improving its efficiency. Moreover, this study contributes to research on the manufacturing industry, which faces the challenge of sorting products effectively. Our research results will offer valuable insights into the system's efficiency, taking into account production speed and accuracy. Additionally, our study will shed light on environmental research, as the sorting system can prevent waste more effectively than traditional manual sorting methods. This will enable researchers to better understand waste generation and propose more effective waste management strategies.

*Keywords: fast sorting robotic system, recycling, socioeconomic impact, sustainable development goals, SDGs*

## REFERENCES

Antonaras, A. (2018). The Cyprus Tourism Sector and the Sustainability Agenda 2030, The Cyprus Review, Vol 30:2, 123-140

Ballestar, M. T., Díaz-Chao, Á., Sainz, J., & Torrent-Sellens, J. (2020). Knowledge, robots and productivity in SMEs: Explaining the second digital wave. Journal of Business Research, 108, 119-131.

Costa, E., & Pesci, C. (2016). Social impact measurement: why do stakeholders' matter? Sustainability Accounting, Management and Policy Journal, 7(1), 99-124.

Koskinopoulou, M., Raptopoulos, F., Papadopoulos, G., Mavrakis, N., and Maniadakis, M. (2021). ''Robotic waste sorting technology: Toward a vision-based categorization system for the industrial robotic separation of recyclable waste'', IEEE Robotics & Automation Magazine, Vol. 28 No. 2, pp. 50-60.

Lingane, A., & Olsen, S. (2004). Guidelines for social return on investment. California management review, 46(3), 116-135.

Raptopoulos, F., Koskinopoulou, M., & Maniadakis, M. (2020, August). Robotic pick-and-toss facilitates urban waste sorting. In 2020 IEEE 16th International Conference on Automation Science and Engineering (CASE) (pp. 1149-1154). IEEE.

Rotheroe, N., & Richards, A. (2007). Social return on investment and social enterprise: transparent accountability for sustainable development. Social Enterprise Journal, 3(1), 31-48.

# TRANSFERABILITY IN 'PHYGITAL' ASSETS: THE IMPACT OF NFT UTILITIES AND PERKS ON SOCIAL IDENTITY

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## ABSTRACT

## INTRODUCTION

This research explores consumption and transferability of utility across digital and non-digital planes, using the context of NFTs. Through the process of 'minting', creators and owners of assets such as artwork, songs, videos or even documents have the opportunity of digitally encoding their assets on to a blockchain (e.g. Ethereum) which provides a certificate of ownership for the specific asset in the digital world (Chalmers et al., 2022). These digital assets are easily transferable (sold or exchanged), offering a traceable digital footprint of ownership and acquisition (Kaczynski & Kominers, 2021; Treiblmeier, 2021). More recently however, we have seen the rise of NFTs that delve beyond just selling ownership of "artwork" or "collectable" assets, but positioning and marketing NFT's as digital assets that grant the holder additional utilities or perks, i.e. a value, benefit, or function that is attached to the NFT. These utilities and perks can be digital, such as items or avatars that can be used in online games or online community memberships (Dwivedi et al., 2022), but oftentimes they can be translated to non-digital assets and benefits, such as ticket entries to special events, celebrity autographs and opportunities for VIP meet and greet. Digital assets, like NFTs, can confer status and help users build or project their identity and status within social spaces (Dwivedi et al, 2022). As the transferability of NFT utility means they have the potential to affect both the virtual and physical social identities of users, this research explores 1. How do NFTs support the transferability of utility from the non-digital to the digital plane, and vice-versa, 2. How does that affect user social identity and extension of self between digital and physical.

## BACKGROUND

Unlike other (fungible) digital assets that are interchangeable, an NFT is non-interchangeable, unique, and immutable and is linked to a digital or physical asset specifying the asset's value, ownership and trading rights. Different NFTs can be valued differently due to differences in appearance, scarcity but also the NFT 'utilities' and 'perks' they offer to the owner (Chohan & Paschen, 2021). According to Chandra (2021), NFTs can be categorized in four categories according to the main types of affordances

they offer, i.e. what do they enable their owner to achieve: virtual assets; hybrid assets; as a physical/virtual interface; and as a metaverse asset. Through their different affordances, these types of NFTs are expected to offer different types of utility to the owners, in many cases moving from physical to digital and vice versa. Some of the most common affordances of NFTs are related to their ability to enable users to express their identity and status within their social circles (Lee et al., 2021), e.g. through avatars. Due to the notion of NFTs being relatively new, we lack the fundamental understanding of how these utilities move between the physical and the digital world. In our research, we use the context of Sport NFTs, as an area with popular NFTs offering various digital and non-digital utilities and perks (e.g., Belk et al., 2021; Chandra, 2021), to answer our research questions.

## METHODOLOGY

A multi-study approach has been adopted to examine consumer consumption of NFTs and how these NFTs can support the transfer of utility between digital and non-digital worlds. In Study 1, a social media data analysis approach has been employed, to highlight the relevant themes that are already present within the digital space regarding sport NFTs. A social media (SM) data scraping technique has been used to acquire user generated data from social media. Using Natural Language Processing packages, data were analysed to highlight the most commonly used terms and the most common themes (or topics) that people discuss on SM. These themes were used to understand not only the types of Sport NFTs users talked about but also the most common affordances the users were looking for. Following the SM analysis, Study 2 focused on exploring some of the key findings of Study 1 via a qualitative method. Semi-structured interviews (31) with sport NFT owners were used to outline themes of consumption of NFTs as well as various typologies of transferability of NFT utilities/perks.

## RESULTS AND DISCUSSION

Over 300K tweets have been collected between January 2021 and June 2022 using NFT and sport related keywords to identify the relevant content. The results of our topic modelling analysis highlight that consumers are engaging with several types of Sports NFTs and they recognise various affordances they offer. These affordances range from opportunities to participate in an online game/community to feeling associated with a favourite player or team. It can be seen however that many affordances (e.g., exclusivity, status, uniqueness etc) relate to the social identity of the owner. This suggests that the characteristics of NFTs enable them to become a meaningful means to express one's identity in the digital (and physical) world.

Study 2 further explores the nature, transferability and similarities/differences of these utilities/ perks from an owners' perspective. First, our findings corroborate the findings of Study 1, as NFT

utilities/perks are associated with social identity and status in the physical and digital worlds. However, our results showcase several differentiations between NFTs based on the transferability of their utilities/perks and their impact on social identity. Specifically, we identify 4 dimensions of transferability of NFT utility:

1. **Digital to non-digital transferability**, refers to NFT assets that their utilities/perks can be claimed via non-digital platforms

2. **Non-digital to digital transferability**, refers to physical assets that can be transferred from the physical plane to the digital plane.

3. **Digital to digital transferability**, focuses on the asset being transferred within the digital plane itself, as many digital assets.

4. **Co-existence** of benefit between digital and non-digital planes. In this case, the benefit is created by users engaging both with the physical and the digital assets simultaneously. These assets transmit beyond what the creator of the NFT project can give value to the NFT, but also the consumer of the NFT (buyer and now holder) can do with it. In this case the benefit comes from the NFT as a phygital asset, as benefit derives from the coexistence of physical and digital. According to our participants, this type of transferability indicates that they are more likely to have high retention of their NFT and increase their willingness to pay. According to our findings, these assets are deemed as valuable due to their unique and tangible nature.

The above discussion demonstrates the many ways that NFTs can affect the holders' social identity and extends Belk's theory of possessions and extended self (physical & digital) (Belk, 1988; 2013) by introducing a third dimension, extension of self through the "phygital plane".

Interestingly, our participants differentiate between NFTs that create a benefit that 'co-exists' both in the physical and the digital planes, and NFTs can be consumed only once, with the benefit transferred across platforms or even worlds (physical/digital). We propose that this result highlights the difference between NFT utilities and NFT perks.

## CONCLUSIONS AND IMPLICATIONS FOR THEORY AND PRACTICE

Contributing to existing literature on digital assets, social identity and crypto-marketing, we address the under-researched topic of transferability of utility within the NFT domain. The notion of benefit transferability from digital to non-digital platforms (and vice versa) using NFTs may affect consumers' intentions to purchase but also to retain the NFTs for longer. Findings have indicated that coexistence of utility in the physical and digital planes not only encourages consumers to retain and engage with the NFT for longer, but also supports the development of a 'phygital' identity. As the affordances of NFTs are strongly related to levels of identity, our findings support the introduction of

a third dimension to Belk's extension of self perspective. Our findings also aid practitioners, by highlighting that the notion of marketing with NFT is becoming outdated if the NFT projects do not hold value beyond virtual artwork/ collectibles. Consumers are seeking value in multiple ways and want to have the freedom to transfer this value from digital to non-digital, (and vice versa), thus opting for NFTs that enable transferability of value and incorporate utilities/perks that allow them to do so.

*Keywords:* Crypto-marketing, NFTs, Digital Transformation, Social Identity, Digital Assets.

## REFERENCES

Belk, R.W., 2013. Extended self in a digital world. Journal of consumer research, 40(3), pp.477-500.

Belk, R.W., 1988. Possessions and the extended self. Journal of consumer research, 15(2), pp.139-168.

Belk, R., Fischer, E. and Kozinets, R., 2013. Approaches to data analysis, interpretation and theory building for scholarly research. Qualitative Consumer and Marketing Research, pp.138-158.

Belk, R., Humayun, M. and Brouard, M., 2022. Money, possessions, and ownership in the Metaverse: NFTs, cryptocurrencies, Web3 and Wild Markets. Journal of Business Research, 153, pp.198-205.

Chalmers, D., Fisch, C., Matthews, R., Quinn, W. and Recker, J., 2022. Beyond the bubble: Will NFTs and digital proof of ownership empower creative industry entrepreneurs?. Journal of Business Venturing Insights, 17, p.e00309.

Chandra, Y., 2022. Non-fungible token-enabled entrepreneurship: A conceptual framework. Journal of Business Venturing Insights, 18, p.e00323.

Chohan, R. and Paschen, J., 2023. NFT marketing: How marketers can use nonfungible tokens in their campaigns. Business Horizons, 66(1), pp.43-50.

Dwivedi, Y.K., Hughes, L., Baabdullah, A.M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M.M., Dennehy, D., Metri, B., Buhalis, D., Cheung, C.M. and Conboy, K., 2022. Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management, 66, p.102542.

Hollebeek, L.D., Glynn, M.S. and Brodie, R.J., 2014. Consumer brand engagement in social media: Conceptualization, scale development and validation. Journal of interactive marketing, 28(2), pp.149-165.

Kaczynski, S. and Kominers, S.D., 2021. How NFTs create value. Harvard Business Review, 10.

Lee, L.H., Lin, Z., Hu, R., Gong, Z., Kumar, A., Li, T., Li, S. and Hui, P., 2021. When creators meet the metaverse: A survey on computational arts. arXiv preprint arXiv:2111.13486.

Treiblmaier, H., 2021. Beyond blockchain: How tokens trigger the internet of value and what marketing researchers need to know about them. Journal of Marketing Communications, pp.1-13.

# CRAFTING INTERNATIONAL BUSINESS STRATEGY: THE ROLE OF PERSONALITY

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## ABSTRACT

Strategic approaches determine how firms act in international markets. Scholars have identified two strategic approaches that guide international strategies: an Outside-In (OI) and Inside-Out approach (Asseraf and Shoham, 2019). An OI approach views external market forces, reflected by customers' preferences and competitors' acts, as a starting point to design strategy. An IO approach views distinct internal ability, reflected in innovative products and technology, as a starting point to craft strategy. Interestingly, Asseraf and Shoham (2019) demonstrate that OI approach to strategy enhances international performance more than IO does. Albeit, factors that determine OI and IO approaches remain a mystery.

A potential avenue to shed light on this issue is looking through the lens of the Upper Echelon (UE) theory (Hambrick and Mason, 1984). UE theory stresses that firm strategies need to be understood in terms of its micro-level entities – executives – as their personalities, among other characteristics, influence their thinking. According to the UE view, managerial characteristics influence the formulation of strategies by directing managerial attention, perceptions, and interpretations of stimuli. Therefore, understanding which executive personality traits may influence a firm's strategic approach is an important line of this study.

The 'Big Five' is a well-validated personality model that concentrates on five factors (Costa and McCrea, 1985). Agreeableness refers to an individual's level of empathy, friendliness and sympathy toward others. Extraversion refers to the extent to which a person is social, optimistic, expressive, assertive, and excitement-seeker. Conscientiousness refers to the extent to which a person is organized, responsible, adheres to rules and norms, and take obligations to others seriously. Emotional stability is the ability to adapt and cope with potential stressful situations. Finally, open to experience represents the tendency to be broad-minded, creative, imaginative, perceptive, and intelligent. Despite the acknowledgement that personality influences strategy, no attempt has so far been made to examine the role of specific personality traits in the design of strategic approaches in an international business context.

Our study contributes to the international business literature and the UE theory by focusing on how manager's personality traits tend to develop OI and IO strategies (Figure 1). This study

addresses two research questions by combining two different methodologies, PLS-SEM analysis and Necessary Conditions Analysis (NCA):

> *RQ1) What are the effects of personality traits on OI and IO strategic approaches?*

> *RQ2) Which personality traits are necessary for OI and IO strategic approaches?*

**Figure 1: Research model**
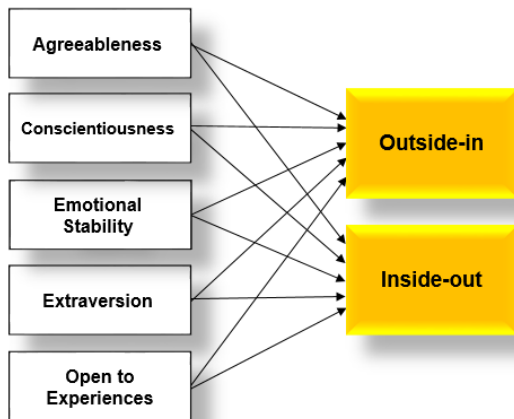


## Method

To measure the Big-Five, we adopted a scale from Gosling et al. (2003). To measure the OI-IO strategic approaches we used scales adapted from Asseraf and Shoham (2019). All items loadings were above .71, (Hair et al., 2019). Cronbach's alpha are above .7. All average variance extracted (AVE) estimates exceeded .50 and the square roots of all AVEs exceeded their correlations with all other constructs. HTMTs were lower than .85, suggesting that our model's constructs are distinct. Data from managers were collected in Israel using a survey after employing thorough screening procedures to select managers working in internationally active SBUs. 130 complete and usable surveys were utilized and analyzed with SmartPLS4.

## RESULTS

*PLS-SEM analysis:* The personality traits that are significantly associated with OI ($p < .05$) are Conscientiousness, Emotional stability and Open to experience. Differently, the traits that are significantly associated with IO are Conscientiousness, Extroversion and Open to experience. These traits can be viewed as a should-have traits (Richter and Hauff, 2022). *NCA analysis:* We found that only Agreeableness, Conscientiousness, Extroversion and Open to experience are necessary condition

for OI and IO as their effects size (*d*) are significant. These traits can be viewed as must-have traits (Richter and Hauff, 2022).

## DISCUSSION

Our findings contribute to the UE research by demonstrating that distinct executive personality traits are linked to certain strategic approaches. Using PLM-SEM, we determine the should-have traits that are associated positively with a specific strategic approach. We find that the higher levels of Conscientiousness, Emotional stability and Openness to experience are associated with higher levels of an OI approach, while higher levels of Conscientiousness, Extroversion and Openness to experience are significantly associated with higher levels of an IO approach. Moreover, we also investigated whether certain personality traits are must-have for the development of specific business approaches. To test this, we turn to NCA (Dul, 2016). While interestingly, Emotional stability was not a necessary determinant for either strategy, all other four personality traits are must-have traits.

The interpretation of our PLS-SEM and the NCA analyses allow us to identify the most crucial personality traits - the traits that are both should-have and must-have. These findings lead to important implications for firms that want to recruit and hire managers that exhibit personality traits that match the firm's desired international business strategy. For example, if firms desire to craft an OI strategic approach, which is considered as the more effective approach in international contexts (Asseraf and Shoham, 2019), than Conscientiousness and Open to Experience can be viewed as crucial personality traits as they are both should-have and must-have traits. The meaning is that on average, an increase in these personality traits will increase OI. However, there is a need for a certain minimum levels of these traits. In addition, while an increase in Extroversion and Agreeableness will not increase the level of OI approach, these personality traits are still needed as they can be viewed as must-have but not should-have traits. Taking it together, knowing managers' personality traits can be critical in attracting, hiring, and retaining the right manages that complement firm's international business strategy.

## REFERENCES

Asseraf, Y., and Shoham, A. (2019), "Crafting strategy for international marketing: outside-in or inside-out?", International Marketing Review, 36(6), pp. 859-86.
Costa, P., and McCrae, R. (1989), "NEO five-factor inventory (NEO-FFI)", Odessa, FL: Psychological Assessment Resources, 3.
Dul, J. (2016), "Necessary Condition Analysis (NCA): Logic and methodology of "necessary but not sufficient" causality", Organizational Research Methods, 19(1), pp. 10-52.

Gosling, S.D., Rentfrow, P.J., and Swann, W.B.J. (2003), "A very brief measure of the Big-Five personality domains", Journal of Research in Personality, 37, pp. 504–528.

Hair, Jr, J. F., Risher, J. J., Sarstedt, M. and Ringle, C. M. (2019), "When to use and how to report the results of PLS-SEM", European Business Review, 31(1), pp. 2–24.

Hambrick, D. C., and Mason, P. A. (1984), "Upper Echelons: The Organization as a Reflection of Its Top Managers", Academy of management Review, 9(2), pp. 193-206.

Richter, N.F. and Hauff, S. (2022), "Necessary conditions in international business research–Advancing the field with a new perspective on causality and data analysis", Journal of World Business, 57(5), p.101310.

# ONLINE SENSORY MARKETING: TRANSFORMING NGOS' MARKETING PRACTICES FOR A SUSTAINABLE FUTURE IN A TIME OF GLOBAL CRISES

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## ABSTRACT

In uncertain times, NGOs continuously increase in number and especially in the last ten years this increase is astounding (Hall et al., 2020). This continuous increase in number of NGOs, brought limitations in funding opportunities, as there are more and more organizations which need to get funds, while funds are decreased (Hall et al., 2020, Avgeropoulou & Melanthiou, 2021). Many NGOs have nowadays as a priority first to survive and then to gather funds and volunteers in an environment of global fiscal crisis, with the Ukraine War also affecting economies, and all these following a three-year pandemic period (Tellis et. al, 2019; Abbas, Ali, 2020; Reddy, Gupta, 2020). It is thus significant to be able to create engaging and memorable campaigns so as to raise awareness and to secure funding for NGOs in a super dynamic and changeable global environment. By utilizing the power of online sensory marketing, social media and cinematography, NGOs have the potential to create campaigns which not only resonate with viewers but also have the prospective to go viral and to reach a broad audience (Avgeropoulou& Melanthiou, 2021; Doucé et al. 2022; Foroudi et al., 2022). But why? What is the unique characteristic of Online Sensory Marketing, which if combined with cinematography, has the potential to significantly assist NGOs' so that they create engaging campaigns?

Online sensory marketing, is an innovative marketing tool, and is defined as a groundbreaking marketing approach which can definitely affect or even alter consumer behavior (Rathee, Rajain, 2017, Petit et al., 2019, Quesenberry, Coolsen, 2019, Bhatia et al., 2021, Kim et al., 2021). Scholars have pointed how senses play a vital role in affecting consumer behavior, and that companies and organizations should employ sensory stimulation to increase consumer engagement and sales. Offline Sensory marketing has evolved rapidly and drastically over time. The history of sensory marketing starts from the early 1990s, when marketers started realizing the importance of employing senses in marketing practices. Since then, even though Sensory marketing has advanced and online sensory marketing is evolving and is extremely promising, there is still no systematic literature reviewing sensory marketing and most important, reviewing systematically online sensory marketing from a holistic perspective (Mehrabian and Russell, 1974, Moreira et. al, 2017, Hussain, 2019, Sample et. al, 2019, Petit. et al, 2020, Simmonds et. al, 2020, Sample et. al, 2020, Avgeropoulou & Melanthiou, 2021,

Bhatia et al., 2021). Thus, there is a need to explore and to understand how marketing techniques can be applied optimally to trigger as many senses as possible simultaneously, aiming at increasing brand value, engagement, awareness, and memory so as to influence consumer' action.

With the pandemic and the shift towards online buying, it becomes even more crucial to identify new tools that can assist both consumers and companies. According to literature, sensory marketing is an underexplored yet extremely promising marketing approach, and it draws increasing attention from various disciplines such as sociology, psychology, neuroscience, and marketing (Petit et al., 2015; Petit et al., 2019; Foroudi et al. 2022). Online sensory marketing is powerful, as through the use of sensory stimuli in the online environment companies/organizations can create emotional connections with consumers and enhance their experience with a brand or product or a cause. While there has been some research on this topic, there are still several research gaps that need to be addressed (Hamacher & & Buchkremer, 2021; Bhatia et al., 2021; Petit et al., 2015; Petit et al., 2019).

One research gap in online sensory marketing is the lack of empirical studies that investigate the impact of sensory stimuli on consumer behavior in the online environment. While there is some evidence that sensory marketing can influence consumer behavior in physical retail environments, it is unclear whether the same effects can be replicated in the online context. There is a need for more research that examines the effects of sensory stimuli on consumer behavior in the online environment (Petit et al., 2019; Foroudi et al., 2022).

Another research gap is the need for a better understanding of how to optimize sensory stimuli in the online environment. While there is some evidence that certain types of sensory stimuli (such as visual and auditory stimuli) can be effective in online marketing, it is unclear how to optimize these stimuli to maximize their impact on consumer behavior. There is a need for more research that examines how to optimize sensory stimuli in the online environment (Avgeropoulou & Melanthiou 2021; Bhatia et al., 2021).

A third research gap is the need for a better understanding of how sensory stimuli interact with other factors that influence consumer behavior in the online environment. For example, it is unclear how sensory stimuli interact with factors such as price, product features, and social influence in the online context. There is a need for more research that examines how sensory stimuli interact with other factors that influence consumer behavior in the online environment.

Finally, there is a need for more research that examines the ethical implications of using sensory marketing in the online environment. For example, it is unclear whether the use of sensory stimuli in online marketing could be considered manipulative or deceptive. There is a need for more research that examines the ethical implications of using sensory marketing in the online environment (Foroudi et al. 2022; Doucé et al., 2022).

By addressing these gaps, researchers can provide a better understanding of how sensory stimuli can be used effectively in the online environment to create emotional connections with consumers and enhance their experience with a brand or product. In order to fill these gaps, the following objectives were set:

1. To investigate the effectiveness of viral campaigns for NGOs on YouTube: This objective involves assessing the impact of viral campaigns for NGOs on YouTube and examining the factors that contribute to their success.

2. To explore the role of cinematography in creating effective viral campaigns for NGOs on YouTube: This objective focuses on the impact of cinematography on the creation of viral campaigns and how it can be used to engage and captivate audiences.

3. To investigate the impact of online sensory marketing on the success of viral campaigns for NGOs on YouTube: This objective aims to examine how online sensory marketing techniques, such as audio, visual, and interactive elements, can be used to enhance the impact of viral campaigns and increase audience engagement.

4. To develop a framework for creating viral campaigns for NGOs on YouTube with the aid of cinematography and online sensory marketing: This objective involves synthesizing the findings of the research to develop a framework that NGOs can use to create effective viral campaigns on YouTube using cinematography and online sensory marketing techniques.

5. To identify research gaps and future directions in the field of viral campaigns for NGOs on YouTube: This objective focuses on identifying gaps in the current research on viral campaigns for NGOs on YouTube and proposing future research directions that can further enhance the effectiveness of these campaigns.

The above stated objectives are more relevant now than ever before, given the uncertain global environment in which we live. As previously mentioned, the pandemic has disrupted economies, supply chains, and social norms around the world, making it more challenging for NGOs to secure funding and engage with supporters (Arjona et al. 2020; Crosta et al.,2021; Islam et al., 2021). With many people staying at home due to lockdowns and social distancing measures, online engagement has become increasingly important. Creating viral campaigns on YouTube with the aid of cinematography and online sensory marketing offers NGOs a powerful way to reach a broad audience and engage them emotionally. This approach can help NGOs to build relationships with supporters, secure funding, and raise awareness of their causes, even when in-person events are not possible. Furthermore, online sensory marketing is an innovative approach that can provide a unique and memorable experience for viewers. With the right combination of audio, visual, and other sensory cues and with the aid of montage and cinematography, NGOs can create campaigns that truly stand

out and generate a powerful emotional response from their audience, without extreme production costs.

## THEORETICAL, MANAGERIAL & PRACTICAL CONTRIBUTION

The proposed research on the effectiveness of using online sensory marketing in viral campaigns for NGOs on YouTube has several theoretical, managerial and practical contributions. Firstly, it contributes to the literature on sensory marketing, particularly in the online environment, which is an area that has received limited attention. The research will provide empirical evidence on the effectiveness of sensory stimuli in the online environment, which will enhance our understanding of how sensory marketing can be optimized for online campaigns.

Secondly, the study contributes to the literature on viral campaigns and cinematography in the context of NGOs. The research will provide insights into how cinematography can be used to create engaging and captivating content for NGOs, as well as how sensory marketing techniques can enhance the effectiveness of these campaigns. A proposed framework for creating viral campaigns will be a useful tool for NGOs to enhance their online marketing efforts and reach a broader audience.

From a managerial perspective, the findings of this research can provide guidance for NGOs on how to create effective online campaigns using sensory marketing techniques and cinematography. By understanding the impact of sensory stimuli and cinematography on consumer behavior, NGOs can create more engaging content and enhance their brand awareness and supporter engagement.

Finally, the research addresses the ethical implications of using sensory marketing in online campaigns. By examining the potential for sensory marketing to be manipulative or deceptive, the study can provide guidance on ethical considerations for NGOs when creating online campaigns.

Overall, the proposed research makes an original contribution to the literature on sensory marketing and viral campaigns in the context of NGOs. The research addresses several research gaps and provides practical guidance for NGOs to enhance their online marketing efforts, which is particularly relevant in the current global environment where online engagement has become increasingly important.

*Keywords: Online Sensory Marketing; NGOs' Sustainability; Montage; New Technologies; Consumer Behavior; YouTube; Audio-Visual Appeal; Synesthesia.*

## REFERENCES

Ali Abdulhassan Abbas & Rajaa Hussein Abd Ali 2020, "Viral Marketing and How to Make a Viral Bomb in the Digital Space to Invest the Pandemic COVID-19", International Journal of Multicultural and Multireligious Understanding, vol. 7, no. 4, pp. 323-336.

Arjona-Martín, J., Méndiz-Noguero, A. and Victoria-Mas, J., 2020. Virality as a paradigm of digital communication. Review of the concept and update of the theoretical framework. El profesional de la información.

Avgeropoulou, A. and Melanthiou, Y., 2021. Giving power to those having less power: NGOs, YouTube and virality. J. for Global Business Advancement, 14(4), p.520-540.

Bhatia, R., Garg, R., Chhikara, R., Kataria, A. & Talwar, V. 2021, "Sensory Marketing A Review and Research Agenda", Academy of Marketing Studies Journal.

Chang, H., Eckman, M. & Yan, R. 2011, "Application of the Stimulus-Organism-Response model to the retail environment: the role of hedonic motivation in impulse buying behavior", The International Review of Retail, Distribution and Consumer Research, vol. 21, no. 3, pp. 233-249.

Chen, W., Wen, H. & Silalahi, A.D.K. 2021, "Parasocial Interaction with YouTubers: Does Sensory Appeal in the YouTubers' Video Influences Purchase Intention?", 2021 IEEE International Conference on Social Sciences and Intelligent Management (SSIM), Social Sciences and Intelligent Management (SSIM), 2021 IEEE International Conference on, , pp. 1-8.

Crosta, A.D., Ceccato, I., Marchetti, D., Malva, P.L., Maiella, R., Cannito, L., Cipi, M., Mammarella, N., Palumbo, R., Verrocchio, M.C., Palumbo, R. & Domenico, A.D. 2021, "Psychological factors and consumer behavior during the COVID-19 pandemic", PLOS ONE, vol. 16, no. 8.

Doucé, L. et al. (2022) "Editorial: Online sensory experiences: Consumer reactions to triggering multiple senses by using psychological techniques and sensory-enabling technologies," Frontiers in Psychology, 13. Available at: https://doi.org/10.3389/fpsyg.2022.992114.

Hall, N. ( 1 ), Schmitz, H. P. ( 2 ) & Michael Dedmon, J. ( 3 ) 2020, "Transnational advocacy and NGOs in the digital era: New forms of networked power theory note", International Studies Quarterly, vol. 64, no. 1, pp. 159-167.

Hamacher, K. & Buchkremer, R. 2021, "Mediation of online sensory marketing through online collaboration software ", Iated, Online Conference, pp. 1387.

Han, Y., Lappas, T. and Sabnis, G., 2020. The Importance of Interactions between Content Characteristics and Creator Characteristics for Studying Virality in Social Media. Information Systems Research, 31(2), pp.576-588.

Islam, T., Pitafi, A.H., Arya, V., Wang, Y., Akhtar, N., Mubarik, S. & Xiaobei, L. 2021, "Panic buying in the COVID-19 pandemic: A multi-country examination", Journal of Retailing and Consumer Services, vol. 59.

Jankowski, J., Zioło, M., Karczmarczyk, A. & Wątróbski, J. 2018, "Towards Sustainability in Viral Marketing with User Engaging Supporting Campaigns", Sustainability (2071-1050), vol. 10, no. 1, pp. 15.

Kim, M., Kim, J., Park, M. & Yoo, J. 2021, "The roles of sensory perceptions and mental imagery in consumer decision-making", Journal of Retailing and Consumer Services, vol. 61, pp. 102517.

Koszembar-Wiklik, M. 2019, "Sensory Marketing – Sensory Communication and its Social Perception", Communication Today, vol. 10, no. 2, pp. 146-157.

Lins, S. & Aquino, S. 2020, "Development and initial psychometric properties of a panic buying scale during COVID-19 pandemic", Heliyon, vol. 6, no. 9, pp. e04746.

Mehrabian, A. & Russell, J.A. 1974, "The Basic Emotional Impact of Environments", Perceptual and Motor Skills, vol. 38, no. 1, pp. 283-301.

Motoki, K., Suzuki, S., Kawashima, R. and Sugiura, M., 2020. A Combination of Self-Reported Data and Social-Related Neural Measures Forecasts Viral Marketing Success on Social Media. Journal of Interactive Marketing, 52, pp.99-117.

Oana, D. 2020, "The Impact of the Current Crisis Generated by the COVID-19 Pandemic on Consumer Behavior", Studies in Business and Economics, vol. 15, no. 2, pp. 85-99.

Petit, O., Cheok, A. D., Velasco, C., Karunanayaka, K. T. & Spence, C. 2015, Sensory marketing in light of new technologies, Association for Computing Machinery.

Petit, O., Velasco, C. & Spence, C. 2019, "Digital Sensory Marketing: Integrating New Technologies Into Multisensory Online Experience", Journal of Interactive Marketing, vol. 45, pp. 42-61.

Quesenberry, K.A. & Coolsen, M.K. 2019, "Drama Goes Viral: Effects of Story Development on Shares and Views of Online Advertising Videos", Journal of Interactive Marketing, vol. 48, pp. 1-16.

Rathee, R., 2017. Sensory Marketing-Investigating the Use of five Senses. International Journal of Research in Finance and Marketing (IJRFM), 7(5), pp.124-133.

Robles, J.F., Chica, M. & Cordon, O. 2020, "Evolutionary multiobjective optimization to target social network influentials in viral marketing", Expert Systems with Applications, vol. 147, pp. 113183.

Reddy, B.V. & Gupta, A. 2020, "Importance of effective communication during COVID-19 infodemic", Journal of Family Medicine and Primary Care, vol. 9, no. 8, pp. 3793-3796.

Reichstein, T. & Brusch, I. 2019, "The decision-making process in viral marketing—A review and suggestions for further research", Psychology & Marketing, vol. 36, no. 11, pp. 1062-1081.

Richvalsky. L., Machyniak, J. & Gutan, D., 2020, "Political Influence of Non-Governmental Organizations and Civil Society", Ad Alta: Journal of Interdisciplinary Research, vol. 10, no. 1, pp. 172-176.

Robles, J.F., Chica, M. & Cordon, O. 2020, "Evolutionary multiobjective optimization to target social network influentials in viral marketing", Expert Systems with Applications, vol. 147, pp. 113183.

Rollins, B., Anitsal, I. & Anitsal, M.M. 2014, "Viral marketing: Techniques and implementation", Entrepreneurial Executive, vol. 19, pp. 1-17.

Saunders, M., Lewis, P. and Thornhill, A., 2007. Research methods for business students.

Sheth, J. 2020, "Impact of Covid-19 on consumer behavior: Will the old habits return or die?", Journal of Business Research, vol. 117, pp. 280-283.

Tellis, G., Maclnnis, D., Tirunillai, S. and Zhang, Y. (2019). What Drives Virality (Sharing) of Online Digital Content? The Critical Role of Information, Emotion, and Brand Prominence. Journal of Marketing, 83(4), pp.1-20.

Vázquez-Martínez, U.J., Morales-Mediano, J. & Leal-Rodríguez, A.L. 2021, "The impact of the COVID-19 crisis on consumer purchasing motivation and behavior", European Research on Management and Business Economics, vol. 27, no. 3, pp. 100166.

Wilde, S. 2014, Viral Marketing within Social Networking Sites: The Creation of an Effective Viral Marketing Campaign, Diplomica Verlag, Hamburg Germany].

# THE IMPACT OF PERCEIVED RISK ON CONSUMERS' PURCHASE INTENTION OF LUXURY FASHION PRODUCTS MADE WITH PLANT-BASED LEATHER ALTERNATIVES

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## ABSTRACT

As consumers' demand for sustainable products grows, many luxury fashion brands have started developing and using innovative and more sustainable materials (Luo, 2021). With production accounting for 70% of the fashion industry's emissions, use of materials with lower environmental impact plays a key part in decarbonisation (Amed et al., 2021). Leather has a significantly larger environmental impact compared to other material groups (Kering, 2020); additionally, with the number of vegan consumers growing rapidly (Statista, 2020), and leather being made from animal skins and hide, development of leather alternatives is essential to ensure the demand of this group of consumers is met. Hence, alternatives for real leather, particularly ones that are plant-based, are gaining significant attention from both luxury fashion brands and consumers.

When using innovative sustainable materials, luxury fashion brands face many challenges. As these materials are new to consumers, there is a high level of uncertainty and perceived risk associated with them which could negatively impact consumers' purchase intention (Popielarz, 1967; Ross, 1975). Perceived risk is one of the key elements of consumers' purchase behaviour (Lang, 2018) and is one of the barriers to innovation adoption (Wisdom et al., 2013). If luxury fashion companies are to successfully incorporate plant-based leather alternatives in their products, and market them effectively, it is imperative to understand how risk averse consumers are and their perceived risk of luxury fashion products made with such materials. Whilst perceived risk and risk aversion have been previously studied by many academics (Lang, 2018; Popielarz, 1967; Ross, 1975) there is no research on them in the context of consumers' purchase intention of luxury fashion products made with plant-based leather alternatives.

This study takes a multidisciplinary approach to fill this gap in knowledge by building on extant literature on innovation adoption, perceived risk and risk aversion using qualitative primary data. 20 semi-structured interviews will be conducted with female Generation Z luxury fashion consumers who are the primary audience for this research.

The results will be analysed using thematic analysis to develop a theoretical framework which will have a notable contribution to academia as it extends knowledge on literature on innovation adoption, perceived risk and risk aversion in the context of luxury fashion, and the use of plant-based leather

alternatives. Moreover, the framework can be used by other researchers and academics in the field to build on further in future research. In addition to academic contributions, this study will also have valuable contributions to the industry. Luxury fashion brands and companies who develop plant-based leather alternatives can incorporate the novel insights generated from this research to inform their business strategies and create effective marketing campaigns for products made from these materials.

*Keywords: Plant-based Leather Alternatives, Sustainable Materials, Sustainable Luxury Fashion, Perceived Risk, Innovation Adoption, Generation Z*

## REFERENCES

Amed, I., Berg, A., Balchandani, A., Hedrich, S., Jensen, J. and Straub, M., 2021. The State of Fashion 2022. [online] Available at: <https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf> [Accessed 2 September 2022].

Kering. (2020) [online] Available at: <https://keringcorporate.dam.kering.com/m/123011b213f0bbf4/original/Rapport-Kering-Environmental-Profit-and-Loss-report-2020-EN-only.pdf> [Accessed 1 September 2022].

Lang, C., 2018. Perceived risks and enjoyment of access-based consumption: identifying barriers and motivations to fashion renting. Fashion and Textiles, [online] 5(1). Available at: <https://fashionandtextiles.springeropen.com/articles/10.1186/s40691-018-0139-z#ref-CR18> [Accessed 1 September 2022].

Luo, S., Henninger, C., Le Normand, A. and Blazquez, M., 2021. Sustainable what…? The role of corporate websites in communicating material innovations in the luxury fashion industry. Journal of Design, Business & Society, [online] 7(1), pp.83-103. Available at: <https://www.ingentaconnect.com/contentone/intellect/dbs/2021/00000007/00000001/art00006?crawler=true&mimetype=application/pdf> [Accessed 1 September 2022].

Popielarz, D.T. (1967) "An exploration of perceived risk and willingness to try new products," Journal of Marketing Research, 4(4), p. 368. Available at: <https://journals.sagepub.com/doi/abs/10.1177/002224376700400405> [Accessed: February 24, 2023].

Statista. 2020. Number of vegans Great Britain 2019 | Statista. [online] Available at: <https://www.statista.com/statistics/1062104/number-of-vegans-in-great-britain/> [Accessed 1 September 2022].

Ross, I., 1975 ,Perceived Risk and Consumer Behavior: a Critical Review, in NA - Advances in Consumer Research Volume 02, eds. Mary Jane Schlinger, Ann Abor, MI : Association for Consumer Research, Pages: 1-20.

Wisdom, J.P. et al. (2013) "Innovation adoption: A review of theories and constructs," Administration and Policy in Mental Health and Mental Health Services Research, 41(4), pp. 480–502. Available at: <https://link.springer.com/article/10.1007/s10488-013-0486-4#ref-CR17> [Accessed: February 24, 2023].

# DIGITAL INNOVATION LEADING FACTORS IN MIGRANTS FEMALE ENTREPRENEURS SUCCESS- BAVARIA CASE STUDY

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## ABSTRACT

## PURPOSE

The purpose of this study is to understand the influential factors that impact the level of digital innovation, job engagement, leadership competencies, and entrepreneurial skills, of migrant women entrepreneurs in Bavaria, Germany. The objectives are to identify potential relationships between the measures of control variables and to test research-based factors influencing business strategies, mostly related to digital innovation. Based on the literature
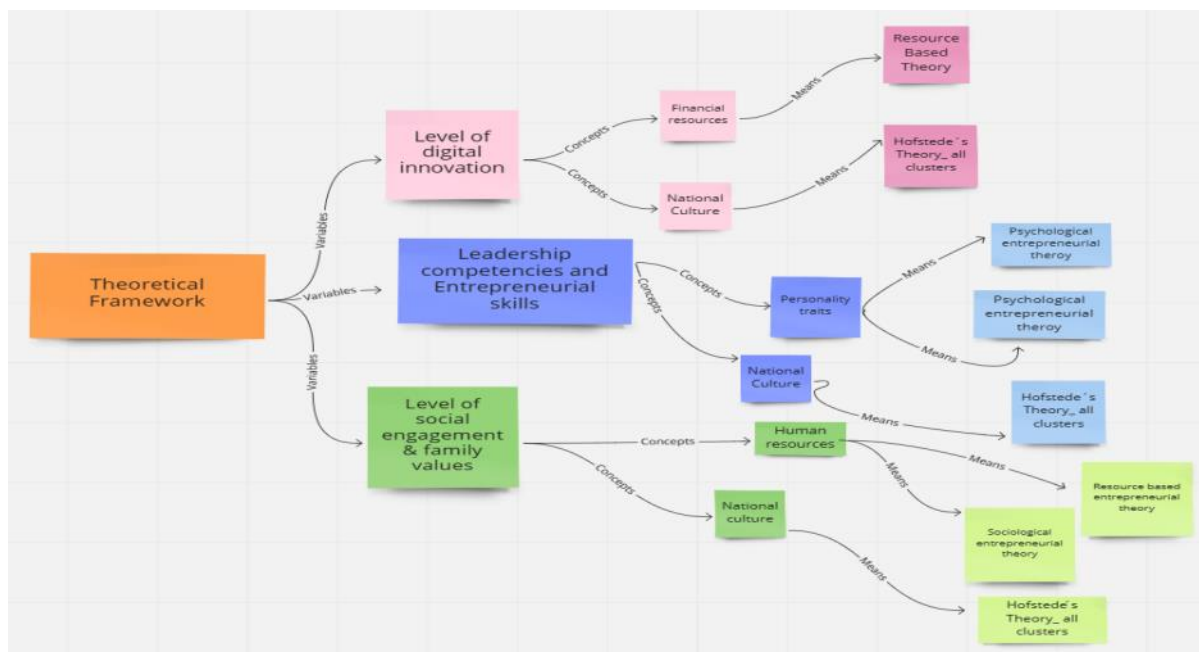


Figure 1. The research Theoretical Framework, Source: Authors' Literature review.

review, we concluded various gaps and built a Theoretical framework to test the extent to which these influential factors act as motivators for business growth (Figure 1).

## METHODOLOGY

Findings emerged from the conducted literature review were constructed into an online survey that of 23 questions testing the following research assumptions:

- How does digital innovation affect the family female immigrant businesses in Bavaria?
- How does the cultural background impact migrant female entrepreneurs' managerial skills in Bavaria?

These two research questions are answered by studying 2 devised hypotheses that are studied through the ordinal regression analysis in SPSS.

- Governmental support ensures a safety net for female immigrant firms in Bavaria.
- Female entrepreneurs from diverse cultural backgrounds face more challenges to develop their managerial competencies and entrepreneurial skills in their family firms in Bavaria.

The main literature review findings and as derived from the theoretical framework, are presented in Figure 3 and Figure 4 as per Appendix 1.

Based on the interpretive and the positivist philosophy, a cross-sectional study of mixed research method has been designed to collect primary quantitative data, of ordinal type, from the online survey. Additionally, qualitative secondary data is retrieved from the Federal Ministry for Economic Affairs and Climate Action, the Federal Ministry of Education and Research, and the Federal Ministry of Economic Affairs and Climate Action in Germany. The survey sample consists of 70 first or second-generation migrant female entrepreneurs who run a family business in Bavaria, regardless of the industrial field, age, educational background, financial status, years of experience, or company size, and based on the methodological framework. Figure 2 in the Appendix entails this information. The convenient and snowball non-probability sampling techniques apply to attract the population on three digital platforms, the Facebook club of women entrepreneurs in Munich, Ludwig´s university center of innovation and entrepreneurship in Munich, and the LinkedIn Career services of European university in Munich. The Cronbach's Alpha reliability test is computed for testing the questionnaire's reliability and calculated in SPSS. Secondary data is further analyzed thematically. A pilot study is conducted with 1 focused group of migrant female entrepreneurs situated in Bavaria to ensure the appropriateness of the questionnaire. The group consists of 5 female migrant entrepreneurs who run a family business for an online hourly discussion. Demographics remain as they are in the sample size of the online survey.

## RESULTS FINDINGS

Upon completion of the study, relationships between the measures of control variables are expected to be identified and interpreted. Results confirm that bureaucratic challenges faced by female immigrant entrepreneurs are tackled with social networking and practical support in communities of practice. Family values are woven through all entrepreneurial activities and differences are observed between migrants coming from western and those from non-Western countries. A portfolio of successful

business strategies per family firm will be created to support female immigrant entrepreneurs initially at a local level. Furthermore, a research report will be prepared for handing out to local authorities in Bavaria that support family firms run by female immigrant entrepreneurs.

## PRACTICAL IMPLICATIONS

Since the online survey sample includes local institutions personnel, the study will be made available to them and their peers. Depending on the wideness of its popularity, the federal ministries would be informed for tailoring further information dedicated to this group of migrant female entrepreneurs in supporting their actions and business via funding, training, or other digital innovation-related methods. Moreover, a digital platform will be possibly designed in collaboration with the European University to become the launchpad for new research in the field of entrepreneurship and improve the current situation through mentoring.

## ORIGINALITY

New information will be discovered through the data analysis regarding digital innovation and the cultural impact on female entrepreneurial skills. The most important aspect derived from this study is the sample population that has not been yet tested. Female migrant entrepreneurs who run a family business in Bavaria are the new combination of demographics that makes its entrance to the research communities of the field (Rath & Swagerman, 2016; Hopp & Martin, 2017; Harima, 2022).

*Keywords: female migrants, entrepreneurship, family business, Bavaria, business growth*

## REFERENCES

Harima, A. (2022) Transnational migration entrepreneurship during a crisis: Immediate response to challenges and opportunities emerging through the COVID-19 pandemic. Business and Society Review, 127(S1), pp. 223-251. https://doi.org/10.1111/basr.12266

Hopp, C., & Martin, J. (2017) Does entrepreneurship pay for women and immigrants? A 30-year assessment of the socio-economic impact of entrepreneurial activity in Germany. Entrepreneurship and Regional Development, 29(5-6), pp. 517-543.

Rath, J., & Swagerman, A. (2016) Promoting ethnic entrepreneurship in European cities: Sometimes ambitious, mostly absent, rarely addressing structural features. International Migration Review, 54(1), pp.152–166.

## APPENDIX 1. VISUALIZATION OF RESEARCH FRAMEWORKS
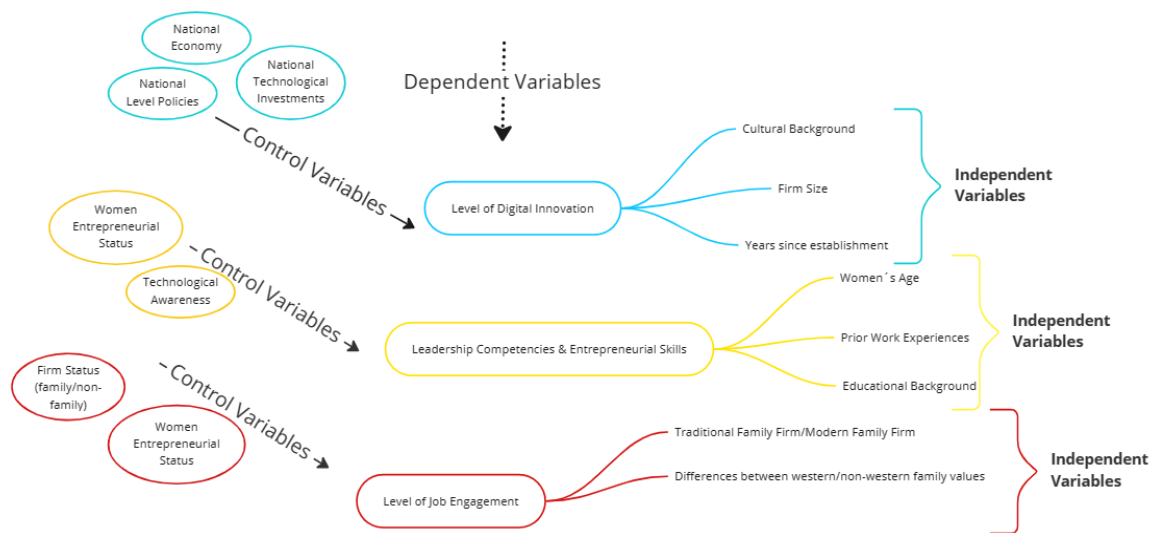


Figure 2. Methodology framework of the study, Source: Authors research



Figure 3. Mapping of the literature review conclusions as they are informed by the theoretical framework compiled by the authors.

| DEPENDENT VARIABLES & RESEARCH QUESTIONS | MEASURED ITEMS | SURVEY QUESTIONS | TYPE OF DATA | ANALYSIS |
|---|---|---|---|---|
| LEVEL OF DIGITAL INNOVATION<br><br>RQ1. How does digital innovation affect the female immigrant businesses in Germany? | • services offered to clients<br>• access to scientific resources<br>• use of key performance indicators (KPIs)<br>• new products or services since the establishment<br>• implemented innovative ideas that became a success story | 1. How recently have you updated the services you offer to clients?<br>2. How often do you access scientific resources?<br>3. How often do you review key performance indicators (KPIs) regarding operational efficiency and employee engagement?<br>4. How satisfied are you with the launch of your new products/ services?<br>5. How much has the government supported your decision-making to launch new products/services?<br>6. To what extent have governmental initiatives supported entrepreneurs or future entrepreneurs coming from diverse cultural backgrounds? | ordinal | Descriptive statistics:<br>Frequency distribution analysis<br>For possible relations between ordinal variables:<br>Spearman rank correlation test |
| ENTREPRENEURIAL SKILLS<br><br>RQ2. In which ways do women entrepreneurs of western countries differ from those of eastern countries based on entrepreneurial skills? | • increased market access<br>• increased employment or work hours<br>• sales increase<br>• more strategic orientation | 1. To what extent have the employees' or your innovative ideas become a success plan/story?<br>2. How often do you provide mentoring sessions to your employees/clients?<br>3. How important do you find empathy towards team members?<br>4. How often do you communicate with your employees?<br>5. How much do you count on employee competencies?<br>6. How has the cultural background affected your communication with colleagues?<br>7. How has the cultural background affected your communication with customers/clients?<br>8. Which of the following categories best describes the level of trust among employees?<br>9. How important do you consider the use of evidence-based practices in the workplace? | ordinal | Descriptive statistics:<br>Frequency distribution analysis<br>For possible relations between ordinal variables:<br>Spearman rank correlation test |
| LEVEL OF JOB ENGAGEMENT & FAMILY VALUES<br><br>RQ3. What are the differences in terms of family concept and its perceived value(s) between western and non-western women entrepreneurs that impact job engagement? | • turnover rate<br>• absenteeism or leavism<br>• performance appraisal<br>• customer's loyalty<br>• employees diversity regarding gender and age<br>• T&D effectiveness | 1. How satisfied are you with your company's turnover rate?<br>2. How loyal do you consider your clients?<br>3. How meaningful is gender and age workforce diversity in your firm?<br>4. How often are your employees absent?<br>5. To what extent do you focus on performance appraisals?<br>6. How often do you provide training and development sessions to your employees?<br>7. How often do you attend training and development sessions?<br>8. How meaningful do you consider the cultural background for supporting individual and team performance?<br>9. How meaningful do you consider the cultural background for supporting organizational performance?<br>10. To what extent would you distinguish between western and non-western mindsets regarding professional values, such as honesty, trust, and fairness? | ordinal | Descriptive statistics:<br>Frequency distribution analysis<br>For possible relations between ordinal variables:<br>Spearman rank correlation test |
| LEADERSHIP COMPETENCIES<br><br>RQ4. How has the cultural background affected their managerial role and competences to lead? | • mentoring team members<br>• empathy towards team members<br>• regular communication with peers<br>• trust among employees<br>• employee competencies<br>• use of evidence-based practices | 1. How have your working hours increased in the last two years?<br>2. How have the working hours of your employees increased in the last two years?<br>3. How has the number of newcomers (new hires) increased in the last two years?<br>4. How have your entrepreneurial skills impacted the sales profit?<br>5. How has strategic orientation increased since its establishment?<br>6. How has strategic orientation increased in the last two years?<br>7. To what extent have your entrepreneurial skills affected positively market access?<br>8. To what extent has impacted the cultural background your decision-making for becoming an entrepreneur? | ordinal | Descriptive statistics:<br>Frequency distribution analysis<br>For possible relations between ordinal variables:<br>Spearman rank correlation test |

Figure 4. Structure of the online survey, Source: authors' research based on the literature review findings.

# PUBLIC OWNERSHIP AND PRODUCTIVITY OF LOCAL TRANSPORT COMPANIES. DOES ESG MATTER?

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## ABSTRACT

Local transport systems play a key role in the socio-economic development of a country. It is fundamental to manage mobility services more efficiently and effectively (Zhang et al., 2016).

In fact, metrics used to assess the performance of local transport systems include technical efficiency, total factor productivity, service satisfaction (Fielding et al., 1985; Hensher, 1987, 2001; Boitani et al., 2013).

The Italian local transport system consists of companies whose shareholding structure is generally characterized by public ownership. Based on the latter, public, private and mixed local transport companies can be distinguished (Mocetti and Roma, 2021).

Although at a very sluggish pace, transport companies as well began to implement ESG efforts and report their performance. However, the amount of ESG activity engagement by the local mobility sector is relatively modest.

In this context, the aim of this study is twofold: (i) evaluating how much public ownership in the shareholding affects the productivity of local transport companies; (ii) testing the existence of a combined effect of ESG-compliant practices adoption and public ownership on the local transport companies' productivity.

The study adopted a two-stage approach: a weighted least squares (WLS) estimation as first stage to achieve the first aim of the study, consisting of assessing the influence of the public ownership on productivity; a difference-in-differences (DID) as second stage to estimate the combined causal effect of ESG compliance practices adoption and public ownership on productivity. In DID, local transport companies that adopt ESG-compliant practices are compared with those that do not adopt them.

Furthermore, the DID estimation eliminates the influence of all observable and unobservable nonrandom factors that were greatly persistent and over space and time, thus making the obtained estimation more reliable than that obtained through WLS. Using the DID estimation, systematic differences affecting productivity between the two study groups is eliminated, as well as the influence of omitted-variable bias, provided that the local transport companies in the treated group (ESG-

compliant adoption) and the control group (ESG-compliant non-adoption) had similar features which could influence their productivity.

Productivity is calculated through Total Factor Productivity (TFP) function, adapted from Ackerberg et al. (2015) that suggested an approach (the ACF method) based on Olley and Pakes (1996) and Levinsohn and Petrin (2003) method in order to improve the accuracy of estimation (Demmel et al., 2017; Luong, 2013). ACF method was adopted, and a separate translog production function was estimated for the sample which related the log of value added, to the log of capital and labor.

The units of analysis are represented by the local transport companies, whose data were extracted from the AIDA database (Bureau Van Dijk, 2022) for the period 2017-2021 and refer to: (i) fixed assets; (ii) value added; (iii) production value; (iv) number of employees at a companies; (iv) age, defined as number of years since a company's founding; (v) percentage of public ownership; (vi) ESG-compliant practices adoption.

Following a large body of literature, the research first analyzed the relationship between ownership and productivity of firms. The novelty of this study is the further investigation on the effects of ESG-compliant practices adoption on productivity based on the percentage of public ownership in the shareholding structure, by providing a more comprehensive analysis in the Italian context. Indeed, theoretical predictions on this matter are relatively undeveloped and unclear.

Preliminary results suggest that the percentage of public ownership influence positively productivity in the case of companies which adopt ESG-compliant practices more than in the case of companies which do not adopt them.

Findings contribute to enrich the empirical evidence concerning the importance of establishing a balanced public ownership in the shareholding structure adequately combined with ESG-compliant practices, aiming at achieving the sustainable development goals of the Agenda 2020. In addition, the results provide a more suitable information base for decision-making processes on the management and delivery of local public transport services to promote the growth and integration of socially and environmentally responsible practices within corporate strategies.

*Keywords: environmental; social; corporate governance; total factor productivity, shareholding; mobility; corporate social responsibility*

## REFERENCES

Ackerberg, D. A., Caves, K., & Frazer, G. (2015). Identification properties of recent production function estimators. Econometrica, 83(6), 2411-2451.
Boitani, A., Nicolini, M., et al., 2013. Do competition and ownership matter? Evi- dence from local public transport in Europe. Appl. Econ. 45 (11), 1419–1434.

Bureau Van Dijk. (2022). AIDA - Analisi informatizzata delle aziende italiane. https://aida.bvdinfo.com/version-202255/home.serv?product=AidaNeo

Demmel, M. C., Máñez, J. A., Rochina-Barrachina, M. E., & Sanchis-Llopis, J. A. (2017). Product and process innovation and total factor productivity: Evidence for manufacturing in four Latin American countries. Review of Development Economics, 21(4), 1341–1363.

Escrig-Olmedo, E.; Muñoz-Torres, M.J.; Fernández-Izquierdo, M.Á. Sustainable Development and the Financial System: Society's Perceptions about Socially Responsible Investing. Bus. Strategy Environ. 2013, 22, 410–428.

Fielding, G.J., Babitsky, T.T., et al., 1985. Performance evaluation for bus transit. Transp. Res. Part A: Gene. 19 (1), 73–82.

Hensher, D.A., 1987. Productive efficiency and ownership of urban bus services. Transportation 14 (3), 209–225.

Hill, R.P.; Ainscough, T.; Shank, T.; Manullang, D. Corporate Social Responsibility and Socially Responsible Investing: A Global Perspective. J. Bus. Ethics 2007, 70, 165–174.

Levinsohn, J., & Petrin, A. (2003). Estimating production functions using inputs to control for unobservables. Review of Economic Studies, 70(2), 317–341.

Luong, T. A. (2013). Does learning by exporting happen? Evidence from the automobile industry in China. Review of Development Economics, 17(3), 461–473

Mocetti S. and Roma G. (2021). Il trasporto pubblico locale: passato, presente e futuro. Questioni di Economia e Finanza, 615, 1-31.

Olley, G. S., & Pakes, A. (1996). The dynamics of productivity in the telecommunications equipment industry. Econometrica, 64(6), 1263–1297.

Paraschi, E. P. (2022). Why ESG Reporting is Particularly Important for the Airlines during the Covid-19 Pandemic. Journal of Business and Management Studies, 4(3), 63-67.

Pham, T. N., Tran, P. P., Le, M. H., Vo, H. N., Pham, C. D., & Nguyen, H. D. (2022). The Effects of ESG Combined Score on Business Performance of Enterprises in the Transportation Industry. Sustainability, 14(14), 8354.

Zhang, C., Juan, Z., Luo, Q., & Xiao, G. (2016). Performance evaluation of public transit systems using a combined evaluation method. Transport Policy, 45, 156-167.

# ALLOCENTRIC PERSPECTIVE ON VALUE CAPTURE IN THE ECOSYSTEM OF DIGITAL BUSINESS PLATFORMS

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## ABSTRACT

Ecosystem, a term firstly introduced in ecology, is widely used in the field of management. Due to extensive digitalization and information technology advancement, novel business models such as digital business platforms emerged (El Sawy and Pereira, 2013). The conceptualisation of digital platforms varies from the complex set of pure technical artifacts to sociotechnical convergence (De Reuver, Sørensen and Basole, 2018) with a surrounded ecosystem of various participating actors (Fehrer, Woratschek and Brodie, 2018; Schreieck, Wiesche and Krcmar, 2018; Zutshi and Grilo, 2019). The concept of digital business platforms ecosystem can be described as constantly transforming groups of heterogeneous social and economic actors, who share a common purpose and are able to collectively generate ecosystem-level output (Autio and Thomas, 2014) via repeated interactions which are coordinated through digital technologies to collectively create and collectively capture co-created value (Burkhalter *et al.*, 2021, p. 272) despite possible tensions between actors in the ecosystem. The definition of this concept uncovers two processes related to the business ecosystem – the process of value creation in collaboration with endogenous actors (Fehrer, Woratschek and Brodie, 2018) and the complementary process – value capture – between collaborating actors. Due to the ongoing digitalization and embedded information technology, an operating platform business model is affected by the possibility to capture, process, store internal and external data, and communicate that data (Burkhalter *et al.*, 2021, p. 258) which can be seen as a strategic non-financial value (Monino, 2021) for the whole ecosystem.

This article aims at devising a holistic mechanism of non-financial value capture between all participating actors in the ecosystem of digital business platforms. To do this effectively, two research questions have been formulated: (1) how does a platform owner use its power over other actors to capture co-created non-financial value in the business platform ecosystem? and (2) how to orchestrate the process of value capture to enable distribution of non-financial value capture in the ecosystem of digital business platforms? This article provides a theoretical framework for explaining the mechanism of non-financial value capture in the ecosystem of digital business platforms.

Khademi (2020) noticed that the scientific interest in these topics has been growing recently, however, research remains mainly fragmented. Even though the processes of value creation and value co-

creation are covered (e. g. Hein et al., 2019; Schiavone, Mancini, Leone, & Lavorato, 2021), research on value capture in the digital business ecosystems remains disintegrated despite several proper endeavours (e. g. Schreieck, Wiesche, & Krcmar, 2018). A comparative literature analysis show that reasons for this insufficiency can be connected to the misconceptions in value understanding, even though value as an object has been vastly studied across a wide range of research fields, including innovation research (Chesbrough, Lettl and Ritter, 2018), marketing (Fehrer, Woratschek and Brodie, 2018), and management and organization (Lepak, Smith and Taylor, 2007), rejection of allocentric perspective of value capture in the business ecosystem (Burkhalter *et al.*, 2021, p. 265), lack of understanding about non-financial value (Hein *et al.*, 2020) and how to capture it. a paradigm switch from a pure idiocentric view (where value is captured by a single actor) to an allocentric perspective (where value is distributed among participating actors) (Burkhalter *et al.*, 2021, p. 259) . Such a switch is characteristic of a digital business platform and its ecosystem but is under-researched. Furthermore, Gawer (2022) proposed contradicting arguments to the allocentric perspective of value capture, stating that even though each platform ecosystem consists of a wide network of participating actors and value creation is collectively distributed among them, value capture is centralized and primarily depends on the platform's owner individual aims and intentions.

The above scientific contradictions pave the way for a deeper investigation focused on allocentric perspective on value capture. The proposed conceptual framework is crucial to evaluate non-financial value capture between all participating actors in a holistic way.

*Keywords: allocentric perspective, value capture, digital platforms, platform ecosystems, business platforms, digital ecosystems, digital business models.*

## REFERENCES

Autio, E. and Thomas, L. D. W. (2014) "Innovation ecosystems", in Dodgson, M., Gann, D., and Phillips, N. (eds) The Oxford Handbook of Innovation Management. 1st edn. Oxford: Oxford University Press, pp. 204–228.

Burkhalter, M. et al. (2021) "Theories of Change", in Wendt, K. and Rammerstorfer, M. (eds) Theory of Change. 1st edn. Cham: Springer Nature, pp. 257–294. doi: https://doi.org/10.1007/978-3-030-52275-9.

Chesbrough, H., Lettl, C. and Ritter, T. (2018) "Value Creation and Value Capture in Open Innovation", Journal of Product Innovation Management, 35(6), pp. 930–938. doi: 10.1111/jpim.12471.

Fehrer, J. A., Woratschek, H. and Brodie, R. J. (2018) "A systemic logic for platform business models", Journal of Service Management, 29(4), pp. 546–568. doi: 10.1108/JOSM-02-2017-0036.

Gawer, A. (2022) "Digital platforms and ecosystems: remarks on the dominant organizational forms of the digital age", Innovation: Organization and Management. Routledge, 24(1), pp. 110–124. doi: 10.1080/14479338.2021.1965888.

Hein, A. et al. (2019) "Value co-creation practices in business-to-business platform ecosystems", Electronic Markets. Electronic Markets, 29(3), pp. 503–518. doi: 10.1007/s12525-019-00337-y.

Hein, A. et al. (2020) "Digital platform ecosystems", Electronic Markets. Electronic Markets, 30(1), pp. 87–98. doi: 10.1007/s12525-019-00377-4.

Khademi, B. (2020) "Ecosystem value creation and capture: A systematic review of literature and potential research opportunities", Technology Innovation Management Review, 10(1), pp. 16–34. doi: 10.22215/timreview/1311.

Lepak, D. P., Smith, K. G. and Taylor, M. S. (2007) "Value creation and value capture: A multilevel perspective", Academy of Management Review, 32(1), pp. 180–194. doi: 10.5465/AMR.2007.23464011.

Monino, J. L. (2021) "Data Value, Big Data Analytics, and Decision-Making", Journal of the Knowledge Economy. Journal of the Knowledge Economy, 12(1), pp. 256–267. doi: 10.1007/s13132-016-0396-2.

De Reuver, M., Sørensen, C. and Basole, R. C. (2018) "The digital platform: A research agenda", Journal of Information Technology. Palgrave Macmillan UK, 33(2), pp. 124–135. doi: 10.1057/s41265-016-0033-3.

El Sawy, O. A. and Pereira, F. (2013) "Digital Business Modles: Review and Synthesis", in El Sawy, O. A. and Pereira, F. (eds) Business Modelling in the Dynamic Digital Space: An Ecosystem Approach. 1st edn. London: Springer, pp. 13–20.

Schiavone, F. et al. (2021) "Digital business models and ridesharing for value co-creation in healthcare: A multi-stakeholder ecosystem analysis", Technological Forecasting and Social Change. Elsevier Inc., 166(January), p. 120647. doi: 10.1016/j.techfore.2021.120647.

Schreieck, M., Wiesche, M. and Krcmar, H. (2018) "The Platform Owner's Challenge to Capture Value - Insights from a Business-to-Business IT Platform", ICIS 2017: Transforming Society with Digital Innovation, (December).

Zutshi, A. and Grilo, A. (2019) "The Emergence of Digital Platforms: A Conceptual Platform Architecture and impact on Industrial Engineering", Computers and Industrial Engineering, 136(November), pp. 546–555. doi: 10.1016/j.cie.2019.07.027.

# CONCEPTUAL RESEARCH FRAMEWORK CONCERNING INDUSTRY 4.0 TECHNOLOGIES' SUITABILITY FOR ADOPTION IN MARKETING FUNCTIONS WITHIN SMES

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## ABSTRACT
## RESEARCH GAP AND RESEARCH AIM

Nowadays, the business environment is very dynamic due to the 4th Industrial Revolution, which refers to the digitalization processes within companies and leads to increased interconnection (Schmidt *et al.*, 2020). The literature review shows that the adoption of Industry 4.0 technologies has lots of benefits for SMEs, especially in marketing-related functions such as price, product, place, and promotion (Caliskan *et al.*, 2020). Recognizing the changes that are caused by Industry 4.0, SMEs are becoming more proactive in transforming their business models to enable Industry 4.0 technologies.

Therefore, in recent years, the interest of scholars researching the enablement of Industry 4.0 technologies has increased. One of the most commonly used theoretical frameworks is the Technology Acceptance Model (TAM), which was used in the study by Camilleri (2018). Nair *et al.* (2019), in their study, used the extended Technology-Organization-Environment (TOE) framework. Meanwhile, Maroufkhani *et al.* (2020) utilized a framework that combined TOE and Diffusion of Innovation Theory (DOI) elements.

However, there is a research gap regarding a unified research framework to assess Industry 4.0 technologies' suitability for enablement in SMEs' marketing functions. Accordingly, this study aims to propose a conceptual research framework, incorporating variables from three theoretical frameworks (DOI, TAM and TPB) and adding two moderating variables, such as the type of Industry 4.0 technology and the size of small and medium-sized enterprises.

## METHODOLOGY AND RESEARCH MODEL

The proposed conceptual research model is illustrated in picture No. 1. The novelty of the proposed conceptual model is that it focuses on the specifics of technological innovations and their relationship to Industry 4.0, as well as on the differences in the resources of SMEs based on their size. The models' variables and relations between them are being discussed further on.

According to Brkljac and Sudarevic (2018), many recent technological breakthroughs, such as the Internet of Things (IoT) and Artificial Intelligence (AI) – are the main enablers of Industry 4.0.

Therefore, based on the proposed conceptual framework, the characteristics of the Industry 4.0 technologies will impact the perception of their suitability for adoption in marketing functions within SMEs. Characteristics of Industry 4.0 technologies can be identified using the DOI framework (i.e., *perceived relative advantage, perceived compatibility, etc.)*. Meanwhile, the perception of Industry 4.0 technologies' can be investigated while including TAM elements such as *perceived usefulness (PU) and perceived ease of use (PEOU)*. The relationship between PEOU as well as between PU and DOI model variables was confirmed by the authors (Al-Rahmi *et al.*, 2019). Moreover, it is hypothesized that the perception (*PU* and *PEOU*) of the Industry 4.0 technologies' suitability for adoption in marketing functions will influence the attitude towards its suitability for adoption in marketing functions within SMEs. The positive relationship between these variables was confirmed by Alhashmi *et al.* (2019). In addition, the behavioural intention to adopt new technology will be influenced by the attitude toward that technology. Consequently, if the owner or manager of an SME has a favourable outlook on the technology, they will adopt it (Rahman *et al.*, 2021).
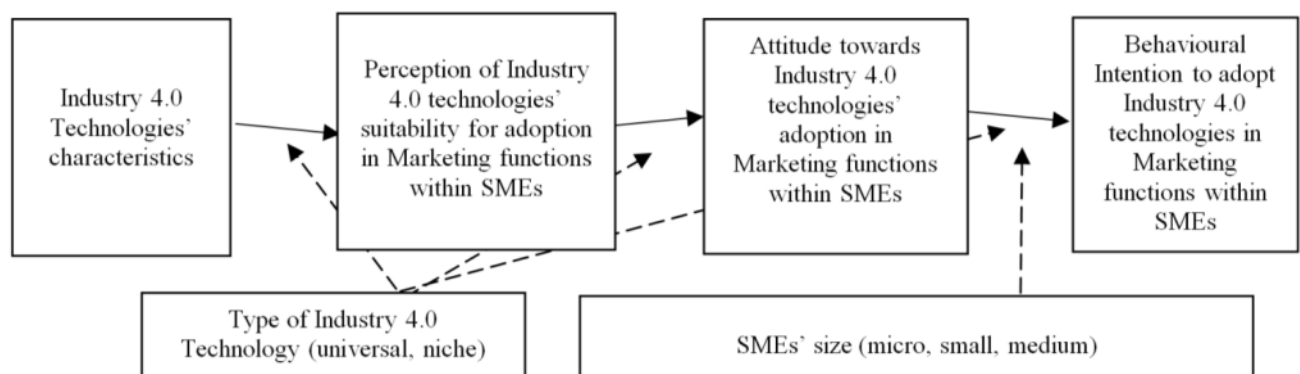


Picture 1. Conceptual Research Model
Source: created by the author.

According to Ćoćkalo *et al.* (2019), some of the technologies associated with Industry 4.0 may be utilized extensively, while others are more specialized. By enabling networking technologies, for instance, customers can become co-creators of the product, meanwhile, augmented reality or voice assistance can enhance the customized shopping experience (Ungerman and Dĕdková, 2019). Thus, Industry 4.0 technologies' can be categorized as universal (having an impact on several marketing functions) or niche (having an impact on one marketing function). Therefore, it is hypothesized that the type of Industry 4.0 technology will moderate the relationships between model variables and that the relationship between model variables will be stronger in the case of the adoption of the universal Industry 4.0 technology in marketing functions within SMEs.

The second moderator in the model is the size of the SMEs, which is a variable of the TOE framework. SMEs can be divided into three categories: micro, small, and medium-sized enterprises (European Commission, 2018). According to Skafi *et al*. (2020), organizational size is considered a significant factor for small businesses when adopting technologies. According to Kumar *et al*. (2017), in an SME context, management refers to the owner of the SME unit. Consequently, if top management is unsatisfied with the benefits of Industry 4.0 technologies to an organization's business, then its enablement would be rejected. Additionally, most SMEs have budget deficiencies and a lack of expertise (Ulas, 2019). Thus, it is hypothesized that the size of the SMEs' will moderate the relationship between the attitude towards Industry 4.0 technologies' adoption in Marketing functions within SMEs and the behavioural intention to adopt the technology. This relationship is hypothesized to be stronger in the case of larger SMEs.

Thus, the conceptual research model hypotheses are formulated:

*H1: Industry 4.0 technologies' characteristics impact the perception of Industry 4.0 technologies' suitability for adoption in marketing functions within SMEs.*

*H2: The impact of the perceived Industry 4.0 technologies' characteristics on the perception of Industry 4.0 technologies' suitability for adoption in marketing functions within SMEs is moderated by the type of Industry 4.0 technology.*

*H3: The perception of Industry 4.0 technologies' suitability for adoption in marketing functions within SMEs influences the attitude towards Industry 4.0 technologies' adoption in marketing functions within SMEs.*

*H4: The impact of the perception of Industry 4.0 technologies' suitability for adoption in marketing functions within SMEs on the attitude towards Industry 4.0 technologies' adoption in marketing functions within SMEs is moderated by the type of Industry 4.0 technology.*

*H5: The attitude towards Industry 4.0 technologies' adoption in marketing functions within SMEs affects the behavioural intention to adopt Industry 4.0 technologies in marketing functions within SMEs.*

*H6: The relationship between the attitude towards Industry 4.0 technologies' adoption in marketing functions within SMEs and the behavioural intention to adopt Industry 4.0 technologies in marketing functions within SMEs will be stronger in the case of universal Industry 4.0 technology adoption.*

*H7: The relationship between the attitude towards Industry 4.0 technologies' adoption in marketing functions within SMEs and the behavioral intention to adopt Industry 4.0 technologies in marketing functions within SMEs will be stronger in the case of larger SMEs.*

## CONTRIBUTION FOR THE FIELD AND MANAGERIAL PRACTICE

This study has managerial practice implications in regard to recent trends associated with the tremendously rapid development of Industry 4.0 technologies. Managers of small and medium-sized

enterprises may utilize the proposed conceptual model as an additional instrument when assessing the potential of the new technologies' adoption suitability in marketing functions within their business entities. This paper shall also contribute to the extant literature by providing a unified theoretical framework based on which future researchers can select the category of Industry 4.0 technologies and explore their suitability for adoption in the marketing functions of different sizes' of SMEs. A limitation of the study is the subjectivity of the selected characteristics of the Industry 4.0 technologies based solely on the DOI framework, as some studies found that several DOI variables are the antecedents of PU and PEOU from the TAM model. Thus, for future research, it is proposed to include more Industry 4.0 technologies' characteristics outside of the DOI classification.

*Keywords: Industry 4.0, Marketing Functions, Technology Enablement, SMEs.*

## REFERENCES

Alhashmi, S-FS., Salloum, S. A. and Mhamdi, C. (2019), "Implementing Artificial Intelligence in the United Arab Emirates Healthcare Sector: An Extended Technology Acceptance Model", International Journal of Information Technology and Language Studies (IJITLS), Vol. 3 No 2., pp. 27-42.

Al-Rahmi, W. M., Yahaya, N., Aldraiweesh, A. A., Alamri, M. M., Aljarboa, N. A., Alturki, U. and Aljeraiwi, A. A. (2019), "Integrating technology acceptance model with Innovation Diffusion Theory: An empirical investigation on students' intention to use E-Learning Systems ", IEEE Access, Vol. 7, pp. 26797–26809.

Brkljac, M., and Sudarevic, T. (2018), "Sharing economy and "Industry 4.0" as the business environment of Millennial Generation – a marketing perspective", in DAAAM International proceedings of the 29th International DAAAM Symposium in Vienna, Austria, 2018, pp. 1092–1101.

Caliskan, A., Özkan Özen, Y. D. and Ozturkoglu, Y. (2020), "Digital transformation of traditional marketing business model in New Industry Era", Journal of Enterprise Information Management, Vol. 34 No. 4, pp. 1252–1273.

Camilleri, M. A. (2018), "The SMEs' technology acceptance of digital media for stakeholder engagement", Journal of Small Business and Enterprise Development, Vol. 26 No. 4, pp. 504–521.

Ćoćkalo, D., Đorđević, D., Bogetić, S., Bakator, M. and Bešić, C. (2019), "Competitiveness of domestic enterprises in changing markets and industry 4.0", in the 4th International Conference on the Industry 4.0 Model for Advanced Manufacturing proceedings in Belgrade, Serbia, 2019, pp. 113–127.

European Commission. (2018), "Annual report on European SMEs 2017/2018: SMEs growing beyond borders", available at: https://data.europa.eu/doi/10.2873/248745 (accessed 12 February 2023).

Kumar, D., Samalia, H. V. and Verma, P. (2017), "Exploring suitability of cloud computing for small and medium-sized enterprises in India", Journal of Small Business and Enterprise Development, Vol. 24, No. 4, pp. 814–832.

Maroufkhani, P., Wan Ismail, W. K. and Ghobakhloo, M. (2020), "Big Data Analytics adoption model for small and Medium Enterprises", Journal of Science and Technology Policy Management, Vol. 11, No. 4, pp. 483–513.

Nair, J., Chellasamy, A. and Singh, B. N. B. (2019), "Readiness factors for information technology adoption in SMEs: Testing an exploratory model in an Indian context", Journal of Asia Business Studies, Vol. 13 No. 4, pp. 694–718.

Rahman, M., Ming, T. H., Baigh, T. A. and Sarker, M. (2021), "Adoption of artificial intelligence in banking services: An empirical analysis", International Journal of Emerging Markets.

Schmidt, M.-C., Veile, J. W., Müller, J. M. and Voigt, K.-I. (2020), "Ecosystems 4.0: Redesigning global value chains", The International Journal of Logistics Management, Vol. 32 No. 4, pp. 1124–1149.

Skafi, M., Yunis, M. M. and Zekri, A. (2020), "Factors influencing SMEs' adoption of cloud computing services in Lebanon: An empirical analysis using toe and contextual theory", IEEE Access, Vol. 8, pp. 79169–79181.

Ulas, D. (2019), "Digital Transformation Process and SMEs", Procedia Computer Science, Vol. 158, pp. 662–671.

Ungerman, O. and Dědková, J. (2019), "Marketing innovations in industry 4.0 and their impacts on current enterprises", Applied Sciences, Vol. 9 No. 18.

# DISCIPLINARY EFFECT AND GREENWASHING: EVIDENCES FROM EMERGING MARKETS

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## ABSTRACT

The COVID-19 outbreak has brought back the topic of Corporate Social Responsibility (CSR) to the forefront. For instance, He and Harris (2020) point out that while COVID has driven companies to invest more in digital transformation, environmental protection, and social welfare, it has also revealed shortcomings such as the lack of standardization and monitoring mechanisms for CSR. CSR should be in the middle ground (McWilliams et al., 2001), but in reality, it is controversial because companies often use it wrongly for improper benefits. Therefore, the phenomenon of greenwashing emerged, which initially refers to green public relations and false propaganda. For CSR greenwashing, this paper cites the definition of Pope and Wæraas (2016): 'the successful use of false CSR claims to improve a company's competitive standing'. Wu et al. (2020) believe that although greenwashing will increase overall CSR costs, it will still make consumers make unwise purchase decisions.

Battisti et al. (2022) consider CSR as a resource based on an extension of the resource-based view perspective and CSR is also an important component of driving social inclusion and well-being (Cezarino et al., 2022). Before the greenwashing behavior exposes, the benefits of the firm gained from low-cost greenwashing behavior are exempt from punishment, but the stakeholders' interests are harmed, therefore, the concept of disciplinary effect appeared. Specifically, after exposure to CSR greenwashing behavior, the market where stakeholders are located will spontaneously form a punishment mechanism for CSR greenwashing behavior, and stakeholders will punish the firm (Wang et al., 2015). In this case, this paper hopes to have new methodological tools that can help stakeholders reduce their losses and also enable them to maintain their trust in the company and safeguard the interests of the company. In fact, Nirino et al. (2022) and Nirino et al. (2021) argue that sustainable practices can reduce the environmental and social risks of companies, thus increasing investor trust and support for the company and reducing investor anxiety and panic in times of market instability. Therefore, this paper chose to adopt Sustainable Development Goals (SDGs) related to sustainable development as the methodological tool we want to adopt to investigate whether they can mitigate the greenwashing phenomenon. The United Nations' SDGs encourage sustainability reporting and have developed social and human capital protocols as reporting tools to help measure or provide information to achieve sustainable development (Wilson, 2021).

Therefore, this paper introduces the disciplinary effect to quantify and analyze the extent of CSR greenwashing and its related influences in emerging markets. The paper hopes to use SDGs as a tool to try to mitigate or reduce CSR greenwashing and gain insight into CSR and corporate pseudo-social responsibility. According to the research context, this paper has the following two research questions: (i) *What factors can link the disciplinary effect and CSR Greenwashing in emerging markets? (ii) How can SDGs help mitigate the phenomenon of CSR greenwashing instead of becoming SDGs washing?*

This paper aims to use CSR report data from the Next 11 countries over the past five years to determine whether there is a significant tendency of greenwashing based on the passage of time. In order to collect data with higher accuracy, this article plans to use the Thomson Reuters EIKON database used in the empirical research of Uyar et al. (2020). In particular, to better investigate whether SDGs can work, this paper selects the renewable energy sector (e.g., wind and solar) for in-depth study.

This paper adopts the event study method as a research methodology for two reasons. Firstly, this method uses special events as research objects to determine the impact of events on the current market. Secondly, CAPM models, market models, etc. can be used to predict normal and abnormal returns and other indicators and can visualize them for intuitive judgment and analysis. Then, the release date of their national CSR reports is taken as the event date, and the estimation window is selected from 20 days before to 49 days before the release, a total of thirty days. The event window is selected from the release date and ten days after, a total of eleven days. These two windows are combined using Python to calculate their abnormal return and significance test.

The expected results of this paper are, first, to have factors like media exposure as mediating variables making CSR greenwashing positively related to disciplinary effects, and to use these factors to effectively control corporate pseudo-social responsibility in the market. Second, according to Biermann et al. (2022), the transformative political impact of SDGs has been limited so far, so this paper hopes to find some goals of SDGs that can help us reduce this greenwashing phenomenon.

From a theoretical perspective, this paper will contribute to the literature on emerging markets by providing evidence of and identifying factors for greenwashing behavior in the market, then creating a new theoretical framework using agency theory to link the disciplinary role of institutional investors to CSR greenwashing behavior. On the practical side, this paper hopes to promote sustainable development in emerging markets driven by stakeholders. Guided by the SDGs, institutional investors can use their influence to constrain companies engaged in greenwashing practices, with a view to promoting transparency in CSR reports and establishing an effective regulatory framework for relevant regulators

*Keywords: Corporate Social Responsibility; Disciplinary effect; CSR Greenwashing; SDGs*

# REFERENCES

Battisti E, Nirino N, Leonidou E, et al. Corporate venture capital and CSR performance: An extended resource based view's perspective[J]. Journal of Business Research, 2022, 139: 1058-1066.

Biermann, Frank & Hickmann, Thomas & Sénit, Carole-Anne & Beisheim, Marianne & Bernstein, Steven & Chasek, Pamela & Grob, Leonie & Kim, Rakhyun & Kotzé, Louis & Nilsson, Måns & Llanos, Andrea & Okereke, Chukwumerije & Pradhan, Prajal & Raven, Rob & Sun, Yixian & Vijge, Marjanneke & Vuuren, Detlef & Wicke, Birka. (2022). Scientific evidence on the political impact of the Sustainable Development Goals. Nature Sustainability. 5. 1-6. 10.1038/s41893-022-00909-5.

Cezarino, Luciana & Liboni, Lara & Hunter, Trevor & Marchiori Pacheco, Larissa & Martins, Flávio. (2022). Corporate social responsibility in emerging markets: Opportunities and challenges for sustainability integration. Journal of Cleaner Production. 362. 132224. 10.1016/j.jclepro.2022.132224.

He, Hongwei & Harris, Lloyd. (2020). The Impact of Covid-19 Pandemic on Corporate Social Responsibility and Marketing Philosophy. Journal of Business Research. 116. 10.1016/j.jbusres.2020.05.030.

McWilliams, Abagail, and Donald Siegel. "Corporate Social Responsibility: A Theory of the Firm Perspective." The Academy of Management Review, vol. 26, no. 1, 2001, pp. 117–27. JSTOR, https://doi.org/10.2307/259398. Accessed 13 Apr. 2023.

Nirino, N., Petruzzella, F., Alam, G.M. and Campobasso, F. (2022), "Can sustainable practices protect investors during financial market instability? A multi-sector analysis during the COVID-19 pandemic", Management Decision, Vol. 60 No. 10, pp. 2875-2894. https://doi.org/10.1108/MD-12-2021-1654

Nirino, N., Santoro, G., Miglietta, N. and Quaglia, R. (2021), "Corporate controversies and company's financial performance: Exploring the moderating role of ESG practices", Technological Forecasting and Social Change, Vol. 162, p. 120341, doi: 10.1016/j.techfore.2020.120341.

Pope, Shawn & Wæraas, Arild. (2016). CSR-Washing is Rare: A Conceptual Framework, Literature Review, and Critique. Journal of Business Ethics. 137. 173-193. 10.1007/s10551-015-2546-z.

Uyar, Ali & Karaman, Abdullah & Kılıç Karamahmutoğlu, Merve. (2020). Is corporate social responsibility reporting a tool of signaling or greenwashing? Evidence from the worldwide logistics sector. Journal of Cleaner Production. 253. 119997. 10.1016/j.jclepro.2020.119997.

Wang, Zheng, Ruojuan, Ma, Dandan. Research on capital market disciplinary effects of corporate greenwash exposure[J]. Economic Management, 2015(11):12.

Wilson, J.P. Making Information Measurement Meaningful: The United Nations' Sustainable Development Goals and the Social and Human Capital Protocol. Information 2021, 12, 338. https://doi.org/10.3390/info12080338

Yue Wu, Kaifu Zhang, Jinhong Xie (2020) Bad Greenwashing, Good Greenwashing: Corporate Social Responsibility and Information Transparency. Management Science 66(7):3095-3112.

# ACTIVE AND PASSIVE BRAND HATE: DIFFERENT IMPACT ON CONSUMER-BASED BRAND EQUITY

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## ABSTRACT

Brand hate is the stronger and consequential negative emotion that consumers can feel to brands (Zarantonello *et al.*, 2016; Fetscherin, 2019; Kucuk, 2019). Although some recent studies highlight the relevance of understanding negative emotions, the literature appears to be segmented and asks for more comprehensive studies to conceptualise brand hate and its conceptual and practical consequences (Dessart and Cova, 2021; Brandão and Popoli, 2022).

This study aims to provide advanced insights on the relationship between brand hate and consumer-based brand equity (CBBE). Specifically, this study investigates the impact of different types of brand hate on different dimensions of CBBE, with specific reference to the Millennials.

Regarding the different types of brand hate, it should be considered that consumers may have different negative feelings (Hegner *et al.*, 2017; Zhang and Laroche, 2020; Zarantonello *et al.*, 2016; Rodrigues and Pinto Borges, 2021) and, consequently, different consumer-brand relationships (Banerjee and Goel, 2020; Pinto and Brandão, 2020) and different behaviors towards the hated brand (Kucuk, 2018: Brandão and Popoli, 2022). Specifically, there are two types of hate, leading to different actions (Hegner *et al.*, 2017). The passive one, which is "light", and the other active one, which is "strong" and leads to aggressive behavior (Zhang and Laroche, 2020). Active brand hate includes anger, contempt, and disgust emotions; however passive brand hate consists of fear, disappointment, shame, and dehumanization emotions (Zarantonello *et al.*, 2016). When consumers feel brand hate, they can cut the relationship with the brand by quietly distancing themselves from it or attacking the brand more actively (Kucuk, 2018). Passive brand hate is known as "attitudinal brand hate" and active brand hate is a "behavioral brand hate" (Kucuk, 2018; Zarantonello *et al.*, 2016).

As for the brand equity, it has been measured based on three perceptions: customer level, company or firm-level and financial market level (Baalbaki *et al.*, 2019). Researchers use distinctive terms for brand equity to address the variety of conceptualizations, such as consumer-based, sales-based, financial-based and employee-based brand equity (Veloutsou *et al.*, 2020).

The most used indicator in the literature is consumer-based brand equity (CBBE) (Veloutsou *et al.*, 2020). The most recent literature claims that CBBE should be theorized as a process rather than a

construct (Chatzipanagiotou *et al.*, 2019). In their work Chatzipanagiotou *et al.* (2016) consider CBBE as a complex overall process that "includes separate development stages under which a sub-system of closely interrelated concepts lies, and empirically demonstrates the building blocks and various combinations that result in high CBBE" (p. 5479). The authors identified three sub-systems: the brand building block (BBB), the brand understanding block (BUB), and the brand relationship block (BRB). Clarifying the relationships between these blocks is helpful to the understanding of the CBBE creation process (Chatzipanagiotou *et al.*, 2016).

On the basis of these premises, this study aims to investigate the impact of active and passive hate on the three identified dimensions of CBBE in order to advance the understanding of the relationship between brand hate and brand equity. Therefore, the research question to be answered is: among the millennial generation, is the CBBE more affected by active brand hate or passive brand hate, and is this impact more negative or is it rather positive?

Methodologically, an online survey was conducted to gather data among 821 respondents who are Millennials and, consequently, six research hypotheses on the relation between brand hate (active and passive) and the three blocks of CBBE have been tested through a structural equation model using SMART-PLS 3.0.

Findings show that the active brand hate has a negative impact on consumer-based brand equity, whereas passive brand hate does have a positive impact. Specifically, active brand hate shows a higher impact on BRB and a lower impact on BBB, whereas the passive brand hate, in contrast to active brand hate, has a higher (positive) impact on BRB. Therefore, the positive impact of passive brand hate on CBBE does not agree with previous studies that reveal that brand hate has a significant negative relationship with brand equity (Husnain *et al.*, 2020, 2021). However, it is important to emphasize that previous studies measured total brand hate and did not divide between active and passive brand hate.

The potential contribution of this study to the understanding of brand hate stems from the fact that it is the first investigation of the impact of active and passive brand hate on different dimensions of CBBE.

*Keywords: negative feelings; negative consumer-brand relationships; brand hate; brand equity; consumer-based brand equity.*

# REFERENCES

Baalbaki, S., Guzmán, F., Yang, D., Sonmez, M., Gonzalez, M., Liu, Y., & Yoder, C.Y. (2019), "A consumer-perceived consumer-based brand equity scale", Journal of Brand Management, Vol. 22 No 3, pp. 717–732.

Banerjee, S. and Goel, P. (2020), "Party brand hate in political market: antecedents and consequences", Asian Journal of Political Science, Vol. 28 No 2, pp. 97–121.

Brandão, A. and Popoli, P. (2022), "I'm hatin' it! Negative consumer–brand relationships in online anti-brand communities", European Journal of Marketing, Vol. 56 No. 2, pp. 622-650.

Brandão, A., Popoli, P. and Tomas, I.P. (2022), "Joining the anti-brand communities on the internet: who and why", Scientific Annals of Economics and Business, Vol. 69 No. 1, pp. 1-27.

Chatzipanagiotou, K., Veloutsou, C. and Christodoulides, G. (2016), "Decoding the complexity of the consumer-based brand equity process", Journal of Business Research, Vol. 69 No. 11, pp. 5479–5486.

Chatzipanagiotou, K., Veloutsou, C., Christodoulides, G. and Veloutsou, C. (2019), "Managing the consumer-based brand equity process: A cross-cultural perspective", Journal of Business Research, Vol. 28 No. 2, pp. 328–343.

Dessart, L. and Cova, B. (2021), "Brand repulsion: consumers' boundary work with rejected brands", European Journal of Marketing, Vol. 55 No. 4, pp. 1285-1311.

Fetscherin, M. (2019), "The five types of brand hate: how they affect consumer behavior", Journal of Business Research, Vol. 101, pp. 116-127.

Hegner, S.M., Fetscherin, M. and van Delzen, M. (2017), "Determinants and outcomes of brand hate", Journal of Product and Brand Management, Vol. 26 No. 1, pp. 13-25.

Husnain, M., Syed, F., Akhtar, W. and Usman, M. (2020), "Effects of brand hate on brand equity: The role of corporate social irresponsibility and similar competitor offer", Marketing and Management of Innovations, Vol. 6718 No. 3, pp. 75–86.

Husnain, M., Wang, Z., Poulova, P., Syed, F., Akbar, A., Akhtar, M.W., Akbar, M. and Usman, M. (2021), "Exploring brand hate and the association between similar competitor offer and brand equity: A moderated-mediation model", Frontiers in Psychology, Vol. 11, pp. 1-14.

Kucuk, S.U. (2018), "Macro-level antecedents of consumer brand hate", Journal of Consumer Marketing, Vol. 35 No. 5, pp. 555–564.

Kucuk, S.U. (2019), "Consumer brand hate: steam rolling whatever I see", Psychology and Marketing, Vol. 36 No. 5, pp. 431-443.

Pinto, O. and Brandão, A. (2020), "Antecedents and consequences of brand hate: empirical evidence from the telecommunication industry", European Journal of Management and Business Economics, Vol. 30 No. 1, pp. 18-35.

Rodrigues, C. and Pinto Borges, A. (2021), "Negative emotions toward a financial brand: the opposite impact on brand love", European Business Review, Vol. 33 No. 2, pp. 272-294.

Veloutsou, C., Chatzipanagiotou, K. and Christodoulides, G. (2020), "The consumer-based brand equity deconstruction and restoration process: Lessons from unliked brands", Journal of Business Research, Vol. 111, pp. 41–51.

Zarantonello, L., Romani, S., Grappi, S. and Bagozzi, R. P. (2016), "Brand hate", Journal of Product and Brand Management, Vol. 25 No. 1, pp. 11–25.

Zhang, C., & Laroche, M. (2020), "Brand hate: a multidimensional construct", Journal of Product and Brand Management, Vol. 30 No. 3, pp. 392-414.

# THE IMPACT OF BRAND EXTENSION TO GENERATION X OR GENERATION Z ON THE INTENTION TO REPURCHASE THE PARENT BRAND

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## ABSTRACT

Brand extension is an important decision for achieving business growth objectives, which is about maximising the brand equity. The phenomenon of brand extension has received a lot of attention from the research community: there is a large body of researches of the success factors of brand extension, the possible implications of this for the equity of the brand being extended, the relationship between the parent brand and its extension, etc. (Vukasovic *et al*., 2018; Ramanathan, J. and Purani, K., 2014; Swaminathan, V. *et.al*, 2001; Völckner, F., and Sattler, H., 2006; Kapoor, H., and Heslop, L. A., 2009; Echambadi, R. *et.al*., 2006; Milberg, S. J. *et.al*. 2010) There are a numerous of studies that have researched the effects of various extension outcomes on the parent brand (Chen, K. J., and Liu, C. M., 2004; Martinez, E., and Pina, J. M., 2003; Arslan, F. M., and Altuna, O. K., 2010; Salinas, E.M. and Pérez, J.M.P., 2009). However, the focus of this study covers different aspects of brand extension. It aimed to investigate how brand extension into cross-generational markets would affect the repurchase intention of the extended brand. That is, it sought to find out whether existing consumers would be negatively affected by the extension of their brand to older (Generation X) and younger (Generation Z) markets. The researchers pointed out that it is not only the behaviour of the generations that differs but also their own attitudes towards the other generations (Gurau, 2012; Lambert-Pandraud and Laurent, 2010; Parment, 2013; Sharma, 2015), which could affect their behaviour when they find out that the market for the brand they are buying has been extended in the above-mentioned aspects.

The literature review of the theoretical foundations of repurchase intention and the concept of brand extension were analysed. Additionally, the analysis has covered the impact of brand satisfaction on repurchase intention, the impact of attitudes towards the parent brand as well as brand extension impact on repurchase intention. Considerable attention has also been paid to intergenerational markets, their differences and interrelationships, and the key factors influencing generational differences in repurchase behaviour. The analysis was summarised in a model based on the theory of planned behaviour. It reflects the fact that the intention to repurchase a brand that was extended to X or Z Generations depends on attitudes towards the parent brand and its extension, attitudes towards the parent brand, satisfaction with the parent brand and subjective norms: the perceived expectations of others and their approval or disapproval of the behaviour.

The research was carried out using a survey method. The local brand of body care products Margarita was chosen for the survey. The survey involved 311 respondents from Lithuania, aged 18-69 years, who use Margarita brand products.

The data analysis revealed that brand extension is better appreciated among Generation X customers. The intention to repurchase a parent brand is mostly influenced by attitude towards the parent brand, which is influenced by satisfaction with the parent brand. After comparing the determinants of repurchase intentions across generations, it was found that in Generation Z satisfaction with the parent brand has the greatest influence on repurchase intentions for the parent brand. For Generation X, attitudes towards the parent brand have the greatest influence on the intention to repurchase the parent brand. In both of these generations, subjective norms, in the form of others' approval of the behaviour or expectations of the behaviour, play an important role in the repurchase intention process. A comparison of re-purchase intentions for a parent brand between Generation X and Generation Z found that Generation X is more likely to plan to repurchase a parent brand than Generation Z. The study also has found that after brand extension, a better attitude towards the brand is observed in Generation X. Thus, after brand extension to Generation X or Generation Z, the greatest impact on repurchase intentions is observed in the Generation X market, where extension is more valued and influenced by attitudes towards the parent brand. For practitioners these results suggest that when extending a brand to intergenerational markets, the safer option for the parent brand would be to extend to the older generational segment and, as was researched in this survey, to Generation X.

*Keywords: Parent brand, Brand extension, Generation X, Generation Z, Intention to repurchase parent brand*

## REFERENCES

Arslan, F.M. and Altuna, O.K., (2010), "The effect of brand extensions on product brand image", Journal of Product & Brand Management, 19(3), pp.170-180.
Chen, K.J. and Liu, C.M., (2004), "Positive brand extension trial and choice of parent brand", Journal of Product & Brand Management, 13(1), pp.25-36.
Dwivedi, A. and Merrilees, B., (2013), "Brand extension feedback effects: towards a mediated framework", Journal of Consumer Marketing, 30(5), pp.450-461.
Echambadi, R., Arroniz, I., Reinartz, W. and Lee, J., (2006), "Empirical generalizations from brand extension research: How sure are we?", International Journal of Research in Marketing, 23(3), pp.253-261.
Gurău, C., (2012), "A life-stage analysis of consumer loyalty profile: comparing Generation X and Millennial consumers", Journal of Consumer Marketing, 29(2), pp.103-113.
Kapoor, H. and Heslop, L.A., (2009), "Brand positivity and competitive effects on the evaluation of brand extensions", International Journal of Research in Marketing, 26(3), pp.228-237.
Lambert-Pandraud, R. and Laurent, G., (2010), "Why do older consumers buy older brands? The role of attachment and declining innovativeness", Journal of Marketing, 74(5), pp.104-121.
Martinez, E. and Pina, J.M., (2003), "The negative impact of brand extensions on parent brand image", Journal of Product & Brand Management, 12(7), pp.432-448.
Martinez, E., Polo, Y. and De Chernatony, L., (2008), "Effect of brand extension strategies on brand image: A comparative study of the UK and Spanish markets", International Marketing Review, 25(1), pp.107-137.

Milberg, S.J., Sinn, F. and Goodstein, R.C., (2010), "Consumer reactions to brand extensions in a competitive context: does fit still matter?", Journal of Consumer Research, 37(3), pp.543-553.

Morrin, M., (1999), "The impact of brand extensions on parent brand memory structures and retrieval processes", Journal of Marketing Research, 36(4), pp.517-525.

Parment, A., (2013), "Generation Y vs. Baby Boomers: Shopping behavior, buyer involvement and implications for retailing", Journal of Retailing and Consumer Services, 20(2), pp.189-199.

Ramanathan, J. and Purani, K., (2014), "Brand extension evaluation: real world and virtual world", Journal of Product & Brand Management, 23(7), pp.504-515.

Salinas, E.M. and Pérez, J.M.P., (2009), "Modeling the brand extensions' influence on brand image", Journal of Business Research, 62(1), pp.50-60.

Sharma, R.W., (2015), "Communicating across age-groups: variance in consumer attitudes from tweenagers to adults", Young Consumers, 16(3), pp.348-362.

Sheinin, D.A., (2000), "The effects of experience with brand extensions on parent brand knowledge", Journal of Business Research, 49(1), pp.47-55.

Swaminathan, V., Fox, R.J. and Reddy, S.K., (2001), "The impact of brand extension introduction on choice", Journal of Marketing, 65(4), pp.1-15.

Völckner, F. and Sattler, H., (2006), "Drivers of brand extension success", Journal of Marketing, 70(2), pp.18-34.

Vukasovic, T., Korez, B. and Petelin, S.P., (2018), "The Expansion of the Brand through the Establishment of the Mobile Kitchen System", Management, Spring 2018, Vol. 13 Issue 1, p19-31

# REPUTATIONAL RISK: A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA

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## ABSTRACT

Reputation is a company's most crucial asset, as it is vital for its survival within the market, and, therefore, it is the most challenging resource to gain back once it has been lost (Zhu et al., 2022). Reputational risk represents the potential damage or loss which can occur to an organisation's reputation due to the actions or decisions implemented by its managers. It is a kind of risk that can have a relevant impact on a company's success, as there is a positive correlation between reputation and financial (Zhu et al., 2022; Tăchiciu et al., 2020; Kunitsyna et al., 2018) and non-financial performance and market value (Szwajca, 2018). Reputational risk can arise from numerous factors, for instance, those linked to illegal behaviours (Tica et al., 2022), namely fraud and corruption (Hirsch, 2018), cyber and physical security (Ruffini, 2019), media coverage (Rivera-Arrubla et al., 2016) and ability to meet customers and investors' expectations (Saeudy et al., 2022; Azrak et al., 2016).

Given the growing relevance of this topic from both the market sides, the organisations, and the stakeholders, this study aims to thoroughly analyse and examine reputational risk from multiple perspectives to provide a comprehensive overview. The purpose of this study is to review the literature to summarise the state of knowledge on reputational risk, provide some managerial implications and suggest multiple directions for future research based on existing knowledge gaps.

This SLR research was carried out in three main phases. In the first stage, keywords were chosen, and inclusion and exclusion criteria were established. We decided to select articles containing, in their title or abstract, or as keywords, the following terms: "*reputation\* risk\**". Truncation allowed us not to exclude articles featuring variations of the keywords we established. Then, in order to identify a broad range of articles on reputational risk, database searches (Scopus) were conducted. Scopus was searched as it is broadly used in SLR studies because it provides scholars with a great deal of peer-reviewed papers. The original literature search was conducted in December 2022. After that, we applied the following inclusion and exclusion criteria: first, we removed duplicates, and then, we decided to exclude conference proceedings and book chapters in order to analyse only articles published in peer-reviewed journals. Then, we identified 64 articles whose findings were discussed in the third step of the process.

We used a sample of 64 articles to conduct a content analysis with the aim of identifying thematic foci and research gaps. We were able to group our sample of articles under five broad themes, namely

"*reputational risk in banks*", "*reputational risk and sustainability and/or corporate social responsibility (CSR)*", "*reputational risk in the supply chain*", "*reputational risk and digitalisation (in terms of social media and artificial intelligence)*" and "*reputational risk linked to crisis and/or scandals*".

Reputation is the most crucial asset of financial institutions, as their business is based on trust, which is based on reputation. Indeed, Saeudy et al. (2022) account reputational risk, along with operational and credit risk, among the top three risks that banks face. Sustainability and CSR can profoundly influence reputational risk, lowering or increasing it. Indeed, if a company is considered "sustainable" from the environmental, social, and economic points of view, stakeholders will trust it and so, reputational risk will be low. In the supply chain context, Blom et al. (2019) demonstrated that reputational risk guarantees that the Supply Chain Disruption Recovery (SCDR) process is executed more efficiently and effectively, and it also acts as an incentive for companies to achieve higher levels of service, leading to more favourable outcomes. Reputation threats have been amplified in the digital age due to the proliferation of the internet, social media (Szwajca, 2018; Aula, 2010), and advanced data technologies, such as those utilising artificial intelligence and machine learning (Stitzlein et al., 2021). Concerning the last theme we identified, Tica et al. (2020) highlight a direct correlation between corporate scandals and loss of reputation and, so, an increase in reputational risk.

This study builds upon important existing conceptual and empirical work and provides some implications: from a theoretical point of view, we mapped knowledge on reputational risk by reviewing the literature from multiple perspectives to deliver a comprehensive overview, and we suggested multiple directions for future research that will help scholars in the advancement of investigation on the topic of reputational risk; from a practical point of view, we believe that our study will aid in increasing awareness about reputational risk and will help managers by identifying risk drivers that can be useful in preventing crises and scandals in advance and maintaining the organisation's reputation and trust among its stakeholders.

*Keywords: Reputational risk, reputational risk management, systematic literature review, digitalisation, sustainability, financial institutions, stakeholder engagement, corporate reputation, corporate reputation management*

## REFERENCES

Aula, P. (2010) "Social media, reputation risk and ambient publicity management," Strategy & Leadership, 38(6), pp. 43–49. Available at: https://doi.org/10.1108/10878571011088069.
Azrak, T., Saiti, B. and Ali, E.R.A.E. (no date) An analysis of reputational risks in Islamic banks in Malaysia with a proposed conceptual framework, Al. Available at: https://journals.iium.edu.my/shajarah/index.php/shaj/article/view/424.

Blom, T. and Niemann, W. (2022) "Managing reputational risk during supply chain disruption recovery: A Triadic Logistics Outsourcing Perspective," Journal of Transport and Supply Chain Management, 16. Available at: https://doi.org/10.4102/jtscm.v16i0.623.

Hirsch, P.B. (2018) "Tie me to the MAST: Artificial intelligence & reputation risk management," Journal of Business Strategy, 39(1), pp. 61–64. Available at: https://doi.org/10.1108/jbs-11-2017-0160.

Kunitsyna, N., Britchenko, I. and Kunitsyn, I. (2018) "Reputational risks, value of losses and financial sustainability of commercial banks," Entrepreneurship and Sustainability Issues, 5(4), pp. 943–955. Available at: https://doi.org/10.9770/jesi.2018.5.4(17).

Rivera-Arrubla, Y.A. and Zorio-Grima, A. (2016) "Integrated reporting, connectivity, and Social Media," Psychology & Marketing, 33(12), pp. 1159–1165. Available at: https://doi.org/10.1002/mar.20953.

Saeudy, M., Atkins, J. and Barone, E.A.V. (2021) "Interpreting banks' sustainability initiatives as reputational risk management and mechanisms for coping, re-embedding and rebuilding Societal Trust," Qualitative Research in Financial Markets, 14(1), pp. 169–188. Available at: https://doi.org/10.1108/qrfm-02-2021-0024.

Szwajca, D. (2018) "Dilemmas of reputation risk management: Theoretical study," Corporate Reputation Review, 21(4), pp. 165–178. Available at: https://doi.org/10.1057/s41299-018-0052-9.

Tăchiciu, L. et al. (2020) "Non-financial reporting and reputational risk in the Romanian Financial Sector," www.amfiteatrueconomic.ro, 22(55). Available at: https://doi.org/10.24818/ea/2020/55/668.

Tica, A. and Weißenberger, B.E. (2021) "How regulatory changes are driven by a need for control in reputational scandals: A case study in the German insurance industry," Journal of Accounting & Organizational Change, 18(1), pp. 57–76. Available at: https://doi.org/10.1108/jaoc-11-2020-0196.

Zhu, X., Wang, Y. and Li, J. (2022) "What drives reputational risk? evidence from textual risk disclosures in financial statements," Humanities and Social Sciences Communications, 9(1). Available at: https://doi.org/10.1057/s41599-022-01341-y.

# THE IMPACTS OF HIGHER EDUCATION INSTITUTIONS ON SUSTAINABLE SOFTWARE DEVELOPMENT

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## ABSTRACT

The world is constantly becoming more aware of the importance of sustainability in every aspect of our activity, and due to the omnipresence of ICT in a digitalized society software development is no exception. (Leong *et al.*, 2023). The International Maritime Organization (IMO) has set strategic goals to reduce total annual greenhouse gas emissions by 50% by 2050 compared to 2008 levels (Gucma *et al.*, 2023). And the ICT sector is potentially responsible for 14% of the global carbon footprint by 2040, reviling that sustainability in tech is a pressing issue that needs to be addressed (Raisian *et al.*, 2022). Shipping Software Development (SSD) is at the juncture of these two realities, continually challenged by rapidly evolving concepts, technologies, and demands. Since the UN Conference in 1972, Higher Education Institutions (HEIs) have increasingly undertaken active measures to contribute to sustainable development (Findler *et al.*, 2019). Driven by a mission to create sustainable social, economic, and environmental impact at scale HEIs have to actively support SSD (Reyes Nieto *et al.*, 2018). ESG (Environmental, social, and governance) became a key factor in the Poseidon Principles and a framework for measuring how well a company is doing in terms of sustainability, and its introduction significantly affected the shipping industry. On the other hand, OntoSuSD facilitates knowledge, awareness, implementation and proposes a description of relationships generated around lean, agile, and green approaches in sustainable software development (Zada *et al.*, 2023). This paper provides a systematic literature review of peer-reviewed journal articles published between 2018 and 2023. Inductive content analysis was applied to identify major themes addressed in the literature to develop a conceptual framework detailing the relationship between HEIs' activities and their direct and indirect impacts on SSD by using the eShip case study. An overview of the ESG aspects and how they are relevant to the shipping industry includes the impacts of HEIs on sustainable SSD, complementing previous literature reviews by broadening the perspective from what HEIs do in pursuit of sustainability to how these activities impact environment, society, and economy. Holistic perspective on sustainable SSD design includes an environmentally conscious approach and tangible benefits to the user (Fiore *et al.,* 2020). For example, optimizing code to reduce energy consumption, using more efficient hardware, opting for energy-efficient data centers, providing fast access to data and easy search, intelligent cargo, and vessel matching, forecasting vessel route and decreasing port

congestion, predicting an estimated time of arrival and Increasing fuel efficiency, improving overall performance, lower application ownership costs, increasing cargo owner and shipowners agility and competitive edge, etc. (Cacho *et al.*, 2021; Kyas *et al.*, 2021; Gonçalves and Chkoniya, 2022). The need for a more sustainable world is gaining momentum and involves every industry, including software development. The paper identifies seven principles of sustainable SSD with indirect impacts of HEIs and how they can be applied to build next-generation digital products with a positive impact on the shipping industry.

## ACKNOWLEDGEMENTS

*Keywords: Education 4.0, EEA Grants, Maritime Education, Learning Process, Higher education institutions, Sustainability, Sustainable development, Shipping*

## REFERENCES

Cacho, J. L. et al. (2021) 'Port Dada Integration: Opportunities for Optimization and Value Creation', in Chkoniya, V. (ed.) Handbook of Research on Applied Data Science and Artificial Intelligence in Business and Industry. Hershey, PA, USA: IGI Global, pp. 1–22. doi: 10.4018/978-1-7998-6985-6.ch001.

Findler, F. et al. (2019) 'The impacts of higher education institutions on sustainable development', International Journal of Sustainability in Higher Education. Emerald Publishing Limited, 20(1), pp. 23–38. doi: 10.1108/IJSHE-07-2017-0114.

Fiore, M. et al. (2020) 'Stakeholders' involvement in establishing sustainable business models: The case of Polish dairy cooperatives.', British Food Journal, 122(5), pp. 1671–1691. doi: 10.1108/BFJ-04-2019-0263.

Gonçalves, F. and Chkoniya, V. (2022) 'Container Ships and Sustainable Supply Chain Management. Is Shipping Industry Ready to Celebrate the Release of "Ever Ace"?' 15th Annual Conference of the EuroMed Academy of Business.

Gucma, M. et al. (2023) 'Environmental solutions for maritime ships: challenges and needs.', Production Engineering Archives, 29(2), pp. 216–224. doi: 10.30657/pea.2023.29.25.

Kyas, M. et al. (2021) 'Data Analysis in the Shipping Industry: eShip Case Study – Problem Statement', in Chkoniya, V. (ed.) Handbook of Research on Applied Data Science and Artificial Intelligence in Business and Industry. Hershey, PA, USA: IGI Global, pp. 381–400. doi: 10.4018/978-1-7998-6985-6.ch018.

Leong, J. et al. (2023) 'Hybrid Project Management between Traditional Software Development Lifecycle and Agile Based Product Development for Future Sustainability', Sustainability, 15(1121), p. 1121. doi: 10.3390/su15021121.

Raisian, K. et al. (2022) 'Green Measurements for Software Product Based on Sustainability Dimensions.', Computer Systems Science & Engineering, 41(1), pp. 271–288. doi: 10.32604/csse.2022.020496.

Reyes Nieto, J. E. et al. (2018) 'Urban Integrated Sustainable Assessment Methodology for Existing Neighborhoods (UISA fEN), a New Approach for Promoting Sustainable Development.', Sustainable Development, 26(6), pp. 564–587. doi: 10.1002/sd.1720.

Zada, I. et al. (2023) 'OntoSuSD: Software engineering approaches integration ontology for sustainable software development.', Software: Practice & Experience, 53(2), pp. 283–317. doi: 10.1002/spe.3149.

# BREAKING THE GENDER IMBALANCE IN CORPORATE EXPATRIATION: ENHANCING EXPATRIATE WILLINGNESS AMONG FEMALE EMPLOYEES THROUGH THE ROLE OF SUPERVISORS

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## ABSTRACT

Academics and practitioners have frequently found that female employees are willing to expatriate but many factors hinder them from actual participation. This paper develops a conceptual model detailing the critical role of supervisors in enhancing female employees' willingness to accept expatriate assignments and has two important objectives. First, I argue that female employees represent a promising talent source that has been mostly overlooked when it comes to corporate expatriation. Furthermore, a low female representation in corporate expatriation can cause female employees to be at a disadvantage relative to their male counterparts when it comes to leadership development and career success. Second, I use social cognitive theory (Bandura, 1989) and conservation of resources theory (Hobfoll, 1989) to examine two antecedents of expatriate willingness: cultural self-efficacy from the career domain and family role overload from the family domain. More specifically, I seek to take a closer look at the role of supervisors, examining the moderating role of supervisory mentoring behaviors (Viator and Scandura, 1991) on the effect of cultural self-efficacy on female employees' expatriate willingness and the moderating role of family supportive supervisory behaviors (Hammer *et al.*, 2009) on the effect of family role overload on female employees' expatriate willingness. Furthermore, this paper explores whether there are three-way interactions among the two antecedents (cultural self-efficacy and family role overload), two specific supervisor behaviors (supervisory mentoring behaviors and family supportive supervisory behaviors), and same-gender supervisor-subordinate dyad (i.e., the supervisor is also female) on expatriate willingness. The conceptual model of this paper highlights the critical importance of career, family, and supervisory factors that enhance female employee expatriate willingness. In addition to the theoretical implications, each of the antecedents and moderators may provide useful guidelines for practitioners wishing to increase their female employee representation in expatriation.

If supported empirically, each of the antecedents and moderators may provide useful guidelines for practice. With respect to cultural self-efficacy, prior studies have found that past job experience (please see Judge *et al.*, 2007, for a meta-analytic review), training (Hahn *et al.*, 2011) and job enrichment practices (Parker, 1998) led to greater self-efficacy in general or a specific type of self-efficacy (i.e., recovery-related self-efficacy). With respect to family role overload, prior meta-analytic reviews found

that job involvement, hours spent at work, work support, schedule flexibility, and job stress led to a lower probability of work interference with family and family interference with work (Byron, 2005), whereas support from family, family involvement, and family centrality led to a higher probability of family-to-work enrichment (Lapierre *et al.*, 2018). With respect to the two supervisory behaviors: supervisory mentoring behaviors and family supportive supervisory behaviors, MNCs should consider increasing these two important supervisory behaviors through training and coaching opportunities. Moreover, MNCs would do well to consider how to arrange female employees in same-sex mentoring relationships.

*Keywords: Female employee expatriate willingness, cultural self-efficacy, family role overload, supervisory mentoring behaviors, family supportive supervisory behaviors, supervisor gender.*

## REFERENCES

Bandura, A. (1989), "Human agency in social cognitive theory", American Psychologist, Vol. 44 No. 9, pp. 1175-1184.

Byron, K. (2005), "A meta-analytic review of work–family conflict and its antecedents", Journal of Vocational Behavior, Vol. 67 No. 2, pp. 169-198.

Hahn, V. C., Binnewies, C., Sonnentag, S. and Mojza, E. J. (2011), "Learning how to recover from job stress: Effects of a recovery training program on recovery, recovery-related self-efficacy, and well-being", Journal of Occupational Health Psychology, Vol. 16 No. 2, pp. 202-216.

Hammer, L. B., Kossek, E. E., Yragui, N. L., Bodner, T. E. and Hanson, G. C. (2009), "Development and validation of a multidimensional measure of family supportive supervisor behaviors (FSSB)", Journal of Management, Vol. 35 No. 4, pp. 837-856.

Hobfoll, S. E. (1989), "Conservation of resources: A new attempt at conceptualizing stress", American Psychologist, Vol. 44 No. 3, pp. 513-524.

Judge, T. A., Jackson, C. L., Shaw, J. C., Scott, B. A. and Rich, B. L. (2007), "Self-efficacy and work-related performance: The integral role of individual differences", Journal of Applied Psychology, Vol. 92 No. 1, pp. 107-127.

Lapierre, L. M., Li, Y., Kwan, H. K., Greenhaus, J. H., DiRenzo, M. S. and Shao, P. (2018), "A meta-analysis of the antecedents of work–family enrichment", Journal of Organizational Behavior, Vol. 39 No. 4, pp. 385-401.

Parker, S. K. (1998), "Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions", Journal of Applied Psychology, Vol. 83 No. 6, pp. 835-852.

Viator, R. E. and Scandura, T. A. (1991), "A study of mentor-protégé relationships in large public accounting firms", Accounting Horizons, Vol. 5 No. 3, pp. 20-30.

# TOWARDS A COMPUTATIONAL CORPORATE GOVERNANCE MODEL?

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## ABSTRACT

Emerging technologies such as artificial intelligence, blockchain, smart contracts, and big data are rapidly reshaping social, political, and economic environments. The ongoing technological revolution is also influencing the organization and operation of businesses, as well as corporate governance (Enriques *et al*., 2019). In 2016, the combined application of blockchain and smart contract led to the development of a new corporate governance model known as "decentralized autonomous organization" ("DAO") (Jentzsch, 2016). This model, created with the aim to disrupt traditional hierarchical management structures and the typical division between ownership and control, is characterized by decentralization, automatic transaction governance, transparency, and token-based membership (Metjahic, 2019). Specifically, the application of smart contracts enables the monitoring of the negotiated conditions between tokenholders and the company, and automates actions/payments as soon as these conditions are met (Lafarre *et al*., 2019). Such conditions cannot be amended, because they are recorded in the blockchain, which removes the uncertainty of a potential withdrawal of consent to the contract by one of the parties (O'Shields, 2017). Basically, the combined utilization of blockchain and smart contract leads to a technological community-driven form of corporate governance, where there is no need for human involvement, unless a tokenholder proposes to the others any change to the encoded rules. Indeed, the rules of the DAO's governance and the parameters for its decision-making are encoded into the blockchain and performed through smart contracts, making the management activities essentially self-executing (Gail *et al*., 2022). In recent years, DAO's features have been (fully or partially) implemented into the structure of several corporations, especially in markets like cryptocurrency, DeFi and NFT. Moreover, their characteristics have been shaped by the improvements in AI technologies, whose superior performance in data collection, valorisation and processing has already affected most corporate governance operations: from the monitoring function, through strategy setting and decision-making, to risk management and compliance (Armour *et al*., 2020). Thus, a new type of organization characterized by the combination of AI and blockchain technologies has been theorized: the "AI DAO". In this regard, it has been posited that the decentralized infrastructure of a DAO, along with the use of blockchain combined with AI for decision-making, could led to a self-driving decentralized corporation that operates without management (Bayern, 2017). In reality, given the international legal framework and the escalating risks associated with the use of AI-Automation technologies, a truly self-AI-driven

corporation (setting aside the doubt of its feasibility) is not desirable. By contrast, it is conceivable that a new form of corporate governance model could emerge, one in which both the main features of DAO and AI technologies (e.g., predictive analysis systems, automated decision-making, natural language processing, and so on) are integrated into the board's functions and structure, managerial accountability, and shareholder/tokenholders rights, without sacrificing the role of the human being at the altar of technology. Regardless, such a new corporate governance model (as well as the DAO) remains surrounded by ethical, legal, technological, and accountability concerns and challenges. Having briefly outlined the current framework, this study aims to examine the main characteristics of the DAOs and explore the business opportunities and legal challenges they present in comparison to traditional corporate governance models. The study further introduces the concept of "computational corporate governance model" referring to a novel kind of technological corporate governance structure that blends some of the key features of the DAO (e.g. transparency, automation, immutability, and token-based community) with an extensive use of AI-Automation systems and advanced data science techniques (e.g. machine learning, deep learning, generative artificial intelligence, big data, synthetic data creation, and so forth). This corporate governance model diverges from the aforementioned self-driving AI corporation because it preserves a crucial role for managers in addressing the ethical, algorithmic, and legal issues of the corporation. Indeed, a pervasive integration of AI/Automation systems into corporate governance could still have a negative impact on human rights. For this reason, to prevent a potentially unethical and risky proliferation of such "computational corporate governance model" this study proposes an approach called "AI by Corporate Design". This approach is aimed at implementing these technologies into the corporate structure while upholding respect for ethical, legal, and algorithmic instances. Under this approach, the initial stages of implementing AI technologies are characterized by the creation of an Ethic, Algorithmic, and Legal Committee ("EALC"). Specifically, the EALC, comprised of managers and directors, is tasked with creating and/or updating the adequate organizational structure in line with the implementation the of AI technologies within it. From the outset, the focus is on the impact of these technologies on main business processes and relevant stakeholders. Moreover, this committee is designed to act as a "filter" between AI output and stakeholders, ensuring the respect of ethics, privacy, cybersecurity, and legal obligations. Beyond safeguarding human rights, the adoption of the "AI by Corporate Design" approach also enhances the attractiveness of the "computational corporate governance model" in several ways. Firstly, integrating the EALC committee into the corporate governance structure can enhance the adequacy and competitiveness of the corporation. Furthermore, the deployment of such approach can strengthen the corporation's market position and enhance customers engagement, as an indirect result of the focus on ethical issues. Additionally, the adoption

of this approach can indirectly bring the corporation into compliance, either fully or partially with EU and International AI regulations.

*Keywords: corporate governance, decentralized autonomous organization, computational corporate governance, blockchain, smart contract, artificial intelligence, data science, AI by Corporate Design*

## REFERENCES

Armour J. and Eidenmüller H. (2020), "Self-Driving Corporations?", in Oxford Legal Studies Research Paper, 5.

Bayern S. (2017), "Company Law and Autonomous Systems: A Blueprint for Lawyers", in Entrepreneurs, and Regulators, Hastings SCI. & TECH. L.J.

Cheffins B.R. (2013), The Oxford Hand-Book of Corporate Governance, Mike W. et al., "The History of Corporate Governance".

Jentzsch C. (2016), "The History of the DAO and Lessons Learned", available at: https://blog.slock.it/the-history-of-the-dao-and-lessons-learned-d06740f8cfa5.

Enriques L. and Zetzsche D.A. (2019), "Corporate Technologies and the Tech Nirvana Fallacy", ECGI Working Paper, n. 457.

Gail W., Steven L., Jason S., Fried, Frank, Harris, Shriver & Jacobson LLP (2022), "A Primer on DAOs", in Harvard Law School Forum on Corporate Governance, available at: https://corpgov.law.harvard.edu/2022/09/17/a-primer-on-daos/.

Lafarre A. and Van der Elst C. (2019), "Blockchain and Smart Contracting for the Shareholder Community", EUR. BUS. ORG. L. REV, 111.

Lafarre A. And Van Der Elst C. (2018), "Blockchain Technology for Corporate Governance and Shareholder Activism", ECGI Law Working Paper, n. 390.

Jena D., Mohanta K.B. and Panda S. (2018), "An Overview of Smart Contract and Use Cases in Blockchain Technology", in Proceedings of the 2018 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT), Bengaluru, India.

Metjahic L. (2019), "Deconstructing the DAO: The Need For Legal Recognition and the Application of Securities Laws to Decentralized Organizations", Cardozo Law Review, 39.

O'Shields R. (2017), "Smart Contracts: Legal Agreements for the Blockchain", North Carolina Banking Institute, 21.

# NEW FRONTIERS OF VALUE CREATION IN MARKETING: AN INVESTIGATION OF THE ANTECEDENTS

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## ABSTRACT

Our study addresses the issue of the value creation process in the field of Marketing. One of the main shortcomings of traditional marketing interpretations is related to a lack of credibility towards the discipline by stakeholders. This is due to the fact that traditional marketing is, in general, misperceived and considered as a hustle and misleading activity, which does not address human needs and does not favor human participation. Such a marketing image issue seems to be linked to its purely firm-centric nature anchored to profit maximization, with a one-way focus on customers, ignoring the myriad of stakeholders involved in the social, environmental and economic contexts as well as their role in creating integrated value (Bhattacharya and Korschun, 2008; Laczniak and Murphy, 2012).

That is why, we point out the need to overcome some of the traditional firm-centric marketing strategies and dichotomous value creation objectives – which are considered residual and myopic by an increasing number of scholars and practitioners (Freeman et al., 2010; Kachersky and Lerman, 2013) – to propose a new conceptualization of the marketing value creation process that is participatory, collaborative (Kotler et al., 2022; Marino et al., 2020; Heath et al., 2017; Steth et al., 2006) and based on trustful and long-term firm-stakeholder and stakeholders' relationships (Civera and Freeman, 2019; Casalegno et al., 2020). To do so, we begin our study by outlining some of the antecedents, which, in the context of our research, are interpreted as managerial strategic orientations and postures stemming from Stakeholder Theory (Freeman, 1984). Accordingly, marketing managers who incorporate those orientations and postures in their strategic thinking when approaching the market, their stakeholders and, in a broader logic, the society, are more likely to co-create value and use marketing as a *social force* (Aksoy et a., 2022; Kotler et al., 2022; Vargo and Lusch, 2004). To this end, we integrate and apply the main concepts and constructs of Stakeholder Theory to the Strategic Marketing discipline, following the path of stakeholder theorists who have been suggesting a broader interpretation of the marketing boundaries and goals, leading to stakeholder marketing for instance, over the last 20 decades (Hult, 2011). This initial theoretical analysis is supported, so far, by empirical evidence that we collected through 11 semi structured and in-depth qualitative elite interviews with managers and entrepreneurs of small, medium and large Italian firms conducted between January and December 2022. Our first set of results show that, to begin thinking about a new perspective of

value creation in marketing and ideally build a model of such an evolutionary process, marketing managers should reframe their strategic mentality towards: 1) a relationship-based approach of value exchange, confirming the views of Godfrey et al. (2009), Hillebrand et al., (2015), and Kull et al. (2016); 2) an interpretation of the context as dynamic and influenceable by multi-stakeholder initiatives, confirming the ideas of Gummesson (2008), Hult et al. (2011), Neville and Menguc (2006) and, Polonsky et al. (1999); 3) a collaborative view of stakeholders within ecosystems, supporting the view of Cortese et al. (2023), Freeman et al. (2007); Parmar et al. (2022); Strand and Freeman (2015). Our study calls for further investigations that could systematically review the state of the art in the marketing literature as for whether and how marketing studies adopt the evolutionary value creation process stemming from ST.

*Keywords: Value Creation; Stakeholder Theory; Marketing definition; Value creation in marketing; Multi-stakeholder marketing; Cooperation.*

## REFERENCES

Aksoy, L., Banda, S., Harmeling, C., Keiningham, T. L., & Pansari, A. (2022). Marketing's role in multi-stakeholder engagement. International Journal of Research in Marketing, 39(2), 445-461.

Bhattacharya, C. B., & Korschun, D. (2008). Stakeholder marketing: Beyond the four Ps and the customer. Journal of Public Policy & Marketing, 27(1), 113-116.

Casalegno, C. G. N., Civera, C., Mosca, F., & Freeman, E. (2020). Circular economy and relationship-based view. Symphonya Emerging Issues in Management, 1, 149-164.

Civera, C., & Freeman, R. E. (2019). Stakeholder Relationships and Responsibilities: A New Perspective. Symphonya. Emerging Issues in Management, (1), 40-58.

Cortese, D., Civera, C., Casalegno, C., & Zardini, A. (2023). Transformative social innovation in developing and emerging ecosystems: a configurational examination. Review of Managerial Science, 1-31.

Freeman R.E. (1984), Strategic Management: A Stakeholder Approach, Boston: Pitman.

Freeman R. E., Wicks A., Harrison J., Parmar B., S. de Colle (2010). Stakeholder Theory: The State of The Art, Cambridge University Press.

Freeman, R. E., Martin, K., & Parmar, B. (2007). Stakeholder capitalism. Journal of business ethics, 74(4), 303-314.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship be-tween corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. Strategic management journal, 30(4), 425-445.

Gummesson, E. (2008). Extending the service-dominant logic: from customer centricity to balanced centricity. Journal of the Academy of Marketing science, 36(1), 15-17.

Heath, T., Cluley, R., & O'Malley, L. (2017). Beating, ditching and hiding: consumers' everyday resistance to marketing. Journal of Marketing Management, 33(15-16), 1281-1303.

Hillebrand, B., Driessen, P. H., & Koll, O. (2015). Stakeholder marketing: Theoretical foundations and required capabilities. Journal of the Academy of Marketing Science, 43(4), 411-428.

Hult, G. T. M., Mena, J. A., Ferrell, O. C., & Ferrell, L. (2011). Stakeholder marketing: A definition and conceptual framework. AMS Review, 1(1), 44–65.

Kachersky, L., & Lerman, D. (2013). Bridging marketing's intentions and consumer perceptions. Journal of Consumer Marketing, 30(7), 544-552.

Kotler, P., Pförtsch, W., & Sponholz, U. (2022). H2H Marketing human to human marketing. Dall'orientamento al cliente all'orientamento all'essere umano. A cura di Ancarani F. Piccin-Nuova Libreria.

Kull, A. J., Mena, J. A., & Korschun, D. (2016). A resource-based view of stakeholder marketing. Journal of Business Research, 69(12), 5553-5560.

Laczniak, G. R., & Murphy, P. E. (2012). Stakeholder theory and marketing: Moving from a firm-centric to a societal perspective. Journal of Public Policy & Marketing, 31(2), 284-292.

Marino, V., Resciniti, R., & D'Arco, M. (2020). It's all about marketing! Exploring the social perception in the Italian context. Italian Journal of Marketing, 2020, 7-23.

Neville, B. A., & Menguc, B. (2006). Stakeholder multiplicity: Toward an understanding of the interactions between stakeholders. Journal of business ethics, 66(4), 377-391.

Parmar, B. B. L., Wicks, A. C., & Freeman, R. E. (2022). Stakeholder Management & The Value of Human-Centred Corporate Objectives. Journal of Management Studies, 59(2), 569-582.

Polonsky, M. J., Suchard, H. T., & Scott, D. R. (1999). The incorporation of an interactive external environment: a stakeholder approach. Journal of Strategic Marketing, 7(1), 41-55.

Sheth, J. N., Sisodia, R. S., & Barbulescu, A. (2006). The image of market-ing. In Sheth, J. N., & Sisodia, R. S. (2015). Does Marketing Need Reform?: Fresh Perspectives on the Future. (26-36). Armonk, NY: M.E. Sharpe.

Vargo, S. L., & Lusch, R. F. (2004). The four service marketing myths: remnants of a goods-based, manufacturing model. Journal of service research, 6(4), 324-335.

# PUBLIC PROPERTY MANAGEMENT: MEASURING ITS EFFICIENCY

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## ABSTRACT

State property is an essential component of national wealth, as it represents the country's potential. It stimulates a wide range of economic activities that contribute to the creation and provision of public goods. That is why it is important to manage public property effectively. Structural inefficiencies in the property market can have far-reaching consequences for many areas of the economy (Herath and Maier, 2015).

According to the basic definition, state property refers to the ownership by the state. Typically, in most countries, public property is an immovable property and defined by local legislation (Gross and Zrobek, 2015). However, the concept of public ownership also depends on who owns the property rights (Grover and Elia, 2009). On the one hand, public property is the real estate that is not owned or held by the private sector. On the other hand, public property is not necessarily owned by a public entity, as ownership can be transferred to a private organization through a lease or tenancy (Gross and Zrobek, 2015). For instance, governments may transfer ownership of a real estate unit to a private organization through a lease agreement in exchange for a fee. The private entity, authorities or other organizations then take control of the property. Nevertheless, the real estate would still fall under the definition of public real estate as it serves a public function and therefore must keep asset management. The management of public assets can be defined as the intentional actions undertaken by a municipality in accordance with legal provisions, encompassing decisions aimed at achieving optimal social objectives and economic outcomes (Cymerman and Cymerman, 2019). Scholars agree that the management of public sector assets has its own challenges and concerns, but assert that modern approaches of private asset management should also be applied to the management of public assets, particularly in the process of acquisition, maintenance, renovation, leasing, or sale of idle assets (Ragauskienė, 2011; Klumbytė and Apanavičienė, 2014). Nevertheless, the question of the ideal approach to public property administration and efficiency in asset management remains largely unresolved, despite the growing interest in this topic.

Efficiency is a core concept in economics, encompassing the relationship between outputs and the costs associated with achieving them. In a broader sense, efficiency involves the coordinated processes of administration, forecasting, planning, management, coordination, and control of public assets (Abdullah et al., 2011). Girginer and Kaygisiz (2013) advocate considering asset management

efficiency as correct cost allocation, suitable administration, and decent management in order to maximize benefits to the public. Klumbytė and Apanavičienė (2014) argue that efficiency in the management of public assets is linked to reducing operational and management costs while maintaining the quality of services provided by the assets. Whereas Just and Maennig (2012) explore this idea further by emphasizing that efficiency of a public property includes consideration of the entire life cycle while evaluating the maintenance costs and potential revenues that could be generated over time. In the first instance, consideration should be given to the creation of best value for the asset and the alternative use of the asset. If a particular asset cannot be used efficiently, it should be disposed of through public procurement. Such approach encourages the government to achieve efficiency in the management of public assets, reducing the cost of maintaining the asset while increasing the revenues from its sale.  The efficiency of public property can also be ensured by other factors, such as the implementation of a strategic public property management system, securing rental income, strategic portfolio development, reducing vacancy, strategically organizing the management system, reducing the area under management, identifying public real estate needs, and reducing real estate maintenance costs. Unfortunately, the latter factors have not been sufficiently explored in the scientific literature through various empirical evaluation methods, but rather have been analyzed in a theoretical context. Furthermore, it should be noted that the evaluation of the efficiency of public real estate management itself is also based on relatively narrow research methods, which generally do not answer the question of whether public real estate is managed efficiently.

We look at the efficiency of public asset management in Lithuania, which gradually evolved in public ownership through certain stages after the restoration of independence (first, the state took ownership of assets, then public assets were increasingly considered economically viable, and finally free market principles were applied to asset management. We assume that this is the reason, why the problem of efficiency of the state property in Lithuania has been barely addressed. The first significant transformations to the legislation towards efficiency of public property administration were made in 2015, when a new strategy of criteria for efficiency was implemented and the state property policy was restructured. Therefore, until 2015, statistical data were not drafted and compiled into a single database. Due to this limitation in the availability of statistical data, the study assesses the efficiency of public property management only for the period 2016-2020. We apply Data Envelope Approach (DEA), which is used by some scholars to measure the efficiency of an agency responsible for real estate development. We collected data from the state-owned enterprise Turto bankas, and other published reports and include in the research 45 observations. We include the following variables as an input: the number of state-owend property units, total area managed by the state (sq.m.), vacant

premises (sq.m.), rent per 1 sq.m. of rented state-owned premises, the residual value of the property (Eur) and as an output variable we use capitalization rate (proc.).

Our research concludes that the most favorable approach for public property is the centralized management model, in which the government entrusts to a single responsible state entity the use and disposal of state assets. On contrary, decentralized approach represents the management model in which an asset is governed and disposed by the entity that uses the property (state or municipal institutions). Some countries may apply dual state property management model. In general, public property in Lithuania is still considered one of the inefficiently managed sectors. Our findings suggest that state-owned residential property in Lithuania is the only property class managed efficiently and only in 2020. Yet this is the asset class that still retains a decentralized approach.

Overall, there has been some progress in the efficiency in public property management. The improvement relates to better portfolio management, the disposal of unnecessary assets, higher revenues of the public budget and the share of property assets under management. If this trend continues in the future, the government will be able to generate more rental income and thus increase the efficiency of the administration.

*Keywords: state-owned property, real estate, efficiency, management*

## REFERENCES

Abdullah, S., Abdul Razak, Hamid Kadir Pakir, A. (2011). The characteristics of real estate assets management practice in the Malaysian Federal Government. Journal of Corporate Real Estate, Vol. 13 No. 1, p. 16-35. https://doi.org/10.1108/14630011111120323

Cymerman J., Cymerman W. (2019) The effectiveness of real estate management in local government – an example of voivodship capitals in Poland, IOP Converene Series: Materials Science and Engineering 603. doi:10.1088/1757-899X/603/2/022006

Girginer, N., Kaygisiz, Z. (2013). Cost-utility analysis in municipalities: The case of Odunpazarı and Tepebası municipalities in the city of Eskisehir. Habitat International, 38, pp. 81-89.

Gross, M., Zrobek, R., Spirkov´a, D. (2014) Public real estate management system in the procedural approach – a case study of Poland and Slovakia. Real. Estate Manag. Valuat. 22, pp. 63-72. https://doi.org/10.2478/remav-2014-0028

Grover, R., Elia, E., 2009. State Land Management Questionnaire. Guidance Document. FIG Commission 7

Herath, S., Maier, G. (2015) Informational efficiency of the real estate market: A meta-analysis, Journal of Economic Research, Vol. 20 No. 2, pp. 117-168 DOI: 10.17256/jer.2015.20.2.001

Just, T., Maennig, W. (Eds.). (2012). Understanding German real estate markets. Heidelberg: Springer, p. 242

Klumbytė, E., Apanavičienė, R. (2014). Real estate strategic management model for Lithuanian municipalities. International Journal of Strategic Property Management, Vol 18 No 3, pp. 279-291, DOI: https://doi.org/10.3846/1648715X.2014.942407

Mackevičius, J., Ragauskienė, E. (2012) State property: economic analysis and management, Vilniaus universitetas, Ekonomika, Vol. 91 No 2. pp. 117-128, DOI: 10.15388/Ekon.2012.0.892, available at: https://www.journals.vu.lt/ekonomika/article/view/892 (accessed 21 February 2023).

# PRIORITIZING CIRCULAR STRATEGIES IN THE AGRI-FOOD SECTOR: A MULTI-CRITERIA DECISION MAKING (MCDM) APPROACH

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## ABSTRACT

There is growing consensus on the need of a gradual transition to a more sustainable economic growth. Global warming, pollution and the rapid absorption of natural resources require swift and immediate action to limit and reverse their impact on the environment. The circular economy (CE), when incorporated into various business models across a variety of sectors and at different levels, represents a straightforward approach to overcoming these global challenges (Hornain, 2021; United Nations, 2019). A growing interest in CE can be highlighted in the EU policy looking for developing guidelines to support CE strategies on the national level. Since 2015, the European Commission has launched a Circular Economy Action Plan (European Commission, 2015) to stimulate Europe's transition towards a more circular economy, to boost global competitiveness and to foster sustainable economic growth. The application of CE principles in the agri-food sector appears to be an important and necessary change to transform society and face future challenges (European Commission, 2021). The increasing global food demand, in fact, is forcing operators and policy makers to identify effective new strategies for production, distribution, and consumption (Accorsi et al., 2019).

Beyond the attempts of measuring the firm's performance circularity, what is lacking is an approach that can assess the circularity status in a holistic vision, considering the complexity and disruption of all circular economy principles. Literature shows that advanced research and data availability on CE assessment tools and indicators are lacking (Rocchi et al., 2021; Elia et al., 2017).

In this context, a step-by-step approach has been used to select a customized set of indicators capable of accurately assessing the level of CE in agrifood sector both at macro, meso and micro level. This has made it possible to prioritize the circular economy strategies proposed in the literature and based on four orientations: Operations, Product and. Services, Culture and Organization and Ecosystem.

The research design is composed of four stages. In the first stage, through the analysis of the literature, a theoretical model which provides a holistic vision of the circular economy has been implemented and adapted to agri-food sector. In the second stage, a set of indicators capable of measuring each sub-criterion has been collected. In third stage, a weight is assigned to each indicator using Analytical Hierarchy Process (AHP), which is a pairwise comparison methodology. Lastly, a geometric Multi Criteria Decision Method (MCDM), called Axial Distance-based Aggregated Measurement (ADAM)

model is used to normalize, assess, and aggregate the results and produce final scores for the different alternatives to be ranked based on their final circularity scores.

The results showed that the "circular and organization" orientation is the one with the best score in terms of circularity. This emphasizes the importance of considering the circular economy part of the corporate organizational strategy and not to relegate it to the sustainability of processes. The company that sets long-term circularity goals manages to be a circular organization over time. Initiatives in this area aim to develop time targets to support the circular vision and mobilize the necessary resources that can help business units prioritize and implement circular initiatives. Recognizing that established internal ways of doing business are likely to impede circular decision-making and at speed and be a barrier for further uptake, it is important to make the circular economy a central element in the ways of working and in the structure of the company, by incorporating the circularity in policies, processes, and procedures.

The framework implemented in this study could be useful tool to understand the extent to which companies are implementing circular business models across different dimensions, and thus where they are still lacking, allowing to guide environmental policies.

*Keywords: circular economy, agri-food, MCDM, Axial Distance-based Aggregated Measurement (ADAM) method, circular policy*

## REFERENCES

Accorsi, R., Ferrari, E., & Manzini, R. (2019). "Modeling inclusive food supply chains toward sustainable ecosystem planning". Sustainable Food Supply Chains (pp. 1-21). Academic Press.

Elia, V., Gnoni, M. G., & Tornese, F. (2017). "Measuring circular economy strategies through index methods: A critical analysis". Journal of cleaner production, Vol. 142, pp. 2741-2751.

European Commission. (2015). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Closing the Loop–An EU action plan for the Circular Economy, Brussels, Belgium. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614

European Commission. (2021). Circular Economy Indicators: Eco-Innovation Action Plan. Available at: https://ec.europa.eu/environment/ecoap/indicators/circular-economy-indicators_en.

Hornain, J. (2021). "Circular Economy: a Concrete Solution to Climate and Biodiversity Challenges". Available at: https://www.europeanfiles.eu/environment/circular-economy-a-concrete-solution-to-climateand-biodiversity-challenges.

Rocchi, L., Paolotti, L., Cortina, C., Fagioli, F. F., & Boggia, A. (2021). "Measuring circularity: an application of modified Material Circularity Indicator to agricultural systems". Agricultural and Food Economics, Vol. 9 No 1, pp. 1-13.

United Nations. (2019). Circular Economy Crucial for Paris Climate Goals. Available at: https://unfccc.int/news/circular-economycrucial-for-paris-climate-goals.

# IT AIN'T EASY (ON YOUR OWN): EXPLORING HR ANALYTICS CHALLENGES AND DIFFICULTIES THROUGH A MULTI STAKEHOLDER PERSPECTIVE

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## ABSTRACT

## POSITIONING AND RESEARCH GAP

Human Resource (HR) analytics, defined as «a proactive and systematic process for ethically gathering, analyzing, communicating and using evidence-based HR research and analytical insights to help organizations achieve their strategic objectives» (Falletta and Combs 2021, p. 54), is increasingly being used by organizations when dealing with the management of their HR. Despite the positive impact that the adoption of HR analytics can produce on the workforce, and, consequently, on different aspects of business performance, still few companies hired or trained experts dedicated to HR analytics, mainly multinational companies (Andersen, 2017). In fact, the vast majority of firms shows a still immature approach to the topic, presenting obvious difficulties in providing robust descriptive analyses in a systematic manner (Levenson and Fink, 2017). Specifically, in most organizations HR functions are having quite a few problems in overcoming their own issues and adopting a more consultative role that can provide support to top management in the decision-making process (Dahlbom *et al.*, 2019). In fact, these departments are accustomed to performing their tasks with a mindset that is strongly oriented toward providing the service required by the line, without trying to understand how they might have more strategic relevance (Bresciani *et al.*, 2012). According to van den Heuvel and Bondarouk (2017), this is due to the fact that HR departments are generally not involved in the decision-making process or are not taken seriously due to a supposed lack of digital competencies and/or data-driven approaches (Chalutz Ben-Gal, 2019), thus limiting the influence of conclusions developed on the basis of HR analytics activities. Consequently, only a very small percentage of these departments are able to develop predictive models, and even fewer functions are able to develop prescriptive models aimed at suggesting specific actions to be taken based on the data collected and analytics performed (Levenson and Fink, 2017). On the contrary, most organizations are still unable to provide even basic operational reports on their workforce, as these companies still use HR information systems that are too heterogeneous. This obviously inhibits advancement toward measuring and analyzing more complex aspects related to the workforce, such

as providing more reliable assessments in relation to individual or group performance (Dahlbom *et al.*, 2019), such as, for example, employee motivation and retention (Di Prima and Ferraris, 2022).

Thus, it is confirmed how, although interest in HR analytics is generally high, there is still a significant gap between the goals of organizations and their actual capabilities to implement the underlying activities: in fact, while some organizations are making significant progress in the use of HR analytics, many others have yet to systematize basic HR processes and modernize HR information systems, consequently limiting their ability to analyze data to answer key questions related to the workforce, thus providing useful information for the decision-making process (Dahlbom *et al.*, 2019).

According to Fernandez and Gallardo-Gallardo (2021), the confusion and lack of confidence found among HR executives toward this practice can be attributed to the lack of clarity about the factors that prevent its adoption in organizations, thus hindering the development of the field and the spread of universally accepted practices. In fact, there are still few publications devoted to the adoption of HR analytics and the main issues it might entail, and the few that are available adopt an individual perspective that does not consider other organizational factors. Previous research regarding organizations' challenges and difficulties when dealing with HR analytics just relies on the authors own opinion (e.g., Andersen, 2017; Fernandez and Gallardo-Gallardo, 2021; Patre, 2016) or does not adopt an empirical point of view (e.g., Levenson and Fink, 2017). The few exceptions that exist (e.g., Dahlbom *et al.*, 2019) just focus on the HR point of view, without considering other organizational stakeholders which have been deemed as crucial for a successful implementation of HR analytics, as the top management (Peeters *et al.*, 2020) and the HR technology providers (Falletta and Combs, 2021).

## OBJECTIVES

The objective of this study is to fill the highlighted gaps by providing a deeper understanding of the main difficulties that are experienced by different organizational stakeholders when dealing with HR analytics. In particular, we will try to answer the following research questions:

RQ1: What are the main challenges and difficulties that organizations experience when dealing with HR analytics?

RQ2: How can these challenges and difficulties be overcome?

## RESEARCH DESIGN

In order to answer our research questions, we will rely on a qualitative approach, as this will be an explorative case study (Ferraris *et al.*, 2019; Yin, 2014). More specifically, we will conduct semi-structured interviews that will be analyzed by following the Gioia method (Gioia *et al.*, 2013). Our

interviews will involve three main organizational stakeholders: HR managers, employees, and HR analytics technology providers. Interviews will be completely transcribed to simplify the coding approach (Miles *et al.*, 2014), and will be analyzed through a multi-step iterative process. Critical verification techniques will be used to enhance the validity through coders cross-checking (Morse *et al.*, 2002).

## THEORETICAL CONTRIBUTIONS AND IMPLICATIONS FOR PRACTITIONERS

This study will offer its contribution by clarifying and systematizing the main challenges and difficulties that are experienced by organizations when dealing with HR analytics, as well as by providing suggestions on how these can be overcome. This will be interesting for both practitioners, as we will offer them practical advice to improve their HR analytics activities, thus maximizing the benefits that may be obtained from them, and for academics. In fact, our study will answer the call of the literature to further explore the factors that are preventing HR analytics adoption within organizations, thus hindering its spread (Fernandez and Gallardo-Gallardo, 2021). Furthermore, we will also investigate how successful organizations are overcoming these difficulties, thus paving the way for the establishment of universally accepted practices to deal with HR analytics (e.g., Falletta and Combs, 2021). Finally, to the best of our knowledge, our study will be the first to consider not only the point of view of HR practitioners, but also of other important organizational stakeholders as the top management and the HR technology providers, which may be involved in the analytical process or could benefit from it (Falletta and Combs, 2021; van den Heuvel and Bondarouk, 2017). By doing so, we will offer a more holistic understanding of HR analytics which will further clarify the academic comprehension of these recent, but very promising, tool.

*Keywords: HR analytics; challenges; difficulties; qualitative approach; Gioia method*

## REFERENCES

Andersen, M.K. (2017), "Human capital analytics: the winding road", Journal of Organizational Effectiveness: People and Performance, Vol. 4 No. 2, pp. 133–136, doi: 10.1108/JOEPP-03-2017-0024.
Bresciani, S., Thrassou, A. and Vrontis, D. (2012), "Human resource management - practices, performance and strategy in the Italian hotel industry", World Review of Entrepreneurship, Management and Sustainable Development, Vol. 8 No. 4, p. 405, doi: 10.1504/WREMSD.2012.050297.
Chalutz Ben-Gal, H. (2019), "An ROI-based review of HR analytics: practical implementation tools", Personnel Review, Vol. 48 No. 6, pp. 1429–1448, doi: 10.1108/PR-11-2017-0362.
Dahlbom, P., Siikanen, N., Sajasalo, P. and Jarvenpää, M. (2019), "Big data and HR analytics in the digital era", Baltic Journal of Management, Vol. 15 No. 1, pp. 120–138, doi: 10.1108/BJM-11-2018-0393.
Di Prima, C. and Ferraris, A. (2022), "A New Weapon for Moving Beyond the War for Talent - Using HR Analytics to Support Talent Management Activities.pdf", 15th Annual Conference of the EuroMed Academy of

Business - Conference Readings Book Proceedings, presented at the Sustainable Business Concepts and Practices, pp. 947–950.

Falletta, S.V. and Combs, W.L. (2021), "The HR analytics cycle: a seven-step process for building evidence-based and ethical HR analytics capabilities", Journal of Work-Applied Management, Vol. 13 No. 1, pp. 51–68, doi: 10.1108/JWAM-03-2020-0020.

Fernandez, V. and Gallardo-Gallardo, E. (2021), "Tackling the HR digitalization challenge: key factors and barriers to HR analytics adoption", Competitiveness Review: An International Business Journal, Vol. 31 No. 1, pp. 162–187, doi: 10.1108/CR-12-2019-0163.

Ferraris, A., Erhardt, N. and Bresciani, S. (2019), "Ambidextrous work in smart city project alliances: unpacking the role of human resource management systems", The International Journal of Human Resource Management, Vol. 30 No. 4, pp. 680–701, doi: 10.1080/09585192.2017.1291530.

Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology", Organizational Research Methods, Vol. 16 No. 1, pp. 15–31, doi: 10.1177/1094428112452151.

van den Heuvel, S. and Bondarouk, T. (2017), "The rise (and fall?) of HR analytics: A study into the future application, value, structure, and system support", Journal of Organizational Effectiveness: People and Performance, Vol. 4 No. 2, pp. 157–178, doi: 10.1108/JOEPP-03-2017-0022.

Levenson, A. and Fink, A. (2017), "Human capital analytics: too much data and analysis, not enough models and business insights", Journal of Organizational Effectiveness: People and Performance, Vol. 4 No. 2, pp. 145–156, doi: 10.1108/JOEPP-03-2017-0029.

Miles, M.B., Huberman, A.M. and Saldaña, J. (2014), Qualitative Data Analysis: A Methods Sourcebook, Third edition., SAGE Publications, Inc, Thousand Oaks, Califorinia.

Morse, J.M., Barrett, M., Mayan, M., Olson, K. and Spiers, J. (2002), "Verification Strategies for Establishing Reliability and Validity in Qualitative Research", International Journal of Qualitative Methods, Vol. 1 No. 2, pp. 13–22, doi: 10.1177/160940690200100202.

Patre, S. (2016), "Six Thinking Hats Approach to HR Analytics", South Asian Journal of Human Resources Management, Vol. 3 No. 2, pp. 191–199, doi: 10.1177/2322093716678316.

Peeters, T., Paauwe, J. and Van De Voorde, K. (2020), "People analytics effectiveness: developing a framework", Journal of Organizational Effectiveness: People and Performance, Vol. 7 No. 2, pp. 203–219, doi: 10.1108/JOEPP-04-2020-0071.

Yin, R.K. (2014), Case Study Research: Design and Methods, Fifth edition., SAGE, Los Angeles.

# THE HR ANALYTICS MANIFESTO: A SYSTEMATIC LITERATURE REVIEW TO NAVIGATE THE PAST, PRESENT AND FUTURE OF DATA-DRIVEN HR MANAGEMENT

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## ABSTRACT

Despite the growing interest in HR analytics, which allows organizations to leverage data-driven insights to enhance human resource management practices, there is limited research that systematically examines the current state of knowledge in this field. This study aims to fill this gap by providing a comprehensive overview of existing literature, identifying research trends, and highlighting areas where further investigation is needed.

The study will follow a systematic review methodology, consisting of the following steps. First, a comprehensive search of the literature will be conducted using relevant academic databases such as Scopus and Web of Science. The search terms will include combinations of keywords related to HR analytics, such as "human resource analytics," "people analytics," "HR data analysis," and "HR metrics. Inclusion criteria will be applied to select studies that meet specific criteria: (a) peer-reviewed articles published in English, (b) on journals included in the ABS list, (c) with no specific time limit, as HR analytics is a relatively new concept. Studies that do not meet these criteria will be excluded. Relevant data from selected studies, including research objectives, methodologies, theoretical frameworks, and key findings, will be extracted and organized using a predefined data extraction form. The synthesized findings will be analyzed and categorized to identify common themes, research gaps, and emerging trends in HR analytics research.

The systematic review will provide a comprehensive synthesis of empirical research, theoretical frameworks, and practical implications related to HR analytics. The study will identify key themes, methodologies, and theoretical underpinnings employed in the existing literature. By highlighting research gaps and identifying areas for future exploration, this study will contribute to the development of HR analytics as a distinct and evolving field. The findings will inform researchers, practitioners, and policymakers about the current state of research, potential avenues for further investigation, and best practices in leveraging HR analytics for strategic decision-making. This will enable practitioners to understand the benefits, challenges, and implementation strategies associated with data-driven HR practices, guiding organizations in adopting evidence-based HR analytics

approaches to enhance employee engagement, talent acquisition, performance management, and strategic workforce planning.

# GENDER QUOTAS – USEFUL OR WORTHLESS ?

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## ABSTRACT

The aims of the project are

- a critical analysis of the traditional use of female gender equality quotas

  (TNC traditional concept based on numbers)

- development of an alternative model to achieve a more targeted increase in

  gender equality at the corporate level

  (DIP decision and influencing power based concept)

TNC  - traditionaL concept

For decades a kind of „census" of women in leadership positions" has been taken place both national and international. Hundreds of books, articles, conference papers are published, political discussions still take place (European Institute for Gender Equality, 2022; Lang et al. 2023; OECD, 2023). The aim is always to inform how many top management positions are occupied by women. Often the figures are then condensed in a single percentage (Biswas et al., 2023; Devnew, 2018; Kirsch et al., 2023; Rixom et al., 2023).

These calculations do have an advantage: they are usually easy to collect, are used for internal and external reporting, HR controlling, comparisons and for planning purposes.

But what do these percentages actually say? In our view they are incomplete and generally unsuitable, at least for a strategic gender & diversity policy. Our critique is based on the following:

- These quotas mainly refer only to top management positions (supervisory board/management board).

- They do not clearly differentiate between management levels.

- They are based on (published) numbers.

- They do not explicity consider part-time jobs, job-/top-sharing

- They only consider traditional management careers.

- They do not take into account divisional differencies.

TNC - decision and influencing power concept

In our project we explicitly refer to this criticism and present a concept for calculating differentiated and realistic quotas. They are based on existing power structures. The model can be

used at corporate level for planning and implementation as well as for the evaluation of strategic gender equality policy.

In our presentation it is presented in general terms and illustrated by a company example.

Two well known HR theories are used for discussion:

- The Human Capital Theorie (with special focus on gender equality)(Fraumeni, 2021; Naphat, 2017)

- The Resource based view of strategic management theory in combination with the Market based view of strategic management theory (also with special focus on gender equality)(Sitko, 2023)

The empirical basis for our explorative study:

- interviews, discussion groups, design thinking workshop

- genderdaxCommunity (www.genderdax.de) -a network of 35 companies from different industries/sizes/gender&diversity cultures

The following extension stages will be presented:

- Calculation of the female gender equality quota qF regarding the different hierarchical levels oft the management pyramid

- Weighting of the individual management levels by specifying a DIP (Decision and Influencing Power) level profile. Calculation of the DIP Volumes and determination of

  the female gender equality quota qF.
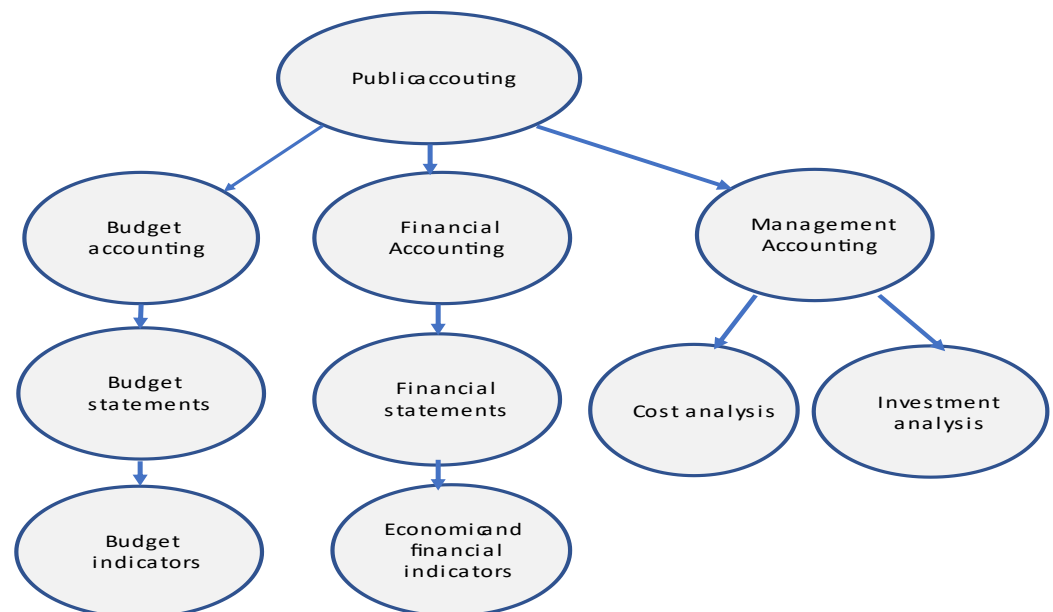


- Consideration of part-time and full-time assignments (Himmen, 2019)

- Analogous calculation of DIP Volumes and qF

## Consideration of Part- and Full-Time Managers -DIP Model-

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(2)   Different part- time regulations ( i/ $t_{li}$ )

$$MV = FMFV + FMPV \qquad\qquad + MMFV + MMPV$$

$$MV = \sum_l FMF_l \cdot p_l \quad + \quad \sum_l \left(\sum_i FMF_{li} \cdot t_{li}\right) \cdot p_l \quad + \sum_l MMF_l \cdot p_l \quad + \sum_l \left(\sum_i MMP_{li} \cdot t_{li}\right) \cdot p_l$$

$$q_{FTV} = \frac{FMFV+FMPV}{MV}$$

**quota of DIP volume of female managers with different part- time regulations**

$$q_{FTV} = \frac{\sum_l FMF_l \cdot p_l + \sum_l \left(\sum_i FMP_{li} \cdot t_{li}\right)\cdot p_l}{\sum_l FMF_l \cdot p_l + \sum_l \left(\sum_i FMP_{li} \cdot t_{li}\right)\cdot p_l + \sum_l MMF_l \cdot p_l + \sum_l \left(\sum_i MMP_{li} \cdot t_{li}\right)\cdot p_l}$$

Domsch/ Ladwig

- Consideration of expert and project careers (Domsch, Ladwig, 2011; Sieber, Klein, 2021)

- Analogous calculation of DIP Volumes and qF

- Consideration of different DIP Volumes of the divisions in a company and using a DIP devision profile.

## Divisons FT & PT (50%) - with weights -

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| R & D (x2) | | Procurement Production (x3) | | Sales Marketing (x4) | | Administration HR (x2) | | IT (x3) | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 0 | 6 | 0 | 8 | 0 | 2 | 0 | 0 |
| 0 | 4 | 0 | 18 | 0 | 56 | 4 | 10 | 0 | 3 |
| 7 | 60 | 9 | 90 | 22 | 548 | 24 | 9 | 3 | 10,5 |
| 175 | 498 | 55,5 | 300 | 564 | 4.788 | 662 | 103 | 22,5 | 51 |
| 182 | 564 | 64,5 | 414 | 586 | 5.400 | 690 | 124 | 25,5 | 64,5 |

Total Volumina: 746          478,5          5.986          814          90
(Divisions)

$q_F = 24,4\%$      $q_F = 13,5\%$      $q_F = 9,8\%$      $q_F = 84,8\%$      $q_F = 28,3\%$

$FV = 1.548$          total V = 8.114,5          MV = 6.567

$q_F = 19,1\%$                                    $q_M = 80,9\%$
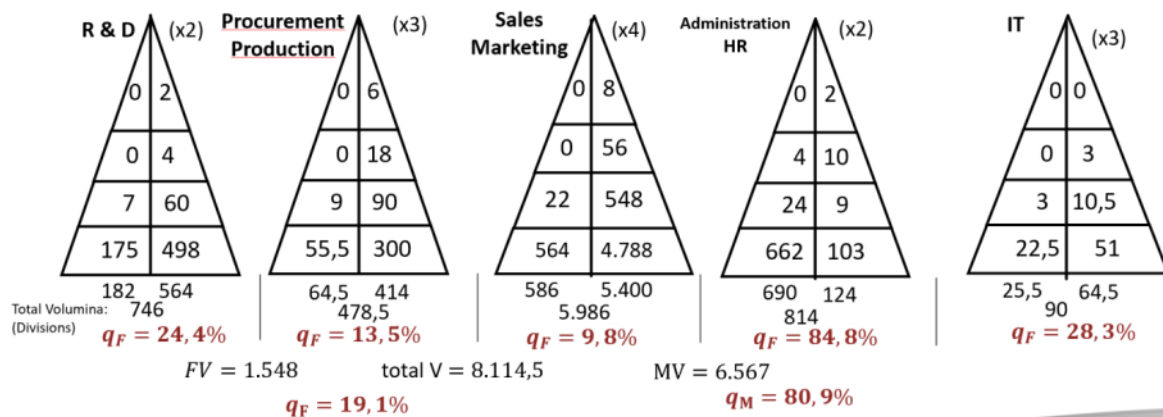
Domsch/ Ladwig

At the end conclusions, limitations and possible further developments will be discussed.

## Conclusions
## - Two different Ways to calculate $q_F$ -

| "traditional" way (TNC Model) | "alternative"/ "new" way (DIP Model) |
|---|---|
| numbers | decision & influencing power |
| unweighted | weighted (vertical/ horizontal) |
| full time (top) managers | full & part time managers/ experts/ project managers |
| homogenous type of managers | heterogeneoustyps/ assignements |
| simple/ easier data collection | challenging data collection |
| macro view | micro view (f. e. company) |
| good for national/ international statistics (f. e. EU, countries, branches) | support for detailed strategic g & d discussions, planning, evaluation etc. |
| published | not published |

Domsch/ Ladwig

## REFERENCES

Biswas, P., Chapple, L., Roberts, H. and Stainback, K. (2ß23): Board gender diversity and women in senior management, Journal of business ethics, Vol. 182 No. 1, pp. 177-198.

Devnew, L (2018), More Women on Boards: An International Perspective, Information Age Publishing, Inc., Charlotte, NC.

Domsch, M. and Ladwig, D. (ed.)(2011), Fachlaufbahnen. Alternative Karrierewege für Spezialisten schaffen, Luchterhand, Köln.

European Institute for Gender Equality(ed.) (2022), Gender statistics database. Online source, Vilnius.

Fraumeni, B. (2021), Measuring Human Capital, Elsevier Science & Technology, London.

Himmen, E. (2019), Topsharing: eine Studie zum Interesse an Jobsharing auf Führungsebene, Springer Gabler, Wiesbaden.

Kirsch, A., Sondergeld, V. and Wrohlich, K. (2023)," Number of women on boards of large companies keeps growing: momentum from inclusion, requirement, however, is waning", DIW weekly report: economy, politics, science: a policy bulletin from the German Institute for Economic Research, Berlin, Vol. 13 No.3/4 , pp. 20-31.

Lang, S., Meier, P. and Sauer, B.(ed.) (2023), Party Politics and the Implementation of Gender Quotas: Resisting Institutions, Springer International Publishing, Palgrave Macmillan, US, Cham.

Naphat, W. (2017), Human Capital Theory: The Theory of Human Resource Development, Implications and Future, Rojabhat University, J.Sci. Humanit.Soc.Sci., Vol.18 (2), pp 240-253.

OECD (ed.) (2023), Labour Force Statistics Ser., Paris.

Rixom, J., Jackson, M. and Rixom, B. (2023)," Mandating diversity on the board of directors: do investors feel that gender quotas result in tokenism or added value for firms?", Journal of business ethics, Vol. 182 No. 3, pp 679-697.

Sieber Bethke, F. and Klein, A. (2021), New Career: Personalentwicklungskonzepte im Kontext von VUCA und Agilität, Haufe Group, Freiburg i. Br.

Sitko, R. (2023), Sustainable Human Resource Management: Using HRM to Achive Long-Term Social, Environmental and Business Goals, Kogan Page, Limited, London.

# FORECASTING THE ABSOLUTE VOLUME OF JOB SEARCH ACTIVITIES USING AUTOREGRESSIVE NEURAL NETWORKS AND EXTREME LEARNING MACHINES COMBINED

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## ABSTRACT

The identification of the business cycle turn points is a challenging task. In this context, the evolution of new data typologies as internet searches data strongly impacted the construction of approaches practical to forecast macroeconomic variables. This work emphasizes the significance of predicting turning points in the business cycle and the potential of Google Trends data in identifying inflection points in data series in labor markets. In this context, the aggregate search behavior analysis could be very relevant to be included and integrated into approaches practical to anticipate turning points in the business cycle. The study aims to examine labor market searches to identify data anomalies that can help anticipate changes in relevant macroeconomic variables. Several forecasting approaches are investigated to predict interest in the labor market over time. Combining forecasts of the different machine learning approaches is beneficial due to the inherent uncertainty associated with each method, and simple averaging may be more accurate than a complex method based on correlations between forecast errors. In this work, we have considered two machine learning approaches, the first one based on autoregressive neural networks and a second one as an ELM extreme learning helpful machine to predict the search behavior better. The findings suggest that combined forecasting approaches are more effective than the classic auto-ARIMA method and can identify innovations in data structures and forecast future changes in the labor market's macroeconomic variables.

## INTRODUCTION

The identification of the business cycle turn points is a challenging task. However, leading economic indicators can be used to predict the turning points of the business cycle (Andersson et al. 2004). The turning point is when the economy transitions from one phase to another, from a recession to an expansion (Chauvet and Piger 2002). The focus is on predicting the timing of the inflection point rather than the actual value of the business cycle. Predictions can be made about the timing of the turning point by using one or more time series leading in the business cycle (Andersson et al. 2004). This tool is valuable for policymakers, investors, and businesses because it can help them make

informed decisions about resource allocation, investment, and risk management (Cross and Bergevin 2012).

Nowadays, a relevant advantage in anticipating the business cycle is using new data typologies directly connected with the web, better identifying and anticipating human behaviors over time. According to Choi and Varian (2012), Google Trends data can help predict "inflection points" in a data series. The term "inflection point" refers to when the trend in the data changes direction, such as a sudden increase or decrease after a period of stability.

Google Trends data can predict several economic time series (for instance, youth unemployment as in the case of Naccarato et al. 2018). Analyzing search volume for specific terms can provide insight into consumer behavior and its economic impact (Choi and Varian 2009). These authors refer to this process as "predicting the future". Policymakers and investors can use this method to find turning points in the business cycle, which can help them make better decisions. Changes in how people act can affect the economy. This can be seen by looking at changes in supply and demand.

The simple autoregressive model can predict steady trends but cannot capture sudden and unexpected inflection points (Jia et al., 2020). In this respect, maybe Google Trends data can help predict these inflection points because it provides details about what is causing the changes in the data (Askitas and Zimmermann 2009). Moreover, following D'Amuri and Marcucci (2017), the changes in the search dynamics can also be influenced by the changes in the underlying people using this technology. At the same time, changes in the same technology can impact the series in Google search volume for a particular topic or keyword.

It may improve accuracy by incorporating Google Trends data into forecasting models (D'Amuri and Marcucci 2017, Naccarato et al. 2018, Choi and Varian 2009). However, further research is needed to determine whether Google Trends data can be used this way and how it should be incorporated into forecasting models.

This work investigates job-offer searches to identify anomalies or "novelties" in their values to obtain relevant signals that can help anticipate the dynamics of other relevant variables (in this case, the unemployment level, for instance). In this sense, we consider an approach based on "anomaly detection" (Chandola et al. 2009).

The work is organized as follows: in the second paragraph, we describe the data and the methodology; in the third, the results; and in the fourth section are the conclusions.

## DATA AND METHODOLOGY

Google Trends is becoming more important in scientific research because they represent and measure interest in a given topic (Naccarato et al., 2018, Askitas and Zimmermann, 2015, Choi and Varian, 2012). In this sense, it is possible to represent and measure many people's behavior and interests. Therefore, researchers can gain insight into various topics by analyzing Google data. The broad issues include health, politics, economics, and more. This is done by analyzing search data from Google (for instance, Ajbar et al. 2021). Following Choi and Varian (2012) and Naccarato et al. (2018), an essential feature of Google Trends is that it allows seeing how frequently a particular term has been searched for on Google over a specific period. In this respect, it is possible to consider an index that shows the percentage of searches for a specific search term in a particular area (see also D'Amuri and Marcucci 2017). Furthermore, if we consider the application, we can consider a raw count of the queries in the index.

Google Trends does not typically show a raw count of the queries in their index (see Naccarato et al. 2018). In this respect, the value obtained is a ratio that compares the volume of queries for a specific term with the total volume of questions in that region at a particular time (Choi and Varian 2012). Users can use the Glimpse social media analytics tool (Glimpse 2023) to monitor and analyze social media engagement and content by considering multiple platforms and monitoring their social media accounts using the tool. The advantage of using the application concerning the Google Trend index is better measuring the number of queries, which allows one to measure more precisely the dynamics over the time of the searches. So we used absolute numbers instead of just a 0-100 index for search volume (Glimpse 2023). The available data come from 30/9/2018 to 17/2/2019. The data are weekly and are related to the query "offerta di lavoro", translated into English "job offer," to capture precisely the number of times people search on Google. In this respect, we can capture the number of times potential workers search on Google for job opportunities. In this respect, the number of queries performed globally is an index of "availability to work." A different work by Drago and Hoxhalli (2020) investigated different keywords on Google Trends, also characterized by different values of the 0-100 indexes (where here we consider explicitly using Glimpse data absolute values of the search volume). Naccarato et al. (2018) and Fasulo et al. (2019) at the same time investigated on "job offers", where in this case, it is essential the use the index and not, as in our case, the absolute number of searches. In this respect, this can be considered very important because using absolute values instead of an index of the search volumes; we can better predict the dynamics of the interest in the job offers on labor markets by potentially considering a piece of more precise information. However, the experiment on this approach is considered on a lower period.

In this respect, in every case, with the help of Google Trends, it is possible to gain insight into how the job market is evolving and where available workers are looking for positions in the market. From the different results, we consider the forecasting methodology relevant to predict the interest of a "job offer" over time. We have considered an approach to forecasting based on machine learning, considering two neural networks, an autoregressive one (see Hyndman and Khandakar 2008, Hyndman et al. 2022, Hyndman and Athanaspoulos 2023), and also a neural network based on an extreme learning machine (Kourentzes 2022). Both the results of the neural networks are considered in order to combine the different results. It is computed the accuracy obtained generating the forecasts at a horizon of 5 observations ahead, against the actual observed data (the last five observations).

The results are validated by considering another classical method, the auto-ARIMA method (Hyndman 2022, Hyndman and Khandakar 2008, Hyndman et al. 2022, Hyndman and Athanaspoulos 2023). To determine the extent to which the results differ from those expected, we also analyze the differences between the final model and the actual data to measure better how some signals change the labor market and the business cycle over time.

## RESULTS

In this respect, the considered methods aim to predict the dynamics of the interest in a job position over time. In this sense, the forecasting approaches performed reasonably well, considering the nature of the original time series. In particular, the results obtained are compared with the last five observations of the original time series and show a MAPE under 10, which can be considered reasonable. It is important to note that the relevant combination of the forecasts is helpful because there is an intrinsic uncertainty on the parameter drift of the different methodologies, and one methodology can perform better than another. In this sense, an approach is considered a combination of different forecasting approaches to minimize the risk. Following Timmermann (2006), a combination of forecasting approaches can deliver more accurate future predictions. An essential combination often performs better than a complex combination that considers forecast errors between models or the theoretically ideal weights for combinations. The simple averaging of multiple forecasts are often more efficient than a more sophisticated approach based on correlations between forecast errors and weighting each prediction following its expected performance. However, attempting to weight forecasts based on the correlations between forecast errors can reduce the accuracy of the combined forecasts since the correlations can be challenging to estimate. In order to evaluate the need to consider a combination of the forecast, we have compared different results at different horizons, and we have observed that there could be some advantages to using a methodology than the other

one at a different temporal horizon (so in this sense we do not found a unique approach dominating the other).

The most straightforward approach for combining forecasts is to average them without considering the complex relationships between them. However, more research may be needed to determine the best course depending on the context and the forecasting models used.

At the same time, it is possible to observe that the validation is obtained because the combined version of the forecasts (combining the results for both approaches) shows a better result than the Auto-ARIMA methodology, which is a classical forecasting approach for time series (Hyndman 2022). The final results of the combination are also compared with the relevant one. In this respect, where there could be a more significant difference between the actual forecasts and the accurate result, this could signal that the job market has less dynamic unemployment over time, leading to fewer searches. On the other hand, where the predicted value is lower than the real one, unemployment is increasing, or there is also an increase in people actively seeking a new position (maybe to change their actual position). In this sense, the result of the forecasting process can be seen as a way to identify "novelties" in the data structures useful to anticipate the business cycle.

*Keywords: Economics, Business Cycle, Job-Market, Google Queries, Forecasting, Neural Networks, Machine Learning, Forecasts Combination*

## CONCLUSIONS

This work aims to examine how the dynamics of interest in jobs over time can be predicted using different forecasting approaches. The forecasting methods perform pretty well also being validated from the comparison with Auto-ARIMA methodologies performing worstly. In this sense we are able to better predict the dynamics of the absolute values of the searches over time which is considered a valid result. Because of the inherent uncertainty of different methods and the fact that one method may perform better than another, combining forecasts is a good idea. It has been shown that combining different forecasting approaches can lead to more accurate forecasts in the future. A simple average of multiple forecasts can provide more accuracy than a more complex approach based on correlations between forecast errors. However, there is a risk that forecast accuracy will be reduced if attempts are made to weight forecasts based on these correlations. The results of this study suggest that combining the results of two forecasting approaches provides better results as well than a classic auto-ARIMA method. This could be very important on these approaches: better the forecasting method (in this case based on a machine learning AR – ELM neural network approach) better performances on predicting the "present".

Regarding business cycles, the results can help identify innovations in data structures and predict their future changes. Although it is easiest to average the forecasts, further research may be needed to determine which approach is most appropriate depending on the context and forecasting models used.

## REFERENCES

Ajbar, A., Shepherd, T.A., Robinson, M., Mallen, C.D. and Prior, J.A. (2021). Using Google Trends to assess the impact of Global Public Health Days on online health information-seeking behaviour in Arabian Peninsula. Journal of the Egyptian Public Health Association, 96(1). doi:https://doi.org/10.1186/s42506-020-00063-w.

Andersson, E., Bock, D. and Frisén, M. (2004). Detection of Turning Points in Business Cycles. Journal of Business Cycle Measurement and Analysis, 2004(1), pp.93–108. doi:https://doi.org/10.1787/jbcma-v2004-art6-en.

Askitas, N. and Zimmermann, K.F., (2009). Google Econometrics and Unemployment Forecasting. Applied Economics Quarterly, 55(2), pp.107-120.

Chandola, V., Cheboli, D. and Kumar, V. (2009). Detecting Anomalies in a Time Series Database. [online] conservancy.umn.edu. Available at: https://conservancy.umn.edu/handle/11299/215791.

Chauvet, M. and Piger, J. (2002). Identifying Business Cycle Turning Points in Real Time. [online] papers.ssrn.com. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=367620

Choi, H. and Varian, H. (2012). Predicting the Present with Google Trends. Economic Record, 88, pp.2–9. doi:https://doi.org/10.1111/j.1475-4932.2012.00809.x.

Choi, H. and Varian, H., (2009). Predicting initial claims for unemployment benefits. Google Inc, 1(2009), pp.1-5.

Cross, P. and Bergevin, P. (2012). Turning Points: Business Cycles in Canada since 1926. [online] papers.ssrn.com. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2176382

D'Amuri, F. and Marcucci, J., 2017. The predictive power of Google searches in forecasting US unemployment. International Journal of Forecasting, 33(4), pp.801-816.

Drago, C. (2017). Measuring the Interest and the Attraction for the Heritage Over Time Using Social Big Data: The Case of Florence. [online] papers.ssrn.com. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3093991

Drago C. and Hoxhalli G. (2020) Measuring and Forecasting Job-Search in Italy using Machine Learning July 2020. Conference: 3rd International Conference on Advanced Research Methods and Analytics July 8 – 9, 2020 · Valencia, Spain. doi: 10.4995/CARMA2020.2020.11920

Fasulo, A., Naccarato, A. and Pizzichini, A., (2019). Nowcasting the Italian unemployment rate with Google Trends. Rivista Italiana di Economia Demografia e Statistica, 73(4).

Glimpse (2023) "Glimpse" available at: https://meetglimpse.com/

Google Trends. (2015). Google Trends. [online] available at: https://trends.google.it/trends/?geo=IT.

Hyndman R, Athanasopoulos G, Bergmeir C, Caceres G, Chhay L, O'Hara-Wild M, Petropoulos F, Razbash S, Wang E, Yasmeen F (2022). forecast: Forecasting functions for time series and linear models. R package version 8.19, https://pkg.robjhyndman.com/forecast/.

Hyndman R. J. Athanaspoulos G. (2023) Forecasting: Principles and Practice. (2023). [online] otexts.com. Available at: https://otexts.com/fpp3/.

Hyndman, R.J. and Khandakar, Y. (2008). Automatic Time Series Forecasting: the Forecast Package for R. Journal of Statistical Software, 27(3). doi:https://doi.org/10.18637/jss.v027.i03

Jia, Q., Guo, Y., Wang, G. and Barnes, S.J., 2020. Big data analytics in the fight against major public health incidents (Including COVID-19): a conceptual framework. International journal of environmental research and public health, 17(17), p.6161.

Jun, S.-P., Yoo, H.S. and Choi, S. (2018). Ten years of research change using Google Trends: From the perspective of big data utilizations and applications. Technological Forecasting and Social Change, 130, pp.69–87. doi:https://doi.org/10.1016/j.techfore.2017.11.009

Kourentzes N (2022). nnfor: Time Series Forecasting with Neural Networks. R package version 0.9.8, https://CRAN.R-project.org/package=nnfor

Mulero, R. and Garcia-Hiernaux, A. (2022). Forecasting unemployment with Google Trends: age, gender and digital divide. Empirical Economics. doi:https://doi.org/10.1007/s00181-022-02347-w.

Naccarato, A., Falorsi, S., Loriga, S. and Pierini, A., (2018). Combining official and Google Trends data to forecast the Italian youth unemployment rate. Technological Forecasting and Social Change, 130, pp.114-122.

Timmermann, A. (2006). Chapter 4 Forecast Combinations. [online] ScienceDirect. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1574070605010049.

Woloszko, N. (2020) Tracking activity in real time with Google Trends. (2020). OECD Economics Department Working Papers. doi:https://doi.org/10.1787/6b9c7518-en

# HOW YOGA BASED PRACTICES IMPROVE RESPONSIBLE RATIONAL DECISION- MAKING? EXAMINING THE ROLE OF EQUANIMITY, EMOTIONAL AWARENESS AND AVOIDANT DECISION-MAKING STYLE

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## ABSTRACT

## PURPOSE OF THE STUDY

Rational Decision making is vital in business practices and management. However, if the rational decision is directed towards self-serving goals this may become unethical and socially irresponsible, it threatens our planet. In this light, effective management education would be crucial in establishing an ethical foundation for management students who are future practitioners in the profession. When an individual faces a challenging situation or needs to achieve a complex goal, they often choose a shortcut that violates social responsibility because cognitive moral decisions are pricey (Crockett, 2013; Cushman, 2013). Neuro-cognitive research on stress shows that higher stress levels force individuals to take the path of shortcuts (Schwabe & Wolf, 2009; Youssef et al., 2012), and stressed individuals usually ignore detailed information and do not follow decision trees (Jordan et al., 2011), leading to irresponsible behaviour and focusing only on self-interest. Already various studies have shown that yoga-based practices reduce stress. However, more research should investigate enhancing responsible rational decision-making. To address this need, we propose that yoga-based practices (YBP) can improve responsible-rational decision-making style (RDMS) by enhancing equanimity (EQM) and emotional awareness (EA) and reducing avoidant decision-making style (ADMS).

## METHODOLOGY

We conducted two studies to test the hypotheses. Study 1, a survey(n=629), examined the relationships between EQM, RDMS, ADMS and EQ. Using the purposive sampling method, we sampled from students enrolled in the post-graduate management program in various premier business schools from India in 2022-23. While study 2, an experimental design(n=106), investigated the impact of YBP on EQM. The study used newly admitted first-year MBA students in a reputed university in the western part of India who enrolled in an eight-week compulsory credit course on yoga and positive psychology for managing self.

## FINDINGS

In study 1 the results from structural equation modelling supported the hypothesised model, equanimity has a positive effect on rational decision making mediated by emotional awareness and avoidant decision making. The result of study 2 supports that YBP enhanced equanimity and that YBP are effective, efficient, and sustainable training tools for improving responsible-rational decision-making style among management students.

## RESEARCH IMPLICATIONS /LIMITATIONS

**Theoretical Implication:** We contribute to the growing literature on ethical and responsible decision making.

**Pedagogical Implication:** This study contributes to the pedagogical literature that contemplative practices may benefit management students. It enhances their equanimity and improves their rational decision-making style through increasing emotional awareness and reducing avoidant decision-making style.

**Limitations:** Our study has several limitations, which suggest directions for future research. First, future research studies can examine the impact of YBP on other positive psychological outcomes. Second, our study is limited by traditional scientific methods (survey and experiment) to examine the impact of YBP. Qualitative studies which examine the experience of long-term yoga practitioners about making complex decision can illumine this phenomenon to a great depth and provide more nuanced picture.

## ORIGINALITY/VALUE

For the first time, this paper collected empirical support regarding yoga's impact on responsible decision-making. The work helps Business schools design a course that improves their decision-making capacity and makes them responsible global citizens.

*Keywords: Yoga based practices, Rational decision-making style, Equanimity, Emotional Awareness, Avoidant decision-making style, Business ethics.*

## REFERENCES

Crockett, M. J. (2013), Models of morality. In Trends in Cognitive Sciences (Vol. 17, Issue 8, pp. 363–366). https://doi.org/10.1016/j.tics.2013.06.005
Cushman, F. (2013), Action, Outcome, and Value: A Dual-System Framework for Morality. Personality and Social Psychology Review, 17(3), 273–292. https://doi.org/10.1177/1088868313495594

Dagar, C., Pandey, A., & Navare, A. (2022). How Yoga-Based Practices Build Altruistic Behavior? Examining the Role of Subjective Vitality, Self-transcendence, and Psychological Capital. Journal of Business Ethics, 175(1), 191–206. https://doi.org/10.1007/s10551-020-04654-7

Jordan, J., Sivanathan, N., & Galinsky, A. D. (2011). Something to Lose and Nothing to Gain: The Role of Stress in the Interactive Effect of Power and Stability on Risk Taking. Administrative Science Quarterly, 56(4), 530–558. https://doi.org/10.1177/0001839212441928

Kudesia, R. S., Pandey, A., & Reina, C. S. (2022). Doing More With Less: Interactive Effects of Cognitive Resources and Mindfulness Training in Coping With Mental Fatigue From Multitasking. Journal of Management, 48(2), 410–439. https://doi.org/10.1177/0149206320964570

Pandey, A., & Navare, A. v. (2018). Paths of Yoga: Perspective for Workplace Spirituality. In The Palgrave Handbook of Workplace Spirituality and Fulfillment (pp. 101–126). Springer International Publishing. https://doi.org/10.1007/978-3-319-62163-0_4

Schwabe, L., & Wolf, O. T. (2009), Stress prompts habit behavior in humans. Journal of Neuroscience, 29(22), 7191–7198. https://doi.org/10.1523/JNEUROSCI.0979-09.2009

Youssef, F. F., Dookeeram, K., Basdeo, V., Francis, E., Doman, M., Mamed, D., Maloo, S., Degannes, J., Dobo, L., Ditshotlo, P., & Legall, G. (2012), Stress alters personal moral decision making. Psychoneuroendocrinology, 37(4), 491–498. https://doi.org/10.1016/j.psyneuen.2011.07.017

# CHAID ANALYSIS TO DETERMINE PREDICTORS OF GOOD CORPORATE GOVERNANCE: THE CASE OF A 'STATE CAPTURED' COUNTRY

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## ABSTRACT

## INTRODUCTION

Good corporate governance (CG) is the responsibility of every entity, both private and public. With various elements that comes to play, it is important to understand which of these contribute the most to support good CG. Worldwide, central government departments are responsible for preparing and coordinating national policies and strategies. Since South Africa is ranked as the country with the lowest level of income equality in the world, with a Gini coefficient of 0.63 in 2022 (Worldpopulationreview.com, 2022), it is imperative for these departments to execute their mandate efficiently and effectively. Good CG is, thus, non-negotiable. Yet, as reported by the Auditor General (2022) less than 30% of these departments obtained clean audit outcomes. Furthermore, after the global financial crisis of 2008, the South African economy did not recover at the same rate as the rest of the world, mainly due to its internal struggles, that included the erosion of capacity at critical state entities to enable an era of state capture (Martin & Solomon, 2016). Supporting the drive for increased clean audit outcomes, that equates to good CG, this study aims to determine the predictors of central government departments' CG success. The result of the study may focus attention on the significant predictors of good corporate governance and the weaknesses that need support, in a setting that desperately needs improvement for the benefit of its society—from legislation, government officials, national department role-players, to governance-related documents and bodies.

## METHODOLOGY

The study used CHAID (Chi-squared Automatic Interaction Detection) analysis, a type of decision-tree technique (Kass, 1980), based on reported information over a 13-year period—before during and after state capture. The audit outcome was regarded as a fitting proxy for good CG (Bandiyono, 2021). Ten independent variables were obtained from legislation and the King Report on CG, supported by a comprehensive literature review of each. Data was gathered by means of analysing the annual financial statements, obtained from the Internet, of all central government departments from 2008/09

to 2020/21, resulting in data from 42 departments (potential 546 observations). Due to unavailable annual reports, amalgamations and department splits, the actual number analysed were 440.

Testing the correct classification, a training and test sample was analysed, obtaining 76.64% and leading to the first CHAID model. This model indicated two predictors, but due to the high outliers under fraud incidences, a fourth CHAID analysis was conducted where the outliers above the 95% level (>172 fraud cases), were removed, leading to a final CHAID.

## RESULTS

In this CHAID model, the analysis resulted in three terminal nodes. Only internal audit quality and incidences of fraud were found to be statistically significant predictors of audit outcome. First, internal audit quality (IAQ) (p-value = 0.000; Chi-square = 28.808; df = 2) has the most significant effect on the audit outcomes of departments in 83.2% of observations. The second predicting variable, where the entity had IAQ, is incidences of fraud (p-value = 0.016; Chi-square 11.537; df = 2). Where ≤ 2 fraud incidences were reported, 88.6% of entities received a good audit outcome. After removing the incidences of fraud outliers, the CHAID model revealed another statistically significant relationship, being the number of internal control (IC) weaknesses (p-value 0.034; Chi-square = 26.180; df=2). Although there is a relationship, the effect of the number of IC weaknesses on the number of fraud incidences is inconclusive.

## CONCLUSION

With IAQ being the most prominent predictor of good CG at central government departments in an uncertain environment is a noteworthy result, as other prominent drivers, such as, external auditing, risk management and audit committees, were outdone by this variable. A second predictor level of audit outcome is the number of fraud incidences which aligns with the quality of the internal audit function—less incidences when there is a quality function. After the number of incidences of fraud outliers were discarded the CHAID model rendered another a third predictor level of audit outcome, namely a sound internal control system (measured by the instances of internal control weaknesses) — less fraud incidences corresponded with less internal control weaknesses.

Although, other independent variables did not reveal statistically significant relationships, the descriptive statistics revealed interesting observations, such as the mean for external audit fees as a percentage of the budget is far below the norm found in international studies; poor legislative compliance result when the public sector operations are mandated by legislation; and the high existence of risk management committees and  strategies that do not align to the quality of risk management result.

Also, remarkable is the high existence of risk management committees and risk management strategies that do not align to the quality of risk management result. Meaning that legislative compliance is satisfied without proper operational effectiveness.

This study broadens the body of knowledge that audit outcome can be used as a proxy for good CG and confirms the primary role of IAQ as a predictor of good CG for central government departments in an uncertain environment. Where literature regard external auditing as a prominent element of good CG, this study elevates internal auditing in this role.

*Keywords: CHAID decision tree; corporate governance; state capture economies; audit outcome; public sector; internal audit; fraud incidences; internal control*

## REFERENCES

Auditor-General South Africa (AGSA). (2022b), "2020/21 Consolidated general report on national and provincial audit outcomes" available at: https://www.agsa.co.za-/Portals/0/Reports/ (accessed 11 November 2022).

Bandiyono, A. (2021), "Good government governance in the internal control system and audit opinion", Jurnal Akuntansi, Vol. 25 No.1, pp. 120-137.

Kass, G.V. (1980), "An exploratory technique for investigating large quantities of categorial data", Applied Statistics, Vol. 29 No. 2, pp. 119-127.

Martin, M.E., and Solomon, H. (2016), "Understanding the phenomenon of "State Capture" in South Africa, Southern African Peace and Security Studies, Vol. 5 No. 1, pp.21-39.

Worldpopulationreview.com. (2022), "Gini coefficient by country 2022", available at: https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country (accessed 1 December 2022).

# TACKLING GRAND CHALLENGES THROUGH THE NEW EUROPEAN BAUHAUS. INSIGHT FROM THE STEWARDSHIP THEORY

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## ABSTRACT

Modern data-driven economies and societies are increasingly pressed by the rise of dynamism, complexity, and urging global issues that need to be addressed or could lead to detrimental effects over the next decades (Bresciani *et al.*, 2022; Rehman *et al.*, 2022). Examples include demographic imbalances, poverty, hunger, climate change, and disruptive labor market developments brought on by ICT, with the consequent necessity to afford accessible education to everyone. Scholars usually refer to these issues as grand challenges (Bertello *et al.*, 2022; Colquitt & George, 2011), highlighting the necessity of scientific and technological advancements, as well as fostering changes in people's behaviors and approaches.

In this context, many studies have examined the connections between entrepreneurship and societal issues adopting institutional theories (Ferraro *et al.*, 2015; Gümüsay & Amis, 2020), and in particular investigating institutional logics, institutional labor, and organizational fields. However, being fundamentally constructivist, the institutional theory is agnostic as to whether the institutions that businesses and organizations adhere to (or help create) are really successful at preserving the environment and advancing human welfare. Moreover, two competing approaches are usually considered when investigating how to orchestrate a collaborative, coordinated, and sustained effort from a variety of diverse stakeholders which can be characterized by different possible sets of values, beliefs, or expectations (i.e., what are usually called institutional logics). Numerous researchers have indeed explained how to handle competing logics by analyzing the entrepreneurial orientation of hybrid organizations at the individual or organizational levels (Eiselein & Dentchev, 2020). In this sense, interesting insights could be provided by adopting the lens of the stewardship theory (Davis *et al.*, 2018), which assumes that individuals can recognize higher-order needs through pro-organizational behavior and thus will naturally align their interests with those of the organization and the institutional pressures to which it needs to adapt. In this sense, stewards are guided more by collective interests than personal ones and are therefore likely to favor long-term over short-term objectives (Hernandez, 2008).

Considering the above, in this study we aim to shed light on how to manage and mitigate possible paradoxical tensions when logics multiplicity is at stake by reconciling individuals' entrepreneurial orientation and the necessity of building a more beautiful, inclusive, and sustainable society. To do so,

we particularly investigate how the New European Bauhaus (NEB) has translated the European Green Deal into a tangible, positive experience in which everyone interested can participate and ask for collaborative action toward addressing the grand societal challenges of our times (European Commission, 2020). The NEB is indeed a creative and interdisciplinary initiative that connects the European Green Deal to our living spaces and experiences along three inseparable values (i.e., sustainability, aesthetics, and inclusiveness). Moreover, to do so, it invokes new innovative and entrepreneurial initiatives to be developed on multi-level, multidisciplinary, and participatory approaches. Indeed, because of their complexity, accomplishing these wicked problems necessarily requires collective and continuous efforts from various heterogeneous actors, such as policymakers, public institutions, companies, academia, and the broader civil society. Hence, by investigating secondary data (i.e., companies' websites and archival material), we focused our analysis on the 2022 NEB Prize winners as reflected by the four thematic axes of transformation identified during the NEB co-design phase (reconnecting with nature, regaining a sense of belonging, prioritizing the places and people that need it the most, shaping a circular industrial ecosystem and supporting life-cycle thinking). Moreover, we further considered how they were: (a) exemplary in terms of the three core values of the NEB (sustainability, inclusion, aesthetics); (b) exemplary in terms of the three main working principles of the NEB (i.e., participatory process, multi-level engagement, transdisciplinary approach); (c) innovative as compared to mainstream practices; (d) having high potential for transferability and replicability (e.g. of the methodology) to different contexts.

Based on the four thematic axes of transformation and on the criteria described above, the resulted prize winners are the following: (1) Reconnecting with the Nature strand: citizen driven ecological transition projects (bitches in Barcelona area, rural hubs in Paris area); protection and increasing of urban wildlife projects, using open source 3D printing technology and local materials in Berlin; Modular shutter gardens allowing everyone to have a garden at their windows in Poland; Biophotovoltaics for the use of people living in "innovative green" areas increasing local biodiversity, while producing energy in Spain.

(2) Regaining a sense of belonging strand: Polish rural architecture research project for the seek of sustainable renovation and cultural heritage; in Czech Republic there is a project that intends to convert vacant municipal property into a living network that includes shared spaces and is based on cooperative management; in Vienna (Austria) there is 10-cities district acting as a collectively own neighborhood, that operate and manage this co-housing-project that emphasizes affordability, inclusion, community and solidarity;

(3) Prioritizing the places and people that need it the most strand - the "care campus" in Belgium is designed for people with early-onset dementia, stroke-related disabilities, and somatic symptom

disorder; in Athens the academy promotes professional integration for vulnerable people, such as migrants, young locals with low income and marginalized women; in the north of Italy (Udine) there is a model to revive rural areas, unused spaces in villages can be converted into communal facilities, which establish a strong sense of community and could attract new residents; in Budapest small modular structures made from wood, fabric and steel contain various plants and flowers to reduce the impact of heat waves in urban areas; in Milan has been tested a tool for designers to support the decision making processes to enhance inclusive and accessible environments for everyone's diversities and disabilities.

(4) Shaping a circular industrial ecosystem and supporting life-cycle thinking strand - in Lisbon (Portugal) the awarded project aims to reduce the waste generated by toys, by promoting municipal community-driven circular networks, to collect and either repair and donate toys or recycle their materials; in Bucarest (Romania) the initiative  donates refurbished computers to help reduce the educational gap that disadvantages children from poor backgrounds; in Helsinki (Finland) to increase circularity and a positive impact in the fashion industry, the awarded project proposed an innovative textile material, a "bio-leather" made from flower petals; in Italy (Treia) the project intends to create a line of cardboard-based recyclable products for daily use; is borned in Amsterdam (Netherlands) a soap made out of human activity waste materials like wood ashes, used cooking oil and urine.

In this sense, we pinpoint how adhering to the NEB has fostered different stewardship dimensions (i.e., alignment of values within the organization and their broader ecosystem, refining the communication strategies, designing and shaping the organizational structure). Hence, we contribute to the literature on institutional theory and stewardship theory by showing how adhering to the NEB values and principles can greatly contribute to managing and aligning potentially conflictual objectives and logics, while holding managerial implications for organizations involved in addressing grand challenges at both the operational as well as strategic levels.

*Keywords: grand challenges; sustainable entrepreneurship; stewardship theory; New European Bauhaus*

## REFERENCES

Bertello, A., Bogers, M. L., & De Bernardi, P. (2022), 'Open innovation in the face of the COVID19 grand challenge: insights from the Pan-European hackathon 'EUvsVirus''. R&D Management, Vol. 52 No. 2, pp. 178-192.
Bresciani, S., Dabić, M., & Bertello, A. (2022). Collaborative technological development for addressing grand challenges: Opportunities, limitations, and new frameworks. Technology in Society, 102063.
Colquitt, J. A., & George, G. (2011). Publishing in AMJ—part 1: topic choice. Academy of Management Journal, Vol. 54 No. 3, pp. 432-435.
Davis, J. H., Schoorman, F. D., & Donaldson, L. (2018), 'Toward a stewardship theory of management.' In Business ethics and strategy (pp. 473-500). Routledge.
Eiselein, P., & Dentchev, N. A. (2020), 'Managing conflicting objectives of social enterprises', Social Enterprise Journal, Vol. 16 No. 4, pp. 431-451.

European Commission. (2020). Announcement A New European Bauhaus: op-ed article by Ursula von der Leyen, President of the European Commission. October, 2.

Ferraro, F., Etzion, D., & Gehman, J. (2015), 'Tackling grand challenges pragmatically: Robust action revisited', Organization studies, Vol. 36 No. 3, pp. 363-390.

Gümüsay, A. A., Claus, L., & Amis, J. (2020), 'Engaging with grand challenges: An institutional logics perspective', Organization Theory, Vol. 1 No. 3, 2631787720960487.

Hernandez, M. (2008) 'Promoting Stewardship Behavior in Organizations : A Leadership Model', Journal of Business Ethics, Vol. 80 No. 1, pp. 121–128.

Rehman, S. U., Bresciani, S., Yahiaoui, D., & Giacosa, E. (2022), 'Environmental sustainability orientation and corporate social responsibility influence on environmental performance of small and medium enterprises: The mediating effect of green capability.' Corporate Social Responsibility and Environmental Management, Vol. 29 No. 6, pp. 1954-1967.

Rosado-García, M. J., Kubus, R., Argüelles-Bustillo, R., & García-García, M. J. (2021), 'A new European Bauhaus for a culture of transversality and sustainability', Sustainability, Vol. 13 No. 21, 11844.

# CHAT-GPT, WHAT ARE THE ACCOUNTABILITY PERSPECTIVES?

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## ABSTRACT

The demand for accountability does not involve more just public administrations, political bodies and their relation with citizen, but also corporations, NGOs, their stakeholders and the society as a whole. The aim of the paper is to analyze the implications of emerging artificial intelligence tools from an accountability perspective. The authors utilize a qualitative methodology and evidence-based exploratory approach. The paper adopts an accountability perspective on the topic, but draws on a broader multidisciplinary literature, on the state of play and the crucial implications of ai, in order to properly frame the discussion in the technical realities and challenges at stake in ensuring accountability. The opportunities that absolutely should be captured are process streamlining, real-time information provision and efficiency. This could suggest a viable strategy to stimulate greater demand in the future from both companies and individual consumers. The authors recommend paying special attention to artificial intelligence, not only in the private sector. Ultimately, the forthcoming investments of large listed companies in their artificially intelligent tools should not be overlooked. One possible disadvantage is the use of a longitudinal dataset that could be overcome in the future. The main factor is to suggest innovative challenges, trends and economics opportunities and to lay the foundations for a future research agenda. This study is the first on ChatGPT from an accountability perspective.

## 1. INTRODUCTION

Technological innovation and accountability: an often-problematic relationship. The debate has dwelt on the repeated warnings to encourage higher levels of accountability, often resulting in the strengthening of verification and control processes and instruments and/or providing for additional prevention mechanisms. Accountability can also be a source of consensus and have an impact on improving the level of legitimacy of the decision-maker's actions (Pulejo, 2005). The last few decades have seen a race for AI: Microsoft has collectively invested more than USD 11 billion in OpenAI and rival Google has spent another USD 300 million in the start-up Anthropic. The most interesting question to understand the real value is how much it costs. Specifically, the demand for accountability does not involve more just public administrations, political bodies and their relation with citizen, but

also corporations, NGOs (Esposito & Antonucci, 2021), their stakeholders and the society as a whole. The paper adopts an accountability perspective on the topic, but draws on a broader multidisciplinary literature, on the state of play and the crucial implications of ai, in order to properly frame the discussion in the technical realities and challenges at stake in ensuring accountability. In order to fill this gap, this paper explores how ai can influence economic strategies and cooperative actions in five different sectors. In particular, the five sectors that give first clue are: Economics and Finance, Security, Education, Medicine and Automotive.

## 2. ACCOUNTABILITY: A CONCEPTUAL FRAME

The issue of ChatGPT (in general, AI) is loosely related to the concept of accountability. Despite its widespread use and numerous imprecise definitions (Sinclair, 1995), it generally implies the explication and justification of what one does or does not do (Bovens, 2007; Messner, 2009). The greater use of this term than in the past has implied the expansion of the concept itself and its categorisation. In this case, it is the link with the literature on social and environmental accounting. Indeed, the growing interest in social, ethical and ecological issues and the impact of private and public organisations on these areas has led to an increasing demand from society for greater accountability and transparency with regard to social and environmental issues (Shin, 2020).

In general, accounting and accountability systems have been shown to function as vectors for exporting innovations both in the public sector (Lapsley & Wright, 2004) and in the private sector. Tools for optimising performance are not only variables capable of influencing relationships in a context (Stacchezzini, 2012, p. 12) but also for making innovation accountable (Wynen *et al.*, 2014). The debate has therefore institutionalised itself around repeated warnings to encourage higher levels of accountability, often resulting in the strengthening of verification and control processes and tools and/or providing for additional prevention mechanisms. Especially in the last two decades, the international scientific community has been plagued by opposing concerns about so-called accountability overloads, which would have progressively resulted from a 'doggedness' in finding solutions to critical accountability gaps. In other words, Rock stated that "the accountability pendulum has swung so far in the direction of answering cries of deficit, that we have inadvertently caused a new style of accountability problem" (Rock, 2020, p. 2). Comprehensive and more structured is the concept of accountability. This issue expresses the duty of accountability of one subject towards another subject in order to responsibly and credibly define the relationship between planning - decision - action - control (Esposito, *et al.*, 2021). On one point, however, the efforts of the doctrine converge: "strengthening public accountability is emerging as a key strategy for improvement" (Joshi & Houtzager, 2012).

At a deeper level of analysis, central is the contribution of Bovens (2010), who, defining accountability as "a relationship between an actor and a forum, in which the actor has an obligation to explain and to justify his or her conduct, the forum can pose questions and pass judgment, and the actor may face consequences", provides two defining perspectives: accountability as a human virtue, a quality of the human being, in other words, a principle (accountable) to inspire corporate action and behaviour (organisational virtue) (Brescia, *et al.*, 2023); and accountability as a social, relational mechanism, which is established between two or more subjects bound by bonds of various kinds. The literature has highlighted numerous definitions of accountability that take on different connotations. According to Tamvada (2020), accountability emphasises the need for accountability on the part of those who have roles of responsibility towards society or parties interested in their work and actions. While Nicol (2018), is of the opinion that "Accountability is the ability to account for one's actions and to assume responsibility for results". However, Farneti (2004) argues that "assuming accountable conduct means starting one's actions with the identification of clear objectives, with the assignment of defined responsibilities in order to then be able, through management, to record and explain in a transparent and comprehensible manner how one has operated and what has been achieved, in relation to targets, standards or performance measures".

Further concerns have animated the scientific dialectic on the limits of accountability systems. For instance, Bovens et al. (2014) emphasised the so-called "problem of many eyes", i.e. the possibility that the accountability relationship is addressed to a multiplicity of subjects, with divergent needs and expectations and with different evaluation criteria; while the "problem of many hands" occurs when multiple subjects intervene in the decision and execution of activities, making it difficult to establish who actually has to be held accountable and for what. It is also well known that one of the properties of accountability consists in its ability to represent a kind of virtuous organisational pressure, incentivising organisations to improve processes and results and averting forms of anachronistic isolation from the social context of reference (Van Dijk & Vos, 2018). Roberts (2009) emphasised the need to design 'intelligent' accountability systems, avoiding the improbable pursuit of perfection in accountability systems, such as facing the challenges related to the application of artificial intelligence in public services (Bracci, 2023).

Instead, in a mutually exclusive dynamic (Rock, 2020, p. 229), the functioning of one accountability mechanism precludes (or should preclude) another. Other accountability mechanisms have a 'staged' manifestation dynamic, operating one as a precondition of the others (appeal only after the first instance judgment has been handed down). Accountability mechanisms may also be interdependent in the sense that, interacting and intersecting at several levels, they result in an 'adjusted' final outcome. Another possible mode of accountability relationship is cooperative, where several levels of authority

assist and collaborate and, together, complete the accountability equation by moving towards one or more common goals.

## 3. RESEARCH DESIGN AND RESEARCH QUESTIONS (RQS)

In order to better understand the the implications of emerging AI tools from an accountability perspective, we applied the qualitative method of "exploratory case sampling" (Patton, 2002). The authors explored a qualitative methodology and an evidence-based exploratory approach. The utilisation of a strategy inspired by the selection and review of previous research facilitates the acquisition of multiple research trajectories (Khan et al. 2003). A possible disadvantage is the use of a longitudinal dataset, which could be overcome in the future.

The research questions investigated in the article and thoroughly explored in the last chapter can be summarized in the following two:

RQ1: The AI tools revolution would only be at the beginning, but will it be accountable?

RQ2: Does the ultimate decision of the human shield it from risk and accountability?

Although adopting an accountability perspective, the article draws on broader multidisciplinary research in order to adequately ground our discussion in the technical realities and challenges associated with accountability assurance. The expectation was to find inconsistent data in the research, thus careful selection of the type of review process was required to take this into account. Moreover, this latter aspect is particularly critical for meaningful oversight in this context and should not be overlooked.

As we will discuss below, there is the potential for new and unexpected developments in different areas examined.

## 4. SECTORS PROVIDING THE FIRST CLUES

Technological progress is inescapable and humans can only suffer it, or accept and ride it. And this is also true in the case of cognitive automation machines, despite the fact that progress in this very area has been extremely bumpy. Artificial intelligence has a lot of potential in different sectors and fields of application.

*4.1 Economics and Finance*

AI, not as of today, is playing a leading role in the markets. The sudden surge in popularity triggered by the release of OpenAI's ChatGPT has convinced most investors that artificial intelligence may have reached its golden age (Furman and Seamans, 2019). And this has triggered a race among tech giants on how to capitalise on the new phenomenon so much so that major regulations have been enacted to

regulate it (Geerling *et al.*, 2023). However, it is precisely the high speed of innovation that creates problems. These are situations that have been proven to exist, given the difficulty of intercepting them, in virtual markets. In this sense, one can think of so-called reinforcement learning. For a company, the ability to reduce errors, save money and be faster is vital. AI, however, has further applications such as process optimisation, improving efficiency and consuming less, containing expenses, anticipating production difficulties and maintenance (Varian, 2018). All this means the ability to remain competitive in the market, and it is clear that this applies to essentially all sectors that compose the economy (Furman and Seamans, 2019).. This aspect alone makes it clear how crucial artificial intelligence is for the industrial system, for a manufacturing industry (Muller and Mezhuyev, 2022) that wants to continue to compete and excel against other economic powers (Ruiz-Real *et al.*, 2021). Let us also not forget services and public administration, which, equally, could benefit significantly from the adoption of AI solutions. The race for an increase in performance due to AI, whether it is exercised on the scale of the individual company or whether we think of the competitiveness of entire countries, has therefore become a question of access to AI (Wilson *et al.*, 2022).

There are also cross-sectoral uses of AI. To support resource planning and management decisions. A system that, to an increasing extent, will be made up of data-driven companies, capable of using data to systematically unleash their creativity. If large companies fully understand its value for their strategies (Esposito *et al.*, 2023), it may also be a cross-sectoral use of AI. To support resource planning and management decisions. The context is not yet ideal (Svetlova, 2022).

*4.2 Security*

Artificial intelligence for cybersecurity could be a double-edged sword. It is already used by cyber criminals to be faster and more effective. At the same time, it is an integral part of the cyber-security practices of some large companies. Thus, very effective customised messages can be written for each victim with little knowledge of the target language.      No more spam mails that appear to come from banks or other trustworthy parties, but which, being ungrammatical, turn out to be bogus with ease. And if ChatGPT's filters can now block some malicious use, it is only a matter of time before the same kind of technology gives rise to 'open' tools, freely usable by criminals, for these and other uses, such as automated contacts with ransomware victims (Dwivedi *et al.*, 2023).

To all these risks and dangers, the EU intends to propose the AI Act: it is a law equally applicable in all EU Member States that aims to regulate a subject as vast as AI. Since it has not yet come into force, European states have acted differently. For example, in Italy, the privacy authority suspended ChatGPT until the end of April for violation of privacy regulations. In addition, France Germany and Ireland have moved in this direction, while England has announced a regulatory plan. In the United

States, OpenAI has already been sued twice, while Canada has opened an investigation into the company.

Therefore, the problem arises of assigning legal responsibility in the event of damage caused by the application (Esmailzadeh, 2023). Therefore, when the AI programme creates a work, do the rights of the work tend to be attributed to the author of the programme? If the question arises under existing legislation, then with a necessary effort of interpretation the already existing rules on civil accountability and, in particular, producer accountability will apply (Chen *et al.,* 2019). Firstly, the exercise of the right of limitation reduces the processing activities allowed to the data controller to mere data storage, blocking all the rest of the abstractly possible operations, and in this way re-establishes a balance between the positions of data controller and data subject. Secondly, the exercise of informed consent, which may represent an embryonic statute of the discipline of the algorithm (Bertino *et al.,* 2021).

### 4.3 Education

Considering the proliferation of the use of generative artificial intelligence, understanding how the underlying algorithms work becomes not only a crucial skill for the future working world, but also for social and civic participation. ChatGPT in fact provides answers to precise questions and solves problems using multiple sources and thus with texts that are difficult to identify as copied (Su *et al.,* 2023). So much so that the immediate reaction, almost everywhere, is to ban its use at school. As often happens when faced with new technologies, the easiest way is to prohibit. Instead, there are some teachers who have not given up exploring the opportunities offered by machine learning software. In order to understand its opportunities, but above all to unlock its secrets and to unravel the workings of a technology that today's students will inevitably come to terms with in tomorrow's world: not so much as a substitute for carrying out specific tasks, but as a support for their profession and as an enabler of innovative solutions to problems they face (Lo, 2023). The youngsters will thus be able to better understand the still very crude and unsatisfactory state of ChatGPT's answers to their questions, a sign of a technology that still needs to be refined. the task of teachers is to educate the next generation of consumers (Paul *et al.,* 2023) and technology creators in the critical use of technology itself: knowing how to use it is not only a technical matter, but also being aware of the limits and risks. These signals should spur the savviest companies into an arms race, based precisely on AI. In this case also knowing how to ask the right questions to get the right answers.

### 4.4 Medicine

Among its many possible applications, just think of the new level of personal well-being introduced by artificial intelligence. Consider the new diagnostic tools it makes available to doctors, of the possibility it gives us, for example, to work in a completely new way on genomic data, on the targeting of a

chemotherapeutic drug, on the modelling of new molecules. AI could effectively enter the clinical management of patients. This is underlined by a study (Yagi et al., 2023) that analyses the treatment of people requiring intensive care due to sepsis. The transcription, together with data from the patient's medical record, including recent analysis results, is passed to a machine learning model that produces notes summarising important information gathered during the consultation (Sparrow and Hatherley, 2020).

AI and its algorithms will not replace the doctor, but will increasingly support him in his work. The first applications have already begun to knock overwhelmingly at the door of medicine and healthcare: the first drugs designed entirely with AI can be glimpsed. In the meantime, according to the Observatory on Digital Healthcare of the Milan Polytechnic (Milan Polytechnic, 2023), 27% of healthcare facilities are already experimenting with tools that analyse images and signals for diagnostic or treatment purposes with artificial intelligence; one doctor in four (23%) and 14% of nurses use them: we are talking about ECGs, CT scans, X-rays, angiographies that exploit algorithms to improve the accuracy of diagnoses. But the prediction for the future is that more than one in two healthcare workers will use them. Less widespread at the moment are the other types of applications that rely on the analysis of structured health data such as those in the electronic health record to make more accurate treatment choices or focus on preventive medicine: here, use is so far limited to about one doctor in ten, but in the future, it will become about 50 per cent.

*4.5 Automotive*

The paths of self-driving cars and artificial intelligence have crossed. For instance, in functions for autonomous driving, with a focus on image processing for computer vision, a valuable quality for cars that aspire to drive themselves. In this scenario, the automotive industry will be the sector where these new technologies will immediately take centre stage. Driver assistance systems will become industrial test beds to see whether the innovation introduced by ChatGPT will have the robustness to impose itself on a large scale, bringing out not only the surface signals, but also the structural consequences of the encounter between algorithms and the emerging paradigm of software defined vehicle (Du, 2023). DriveGPT, generative artificial intelligence, is already on-board thousands of cars with the task of learning how humans drive, and then designing autonomous driving systems capable of self-learning from human behaviour (Pillai, 2022).

# 5. CONCLUSION. AI: ARTIFICIAL INTELLIGENCE OR ACCOUNTABLE INNOVATION?

Accountability achieves higher levels of effectiveness the more answerability (ability to inform and justify) and enforcement (ability to control and evaluate) tend to converge (Rixon, 2010; Ackerman,

2004). The pursuit of this convergence requires the adoption of a dialogical perspective, through which demand and supply of accountability can intersect (Blackburn et al., 2014; Dillard & Vinnari, 2019). The authors recommend paying special attention to artificial intelligence, not only in the private sector. Consequently, community members, and among them, the stakeholders directly of a public institution, have a responsibility to actively participate in defining the reporting and evaluation criteria around which effective accountability mechanisms can be built. Stakeholders are the ones who have to decide how to distribute the benefits, which, if crossed with virtuous accountability processes, can contribute to the regeneration of public value (Esposito and Ricci, 2015). The notion of accountability takes on two meanings. The first concerns virtue, understood as a normative concept, by which the behaviour of public actors must be inspired; the second perspective is the mechanism that opens up issues of planning, development and preservation of levels of public accountability (Esposito & Ricci, 2020).

An innovation only becomes integrated into the corporate culture when it is part of the vision and strategy. In other words, if the goal is for artificial intelligence to truly accelerate business, it must be thoroughly understood. Indeed, it must become a new common way of working in the company. In fact, the forthcoming investments of large listed companies in their artificially intelligent tools should not be overlooked. Hence, to achieve this, it must be part of a vision that looks to the future. Chat-GPT is one of the pillars of human development, because machines can be an integral part of human resources in companies. Ultimately, this could suggest a viable strategy to stimulate greater demand in the future from both companies and individual consumers. Besides, algorithms have neither opinions nor ethics: it is we who have them and pass them on to the machines.

A possible risk is a person intentionally develops and/or uses AI systems to manipulate the market. In this case, the fact that the unlawful conduct occurs through artificial intelligence does not differentiate the case from that in which a normal algorithm is exploited. The presence of intent and causation theoretically allows the offence to be committed. The discourse is rather similar in another hypothesis: the malfunctioning of an AI system. This circumstance, on the one hand, leads to manipulation, which, on the other hand, has not been intentionally distorted or carelessly constructed. In this case, no criminal liability is foreseeable. However, an administrative or civil penalty may be imposed. An opportunity that, to materialise, requires the existence of negligence (or gross negligence) on the part of those who set up the system that gave rise to the problem. The authors suggest knowing and sharing the dangers of monopolistic concentration, inaccuracy and the pursuit of evil ends. AI for the future, not to follow it, but to change it. The phenomenon of the heterogenesis of ends (unintended consequences of intentional actions) is peculiar in this respect. In concrete terms, accountability must be taken into account at the beginning of processes. In other words, if it is not possible to foresee all algorithmic results emerging from the data, we must expect even unintended consequences.

*Keywords: Artificial Intelligence (AI), ChatGPT, accounting, auditing, accountability, accountable innovation.*

## REFERENCES

Ackerman, J. (2004). "Co-governance for accountability: beyond "exit" and "voice"", World Development, 32(3), pp. 447-463.

Almagtome, A. H. (2021), "Artificial Intelligence Applications in Accounting and Financial Reporting Systems: An International Perspective", In Handbook of Research on Applied AI for International Business and Marketing Applications, IGI Global, pp. 540-558.

Alshater, M., (2022). Exploring the Role of Artificial Intelligence in Enhancing Academic Performance: A Case Study of ChatGPT. SSRN Electronic Journal.

Bertino, E., Kantarcioglu, M., Akcora, C. G., Samtani, S., Mittal, S., & Gupta, M. (2021). AI for Security and Security for AI. In Proceedings of the Eleventh ACM Conference on Data and Application Security and Privacy (pp. 333-334).

Blackburn, N., Brown, J., Dillard, J., & Hooper, V. (2014). "A dialogical framing of AIS– SEA design", International Journal of Accounting Information Systems, 15(2), pp. 83-101.

Bovens, M. (2010). "Two concepts of accountability: accountability as a virtue and as a mechanism", West European Politics, 33(5), 946-967.

Bovens, M., Schillemans, T., & Goodin, R.E. (2014). "Public Accountability". In The Oxford Handbook of Public Accountability, edited by M. Bovens, R.E. Goodin, and T. Schillemans, 1-20, Oxford University Press, Oxford.

Bracci, E. (2023). "The loopholes of algorithmic public services: an "intelligent" accountability research agenda", Accounting, Auditing & Accountability Journal, 36(2), 739-763.

Brescia, V., Esposito, P., Amelio, S. and Biancone, P.P., (2023). "Rethinking green investment and corporate sustainability: the south European countries experiences during the COVID-19 crisis", EuroMed Journal of Business.

Chen, T., Liu, J., Xiang, Y., Niu, W., Tong, E., & Han, Z. (2019). Adversarial attack and defense in reinforcement learning-from AI security view. Cybersecurity, 2, 1-22.

Dillard, J., & Vinnari, E. (2019). "Critical dialogical accountability: From accounting-based accountability to accountability-based accounting", Critical Perspectives on Accounting, 62, 16-38.

Donghee Shin (2020) User Perceptions of Algorithmic Decisions in the Personalized AI System:Perceptual Evaluation of Fairness, Accountability, Transparency, and Explainability, Journal of Broadcasting & Electronic Media, 64:4, 541-565

Du, H., Teng, S., Chen, H., Ma, J., Wang, X., Gou, C., ... & Wang, F. Y. (2023). Chat with chatgpt on intelligent vehicles: An ieee tiv perspective. IEEE Transactions on Intelligent Vehicles.

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., ... & Wright, R. (2023). "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. International Journal of Information Management, 71, 102642.

Esmailzadeh, Y. (2023). Potential Risks of ChatGPT: Implications for Counterterrorism and International Security. International Journal of Multicultural and Multireligious Understanding (IJMMU) Vol, 10.

Esposito P., and Antonucci G., "NGOs, corporate social responsibility and sustainable development trajectories in a new reformative spectrum: 'New wine in old bottles or old wine in new bottles?'", Corporate Social Responsibility and Environmental Management, (CSREM).

Esposito P., Ricci P., (2020). "Cultural organizations, corporate social responsibility and stakeholder engagement in virtual museums: a multiple case study", Corporate Social Responsibility and Environmental Management (CSREM), 28(2), 953– 964.

Esposito, P., and Ricci, P. (2015). "How to turn public (dis)value into new public value? The re-conversion seized Mafia assets: Evidence from an Italian perspective", Public Money & Management, 35(3), 227-231.

Esposito, P., Braga, A., Sancino, A. and Ricci, P., "The strategic governance of the digital accounting environment: insights from virtual museums", Meditari Accountancy Research, Vol. 31 No. 2, pp. 366-380.

Esposito, P., Doronzo, E., & Dicorato, S. L. (2023). "The financial and green effects of cultural values on mission drifts in European social enterprises", Business Strategy and the Environment, 32(1), 1-29.

Farneti F. (2004) Il progressivo affermarsi del principio di accountability negli enti locali. Le implicazioni di tipo manageriale, Franco Angeli, Milano.

Furman, J., & Seamans, R. (2019). AI and the Economy. Innovation policy and the economy, 19(1), 161-191.

Furman, J., & Seamans, R. (2019). AI and the Economy. Innovation policy and the economy, 19(1), 161-191.

Geerling, W., Mateer, G. D., Wooten, J., & Damodaran, N. (2023). ChatGPT has aced the test of understanding in college economics: Now what? The American Economist, 05694345231169654.

Hasan, A. R. (2022), "Artificial Intelligence (AI) in Accounting & Auditing: A Literature Review", Open Journal of Business and Management, Vol. 10, pp. 440-465.

Joshi, A., & Houtzager, P.P. (2012). "Widgets or Watchdogs?", Public Management Review, 14(2), 145-162.

Kecht, C., Egger, A., Kratsch, W. and Röglinger, M., (2023), "Quantifying chatbots' ability to learn business processes", Information Systems, Vol. 113, No. 102176.

Kommunuri, J. (2022), "Artificial intelligence and the changing landscape of accounting: a viewpoint", Pacific Accounting Review, Vol. 34 No. 4, pp. 585-594.

Lapsley, I., & Wright, E. (2004). "The diffusion of management accounting innovations in the public sector: a research agenda", Management Accounting Research, 15(3), 355-374.

Li, J. H. (2018). Cyber security meets artificial intelligence: a survey. Frontiers of Information Technology & Electronic Engineering, 19(12), 1462-1474.

Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. Education Sciences, 13(4), 410.

Milan Polytechnic, (2023). Observatory on Digital Healthcare 2022-2023, available at: https://www.osservatori.net/it/ricerche/osservatori-attivi/sanita-digitale (accessed on 17 May 2023)

Mueller, C., & Mezhuyev, V. (2022). AI Models and Methods in Automotive Manufacturing: A Systematic Literature Review. Recent Innovations in Artificial Intelligence and Smart Applications, 1-25.

Nicol, O. (2018). No body to kick, no soul to damn: Responsibility and accountability for the financial crisis (2007–2010). Journal of business ethics, 151(1), 101-114.

O'Leary, D. E. (2022), "Massive data language models and conversational artificial intelligence: Emerging issues", Intelligent Systems in Accounting, Finance and Management, Vol. 29 No. 3, pp. 182– 198.

Oxford Analytica (2023), "Commercial use of ChatGPT requires caution", Expert Briefings.

Paul, J., Ueno, A., & Dennis, C. (2023). ChatGPT and consumers: Benefits, pitfalls and future research agenda. International Journal of Consumer Studies.

Pavlik, J. V. (2023), "Collaborating with ChatGPT: Considering the Implications of Generative Artificial Intelligence for Journalism and Media Education", Journalism & Mass Communication Educator, Vol. 0 No. 0.

Pillai, R., Sivathanu, B., Mariani, M., Rana, N. P., Yang, B., & Dwivedi, Y. K. (2022). Adoption of AI-empowered industrial robots in auto component manufacturing companies. Production Planning & Control, 33(16), 1517-1533.

Rixon, D. (2010). "Stakeholder engagement in public sector agencies: Ascending the rungs of the accountability ladder", International Journal of Public Administration, 33(7), 347-356.

Roberts, J. (2009). No one is perfect: The limits of transparency and an ethic for "intelligent" accountability, Accounting, Organizations and Society, 34(8), 957-970.

Rock, E. (2020). Measuring accountability in public governance regimes. Cambridge University Press.

Ruiz-Real, J. L., Uribe-Toril, J., Torres, J. A., & De Pablo, J. (2021). Artificial intelligence in business and economics research: Trends and future. Journal of Business Economics and Management, 22(1), 98-117.

Shin D., (2020). "User Perceptions of Algorithmic Decisions in the Personalized AI System:Perceptual Evaluation of Fairness, Accountability, Transparency, and Explainability", Journal of Broadcasting & Electronic Media, 64:4, 541-565.

Sparrow, R., and Hatherley, J. (2020). High hopes for "Deep Medicine"? AI, economics, and the future of care. Hastings Center Report, 50(1), 14-17.

Stacchezzini, R. (2012). "Accounting e potere. Il contributo interpretativo del governmentality framework", FrancoAngeli, Milano.

Stokel-Walker C. (2022), "AI bot ChatGPT writes smart essays - should professors worry?" Nature.

Stokel-Walker, C. e Van Noorden, R., (2023), "What ChatGPT and generative AI mean for science", Vol. 614 No. 7947, pp. 214–216.

Su, J., Ng, D. T. K., & Chu, S. K. W. (2023). Artificial intelligence (AI) literacy in early childhood education: The challenges and opportunities. Computers and Education: Artificial Intelligence, 4, 100124.

Svetlova, E. (2022). AI meets narratives: the state and future of research on expectation formation in economics and sociology. Socio-economic review, 20(2), 841-861.

Tamvada, M. (2020). Corporate social responsibility and accountability: a new theoretical foundation for regulating CSR. International Journal of Corporate Social Responsibility, 5(1), 1-14.

Van Dijk, F., & Vos, G. (2018). "A Method for Assessment of the Independence and Accountability of the Judiciary", International Journal for Court Administration, 9(1), 222-236.

van Dis, E. A. M., Bollen, J., Zuidema, W., van Rooij, R. and Bockting, C. L., (2023), "ChatGPT: five priorities for research", Nature, Vol. 614 No. 7947, pp. 224-226.

Varian, H. (2018). Artificial intelligence, economics, and industrial organization. In The economics of artificial intelligence: an agenda (pp. 399-419). University of Chicago Press.

Wilson, M., Paschen, J., & Pitt, L. (2022). The circular economy meets artificial intelligence (AI): Understanding the opportunities of AI for reverse logistics. Management of Environmental Quality: An International Journal, 33(1), 9-25.

Wynen, J., Verhoest, K., Ongaro, E., & Van Thiel, S. (2014). "Innovation-Oriented Culture in the Public Sector: Do Managerial Autonomy and Result Control Lead to Innovation?", Public Management Review, 16(1), 45-66.

Yagi, M.; Yamanouchi, K.; Fujita, N.; Funao, H.; Ebata, S. (2023). Revolutionizing Spinal Care: Current Applications and Future Directions of Artificial Intelligence and Machine Learning. J. Clin. Med., 12, 4188.

Zhai, X. (2022), "ChatGPT User Experience: Implications for Education", SSRN Electronic Journal.

# A BIBLIOMETRIC ANALYSIS ON FALSE ACCOUNTING OF LISTED COMPANIES

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## ABSTRACT

The aim of this research is to provide an overview of the state of the art of research on false accounting as applied to listed companies, highlighting the different strands and main gaps in the current literature and providing insights for future research. A bibliometric method was used to analyse the characteristics and the content of articles published in international journals. The results show that research into the misrepresentation of listed companies is struggling to get off the ground. Ongoing research, although slowly increasing, is localised. Most papers address the reasons why companies incur false financial statements, but there are other aspects that need further investigation or validation to open new directions for future research. The study has some limitations, mainly related to the adoption of the bibliometric method. In fact, the sample only includes articles published in international journals but does not take into account books and chapters. This leads to the exclusion of a significant part of the existing literature and other relevant contributions to the field. Practices to limit false accounting are spreading rapidly. The field is particularly interesting given the spin-offs in all areas of the economy. However, the literature is clearly not exhaustive and there is no comprehensive and systematic review of the state of the art on the subject.

## 1. INTRODUCTION

International literature has highlighted for an extended time that the demand for greater accountability involves not only companies, but also politics, non-profit organisations and public administrations, and their relationship with stakeholders and society as a whole (Esposito & Ricci, 2020). In particular, it has been shown that the increased demand for accountability and transparency can incentives for uptake of an overlooked mode of misleading disclosures: falsification, fraud and misrepresentation of accounts. This has led to a growing interest in reporting practices that are also useful tools for managing, planning and controlling activities (Unerman *et al.*, 2007). Many terms have been used to identify these tools: false accounting, fraudulent financial reporting, accounting fraud, false statement of accounts and misrepresentation of accounts. Despite some initial differences, these terms have become interchangeable; in fact, in this study, they are used to express the same concept.

The research study is structured over a number of 5 paragraphs.

In the following paragraph, the concept of false accounting is reviewed and an examination is provided of the evolution of its various facets: fraudulent financial reporting, accounting fraud, false statement of accounts and misrepresentation of accounts. The aim is to frame the theoretical framework, describe the advancement of knowledge and identify the main lines of development of the doctrinal debate.

In the third paragraph, as a continuation of the theoretical framing part of the research problem, details are given on bibliometric analysis with the definition of the crucial steps to be able to best identify articles.

In the fourth paragraph, the main results are described in order to be able to compare different bibliographic sources. By surveying the most significant articles and adopting a unified and systemic view of the relevant dimensions and variables that the doctrine has attributed to the concept of false accounting, the article emphasises the implications. The aim of this research is to provide an overview of the state of the art of research on false accounting as applied to listed companies.

The fourth and final chapter offers a review of some of the main dissemination themes relating to specific issues relevant to research trajectories. More specifically, the topics are: false accounting, fraudulent financial reporting, accounting fraud, false statement of accounts and misrepresentation of accounts.

## 2. THEORETICAL FRAMEWORK

A literature review serves several purposes, e.g. to build a basis and conceptualise a study, to furnish a point of reference for the evaluation of findings or to gain an overview of the false accounting.

*2.1 False accounting*

An important aspect of this analysis is that it examines the ways in which companies manipulate regulated financial information (Harris & Bromiley, 2007). False accounts are a demonstrably different phenomenon from linguistic obfuscation or selective disclosure, emphasizing the need for greater understanding of how firms may conceal strategic misstatements (Passas, 2001). Firms making false accounts may employ sophisticated temporal strategies for manipulating external performance ratings to maintain perceived advantage while managing detection risk (Callery and Perkins, 2021). In general, this type of illegal activity is attractive to fraudsters if they can anticipate the release of false information (Ullah *et al.*, 2014).

*2.2 Fraudulent Financial Reporting*

Fraudulent Financial Reporting is described by Wallace (1995) as a scheme designed to deceive, accomplished with fictitious documents and representations. While, Dalnial *et al.* (2014) defines FFR as

a financial statement that contains falsifications of figures which do not represent the true scenario. It is defined as fraud committed by management of an enterprise by having miss presenting in financial report which of course puts the investors and other related parties in disadvantages. This intentional mistake due to financial condition of an enterprise is done by making miss presenting report or other mistakes from numbers or revelation of financial report to dechieve financial report users (Kaminski et al., 2004). Indeed, Beasley *et al.* (2000) observed that when top management controls are weak (e.g. the control environment), a significant condition exists that could enable fraudulent financial reporting.

*2.3 Accounting fraud*

Fraud generally covers various ways or skills selected by an individual to get profit from other parties by doing incorrect representation (Lokanan, 2019). "The use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organization's resources or assets" (ACFE, 2010). Illegally taking assets by a perpetrator with authority to manage or supervise the assets (Tuanakotta, 2012). Indeed, the debate in academic literature on high profile fraud mainly concerns accounting misstatements, management behavior, fraudulent financial reporting, and internal control (Soltani, 2014).

*2.4 False statement of accounts*

The shareholders of the company get their return of capital based on the profits declared by the manager (Bai *et al.*, 2008). When the manager is suspected of providing false accounting reports and false information on the company's performance, the shareholders must exercise their right to verify the accounting information (Wu and An, 2014). There are also for Spathis *et al.* (2002) other corporate forgeries that can be classified as those committed by insiders on behalf of the company (violations of government regulations, e.g. tax, securities, safety and environmental).

*2.5 Misrepresentation of accounts*

The responsibilities of the accounting prosecutor are to exercise the power to arrest, investigate and prosecute accounting criminals, to exercise the power to sue and represent the state for civil damages, to exercise the power to publicly prosecute false accounting offences, to exercise the right to control illegal acts of the accounting administration, and to exercise the right to control the trial by national courts (Samuel, 2021). Competitors are likely to investigate misleading financial information to infer industry trends, future demand and company-specific cost functions (Leeke, 2020). In essence, untruthful financial statements paint a rosy picture of the industry and cause people to make unexpected or distorted decisions, decisions they would not have made had the data been misrepresented (Li, 2016).

## 3. METHODOLOGY

Bibliometric analysis is a systematic and rigorous method increasingly used in management and accounting studies (e.g., Ramos-Rodríguez and Ruíz-Navarro, 2004; Riviezzo et al., 2015).

*3.1 Identification of papers*

The review was undertaken considering only articles published in international academic journals. Books and book chapters were therefore excluded, even if they are by relevant authors and thus represent an important contribution to the topic of social and environmental reporting in the public sector (Usman Malik & Esposito, 2022). Introductions to special issues were included in the dataset only if they were comparable to an article.

In order to identify articles, Scopus, Web Sciences and Google Scholar were examined for the entire period, so no time limit was set since, as pointed out above, the topic considered is relatively new.

For the purposes of the search, the following keywords were entered to check for their presence in the titles, abstracts and keywords:

1. false accounting;
2. fraudulent financial reporting;
3. accounting fraud;
4. false statement of accounts;
5.  misrepresentation of accounts.

Subsequently, the search was also carried out by substituting alternative words, e.g. fake instead of false. In addition, special care was taken to ensure that any change of meaning did not lead to deviations from the focus of the study. For example, articles concerning public or non-profit companies and also publications concerning voluntary reporting were not included.

In order not to overlook articles previously set aside, a further research phase was carried out. Thus, the final sample consists of 274 articles.

*3.2 Method*

Firstly, the analysis aimed to ascertain the fluctuation in publication activity (i.e. the number of publications per year), the journals and the authors who made the greatest contribution to the development of the research field in question (i.e. the number of publications per journal and per author). To determine the most published authors, all of them were taken into account, not just the first ones. Then, the citation pattern was highlighted to identify the most influential works and authors. The further stage shifted to the contents of the sample of articles, which were coded according to the seven categories, the selection of which took into account previous similar studies (e.g. Guthrie et al., 2012; Cuozzo et al., 2017).

1. Type of disclosure, i.e. the area in which falsifications are dealt with.

2. Epistemological orientation, i.e. theoretical or empirical. Theoretical articles, which include literature reviews, are personal analyses and comparisons of positions characterised mainly by the development of hypotheses, opinions. Conversely, if papers aim to refute or confirm existing models and theories, they belong to the second group since they are based on empirical data. They use an inductive approach to provide an interpretation of what is seen. Case studies fall into this category.

3. Methodology, for the purposes of this study, only three macro-groups were identified (qualitative, qualitative, mixed approach). Due to the difficulty of accurately classifying works considered with a single research method, the choice was made on the three macro-groups mentioned.

4. Theoretical framework and models, i.e. the theory and models on which the studies are based. It is divided into three groups: no proposal, applies or considers previous ones, proposes a new model.

5. Sample, aims to highlight the type of public organisation analysed. Specifically, listed companies were scrutinised.

6. Context, i.e. the regional focus and jurisdiction of the study undertaken. The regional focus is divided into five regions: Europe, North America, Asia, Oceanian and Other.

7. Aims and Key Findings, a category that seeks to identify the research questions and findings of each study to highlight recurring issues.


## 4. RESULTS AND FINDINGS

The articles were selected over a period of time from 2001 to 2023. This time range was chosen for two reasons: first, to make a discriminating character such as the date unique and, secondly, to harmonize the publication dates. But they are rather scarce until 2008, when their publication starts to become systematic, although the number is still very small and the trend rather unstable. This field of research is still in its 'infancy', despite numerous corporate scandals.

Among the journals that published articles with the aforementioned characteristics, five - The Accounting Review (127), Journal of Accounting Research (46), Accounting, Auditing & Accountability Journal (39), Journal of Business Finance & Accounting (38), Abacus (20) and Accounting Forum (17) - highlight a higher number of publications. As can be seen (Table 1), the predominant journals are those dealing with accounting.

The findings (Figure 1) are not surprising at all, on the contrary they confirm that there are still few experimental studies based on fillings, while reviews play a fundamental role in ensuring that research does not fade away.

| | False accounting | Fraudulent financial reporting | Accounting fraud | False statement of accounts | Misrepresentation of accounts | Tot |
|---|---|---|---|---|---|---|
| Journal of Accounting Research | 3 | 10 | 28 | 0 | 0 | 41 |
| Accounting, Auditing & Accountability Journal | 1 | 13 | 16 | 0 | 1 | 31 |
| Accounting Forum | 2 | 6 | 9 | 0 | 0 | 17 |
| Journal of Business Finance & Accounting | 2 | 10 | 26 | 0 | 0 | 38 |
| Abacus | 1 | 13 | 6 | 0 | 0 | 20 |
| The Accounting Review | 1 | 60 | 67 | 0 | 1 | 127 |

Figure 1. Sample characteristics, authors' elaboration.

Most of the papers (more than 90 per cent) are co-authored (Figure 2), but only in 35 papers do the authors come from different countries.
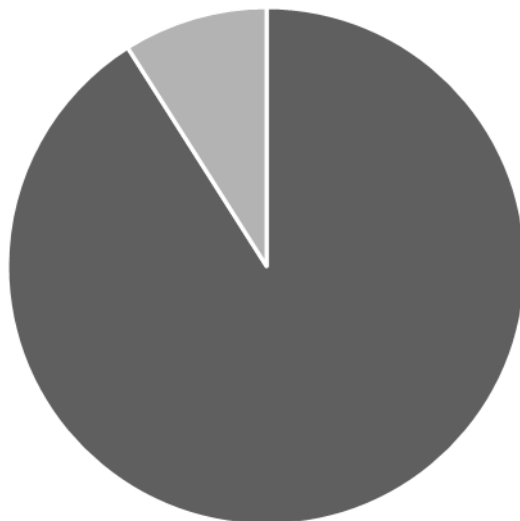


Figure 2. Sample characteristics, authors' elaboration.

The field of research analysed thus seems rather closed.

## 5. CONCLUSION AND RESEARCH AGENDA

Although the analysis has more than twenty years as its time range, this study demonstrates that research on false accounting has not developed in a profound way. Although the increase is fluctuating, the investigations in progress are still scarce. The scarcity of theoretical works is certainly a brake on the full achievement of transparency and accountability. In the first place because the

peculiarity of the phenomenon is underestimated; therefore, there is no clear-cut research agenda. Secondly, although there are difficulties in applying existing rules, there is little attempt to provide concrete inputs into practices.

This paper has some limitations. The bibliometric method focuses on academic articles: conference proceedings, books or book chapters were excluded from the sampling. Consequently, part of the existing literature was excluded from the survey and further empirical research is needed to validate some of the proposed theoretical hypotheses. Furthermore, due to the constant evolution of the WoS information base, articles and citations may fluctuate over time.

The study has both theoretical and practical implications. On a theoretical level, it not only identifies relevant research nodes for future investigations, but also contributes to the literature on the value of big data. Furthermore, it addresses the problem of false accounting, offering insights into its specific application to the big data phenomenon.

Most of the results are related to why and there are few articles that focus on the factors that can influence the adoption of this practice and try to explain why a certain type of company is more or less inclined to do it. It would also be useful to investigate the link between traditional accounting systems and the need to implement and integrate them.

Another neglected or almost completely unexplored and crucial issue is certainly the identification of the balance sheet areas in which the phenomena of misrepresentation of accounts occur most frequently. The question is far from irrelevant. Suffice to say, the traditional principal-agent relationship is increasingly complex. Another research direction that could be explored concerns the effects of adopting best practices in order to avoid fraudulence. In particular, the survey showed that they represent a stimulus for improving levels of efficiency, effectiveness and accountability. Some jobs shift the focus or responsibilities of these issues. However, if we also take into consideration the devastating effects that follow, not for management but for the workforce, then, according to these interpretations, we end up legitimizing rather than delegitimizing.

*Keywords: False accounting, fraudulent financial reporting, accounting fraud, false statement of accounts, misrepresentation of accounts.*

## REFERENCES

Amernic, J., & Craig, R. (2004). Reform of accounting education in the post-Enron era: moving accounting 'out of the shadows'. Abacus, 40(3), 342-378.

Ariail, D. L., Smith, K. T., & Smith, L. M. (2020). Do United States accountants' personal values match the profession's values (ethics code)?. Accounting, Auditing & Accountability Journal, 33(5), 1047-1075.

Bai, B., Yen, J., & Yang, X. (2008). "False financial statements: characteristics of China's listed companies and CART detecting approach", International journal of information technology & decision making, 7(02), 339-359.

Bao, Y., Ke, B., Li, B., Yu, Y. J., & Zhang, J. (2020). Detecting accounting fraud in publicly traded US firms using a machine learning approach. Journal of Accounting Research, 58(1), 199-235.

Beasley, M. S., Carcello, J. V., Hermanson, D. R., and Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. Accounting horizons, 14(4), 441-454.

Berger, P. G., & Lee, H. (2022). Did the Dodd–Frank Whistleblower Provision Deter Accounting Fraud?. Journal of Accounting Research, 60(4), 1337-1378.

Blanco, B., Dhole, S., & Gul, F. A. (2022). Financial statement comparability and accounting fraud. Journal of Business Finance & Accounting.

Bracci, E., Saliterer, I., Sicilia, M., & Steccolini, I. (2021). Accounting for (public) value (s): reconsidering publicness in accounting research and practice. Accounting, Auditing & Accountability Journal, 34(7), 1513-1526.

Callery, P. J., and Perkins, J. (2021). "Detecting false accounts in intermediated voluntary disclosure", Academy of Management Discoveries, 7(1), 40-56.

Carnegie, G. D., & Napier, C. J. (2012). Accounting's past, present and future: the unifying power of history. Accounting, Auditing & Accountability Journal, 25(2), 328-369.

Carter, D. B., Warren, R., & Steinhoff, A. (2023). The anatomy of tragedy: Starbucks as a politics of displacement. Accounting, Auditing & Accountability Journal, 36(1), 146-176.

Cuozzo, B., Dumay, J., Palmaccio, M., Palmaccio, M., & Lombardi, R. (2017). Intellectual capital disclosure: a structured literature review. Journal of Intellectual Capital, 18(1), 9-28.

Dalnial, H., Kamaluddin, A., Sanusi, Z. M., and Khairuddin, K. S. (2014). Detecting fraudulent financial reporting through financial statement analysis. Journal of Advanced Management Science, 2(1).

Dixon, R., Mousa, G. A., & Woodhead, A. D. (2004, June). The necessary characteristics of environmental auditors: a review of the contribution of the financial auditing profession. In Accounting Forum (Vol. 28, No. 2, pp. 119-138). No longer published by Elsevier.

Donelson, D. C., Kartapanis, A., McInnis, J., & Yust, C. G. (2021). Measuring accounting fraud and irregularities using public and private enforcement. The Accounting Review, 96(6), 183-213.

Dong, R.Z. (2011), "False accounting risk management of listed companies from the perspective of forensic accounting", in: 2011 International Conference on Computer Science and Service System (CSSS), Nanjing, China, pp. 420-423.

Dumay, J., & Guthrie, J. (2019). Reflections on interdisciplinary critical intellectual capital accounting research: Multidisciplinary propositions for a new future. Accounting, Auditing & Accountability Journal.

Erickson, M., Hanlon, M., & Maydew, E. L. (2006). Is there a link between executive equity incentives and accounting fraud?. Journal of accounting research, 44(1), 113-143.

Esposito P., Ricci P., (2020). "Cultural organizations, corporate social responsibility and stakeholder engagement in virtual museums: a multiple case study", Corporate Social Responsibility and Environmental Management (CSREM), 28(2), 953– 964.

Esposito, P., & Ricci, P. (2019). Politiche di bilancio e falso in bilancio nelle aziende e nelle amministrazioni pubbliche: relazione dicotomica o rapporto di interdipendenza funzionale?. AZIENDA PUBBLICA, 4, 341-356.

Esposito, P., Braga, A., Sancino, A. and Ricci, P., (2021). "The strategic governance of the digital accounting environment: insights from virtual museums", Meditari Accountancy Research, Vol. 31 No. 2, pp. 366-380.

Fisher, T. C., Gavious, I., & Martel, J. (2019). Earnings management in Chapter 11 bankruptcy. Abacus, 55(2), 273-305.

Gao, P., & Zhang, G. (2019). Accounting manipulation, peer pressure, and internal control. The Accounting Review, 94(1), 127-151.

Guthrie, J., Ricceri, F., & Dumay, J. (2012). Reflections and projections: a decade of intellectual capital accounting research. The British Accounting Review, 44(2), 68-82.

Harris, J., and Bromiley, P. (2007). "Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation", Organization Science, 18(3): 350–367.

Hui, K. W., Lennox, C., & Zhang, G. (2014). The market's valuation of fraudulently reported earnings. Journal of Business Finance & Accounting, 41(5-6), 627-651.

Johnson, G. G., & Rudesill, C. L. (2001, March). An investigation into fraud prevention and detection of small businesses in the United States: Responsibilities of auditors, managers, and business owners. In Accounting Forum (Vol. 25, No. 1, pp. 56-78). Taylor & Francis.

Kaminski, K. A., Sterling Wetzel, T., and Guan, L. (2004). "Can financial ratios detect fraudulent financial reporting?". Managerial Auditing Journal, 19(1), 15-28.

Kubick, T. R., & Li, Y. (2023). The Effect of Managerial adverse experience on financial reporting. The Accounting Review, 98(3), 307-333.

Le, N., & Ngo, P. T. (2022). Intra-industry spillover effects: Evidence from bankruptcy filings. Journal of Business Finance & Accounting, 49(7-8), 1113-1144

Leão, F., & Gomes, D. (2022). The stereotype of accountants: using a personality approach to assess the perspectives of laypeople. Accounting, Auditing & Accountability Journal.

Leeke, P. A. (2020), "Fake narratives and critical thought: how creative writing can facilitate critical thinking in an age of fake news and false accounting", New Writing, Vol. 17 No. 2, pp. 199-207.

Lennox, C., Lisowsky, P., & Pittman, J. (2013). Tax aggressiveness and accounting fraud. Journal of accounting research, 51(4), 739-778.

Li, V. (2016). Do false financial statements distort peer firms' decisions?. The Accounting Review, 91(1), 251-278.

Lin, L., Liao, K., & Xie, D. (2023). When Investors Speak, Do Firms Listen? The Role of Investors' Dividend-related Complaints from Online Earnings Communication Conferences. Abacus, 59(1), 32-75.

Lokanan, M. E. (2015, September). Challenges to the fraud triangle: Questions on its usefulness. In Accounting Forum (Vol. 39, No. 3, pp. 201-224). No longer published by Elsevier.

Lokanan, M.E. (2019), "A fraud investigation plan for a false accounting and theft case", Journal of Financial Crime, Vol. 26 No. 4, pp. 1216-1228.

McCartney, S., & Arnold, A. J. (2003). The railway mania of 1845-1847: Market irrationality or collusive swindle based on accounting distortions?. Accounting, Auditing & Accountability Journal, 16(5), 821-852.

McGettigan, A. (2012), "False Accounting", Why Higher Education Reforms Don't Add up.

Miller, G. S. (2006). The press as a watchdog for accounting fraud. Journal of Accounting Research, 44(5), 1001-1033.

Passas, N. (2001). False accounts: Why do company statements often offer a true and fair view of virtual reality. European Journal on Criminal Policy and Research, 9, 117-135.

Ramos-Rodríguez, A. R., & Ruíz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: A bibliometric study of the Strategic Management Journal, 1980–2000. Strategic Management Journal, 25(10), 981-1004.

Riviezzo, A., Skippari, M., & Garofano, A. (2015). Who wants to live forever: exploring 30 years of research on business longevity. Business History, 57(7), 970-987.

Samuel, B. (2021), "False Accounting as Formalizing PracticesThe Computation of Macroeconomic Aggregates in African Countries since Structural Adjustment", History of Political Economy, Vol. 53 No. 1, pp. 81-110.

Schuetze, W. P. (2001). What are assets and liabilities? Where is true north?(Accounting that my sister would understand). Abacus, 37(1), 1-25. Schuetze, W. P. (2001). What are assets and liabilities? Where is true north? (Accounting that my sister would understand). Abacus, 37(1), 1-25.

Sen, P. K. (2007). Ownership incentives and management fraud. Journal of Business Finance & Accounting, 34(7-8), 1123-1140.

Shroff, N. (2020). Real effects of PCAOB international inspections. The Accounting Review, 95(5), 399-433.

Soltani, B. (2014), "The Anatomy of Corporate Fraud: A Comparative Analysis of High Profile American and European Corporate Scandals", Journal of Business Ethics, Vol. 120, No. 2, pp. 251–74.

Spathis, C., Doumpos, M., & Zopounidis, C. (2002). Detecting falsified financial statements: a comparative study using multicriteria analysis and multivariate statistical techniques. European Accounting Review, 11(3), 509-535.

Srivastava, R. P., Mock, T. J., & Turner, J. L. (2009). Bayesian fraud risk formula for financial statement audits. Abacus, 45(1), 66-87.

Ullah, S., Massoud, N. and Scholnick, B. (2014), "The Impact of Fraudulent False Information on Equity Values". J Bus Ethics, Vol. 120, pp. 219–235.

Unerman, J., Guthrie, J., and Striukova, L. (2007). "UK reporting of intellectual capital", Mimeo, ICAEW, University of London.

Usman Malik, M. amd Esposito, P. (2022). "Coping Value Destruction in Welfare and no Profit Sector in Developing Countries: a research note from Pakistan NGOs", Welfare e ergonomia, VIII, 2, Milano, Franco Angeli, 2531-9817 p. 73-87.

Wallace, W. A. (1995). Auditing, Cincinnati, Ohio: South-Western College Publishing.

Wu, W. & An, S. (2014), "Double-principal Agent: False Accounting Information, Supervision Cost and Corporate Performance", Journal of Systems Science and Information, Vol. 2 No. 4, pp. 301-312.

Young, S. M., & Peng, E. Y. (2013). An analysis of accounting frauds and the timing of analyst coverage decisions and recommendation revisions: evidence from the US. Journal of Business Finance & Accounting, 40(3-4), 399-437.

Zhou, W., Wu, L., & Wang, H. (2016). The consequences of increasing the scope of managerial judgement in accounting standards. Abacus, 52(3), 404-440.

# "TO BUILD OR NOT TO BUILD?" HOW PRICE INSTABILITY AFFECTS PPPS IN HEALTHCARE

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## ABSTRACT

In recent years, with the increase of the urban population worldwide, the demand of social and economic infrastructure has become even higher. This paper aims to investigate how price instability of commodities have influenced the Public Private Partnership (PPP) in healthcare sector. The analysis was conducted through the case study method to verify the state of the art of new hospital construction. Specifically, a document analysis was carried out: the competitive bidding process, the contract between the parties, the cost-benefit analysis and the risk management were examined. For the construction of new hospital infrastructures, the public administration must necessarily acquire not only technical expertise but also economic resources through partnerships with the private sector. The activity under investigation is the Public-Private Partnership contract for the construction and operation of the "Park of Health, Research and Innovation of the City of Turin" hospital. The competitive dialogue between the contracting authority and the private companies was reopened because the bidders, in February 2022, expressed their concerns about the extraordinary increase in electricity and commodities prices. The focus is on how an unexpected event such as the sudden price increase is managed, which consequently leads to a time delay and an increase in total costs to achieve the initial target. A limitation of the research is that it cannot extend the results to cross-sectional conclusions because it is based on a case study. An innovation could be to highlight the economic effects on the construction of a hospital through PPP in Italy during a period of inflation. This study is one of the few research projects that focuses on relationship between price instability and Public Private Partnership.

## 1. INTRODUCTION

Infrastructure construction has always been seen as a driver of a country's economic development (Cui *et al*., 2018). In recent years, with the increase of the urban population worldwide, the demand of social and economic infrastructure has become even higher. Public and private players hold different values because they pursue distinct aims (Boyce and McDonald-Kerr, 2021). However, a planned performance measurement system enables Public-Private Partnerships (PPPs) to provide better, more transparent

and efficient services to citizens (Esposito and Dicorato, 2020). The involvement of private partners in public infrastructure has led to improved performance standards of the projects (Liu *et al.*, 2015). Public-private partnerships (PPPs) are a widely debated issue, addressed by both the scientific literature and policy makers emphasising the importance of the role of managers in achieving the goals of effectiveness and efficiency in the implementation of public policies (O'Flynn, 2007). Interest in this area has increased in recent times, mainly due to the growing complexity of this dynamic context.

This paper is structured as follows: first, we present a particular focus on the link between public and private sectors in the pursuit of a superior result than can be achieved through the independent activity of individual players. Secondly, we provide details on the methodology adopted and the data collection. Thirdly, we present both European and Italian legislative developments. Further, we discuss the findings of the analysis providing insights on the case study investigated. Finally, based on our findings, we offer several concluding remarks and contribute to the literature by focusing on relationship between price instability and PPPs. Within this perimeter lies the difficulty of public services in meeting citizens' needs. Therefore, they had to strive to find new solutions, such as the establishment of a scheme to promote private investment with PPPs as a guide.

## 2. COLLABORATION BETWEEN THE PUBLIC AND PRIVATE SECTOR

The hypothesis underlying the research is that public-private collaboration can have positive or negative externalities, especially in capital-intensive sectors with a broad social resonance. The provision of public services and the construction of public infrastructure can ideally be placed along a line that, at one extreme, presents exclusive public management and, at the other, complete privatisation. Between these two extremes, a wide network of relationships of varying intensity develops involving public and private players (Biygautane *et al.*, 2020). The aim of policy makers is to incentivise and support investment in infrastructure while at the same time safeguarding state finances and, in this context, the PPPs constitutes a model for combining the strengths of the public and private sectors in the pursuit of a result that is superior to that which can be achieved through the autonomous activity of individual players (Wettenhall, 2003). Before delving into the regulations, however, it is appropriate to clarify the concept of the Public Private Partnership, which consists of a collaborative profile, characterised by a predetermined duration, between public and private actors, through which they create a composite asset in a form of sharing financial means, risks (Xiang *et al.*, 2022) and investments (Van Ham and Koppenjan, 2001). This is a wide and cross-cutting definition that can be applied to any area because the variables involved, such as level of involvement or time, are heterogeneous. For simplicity's sake, the PPPs can be represented with the diagram below (Figure 1) drawn up by the authors:
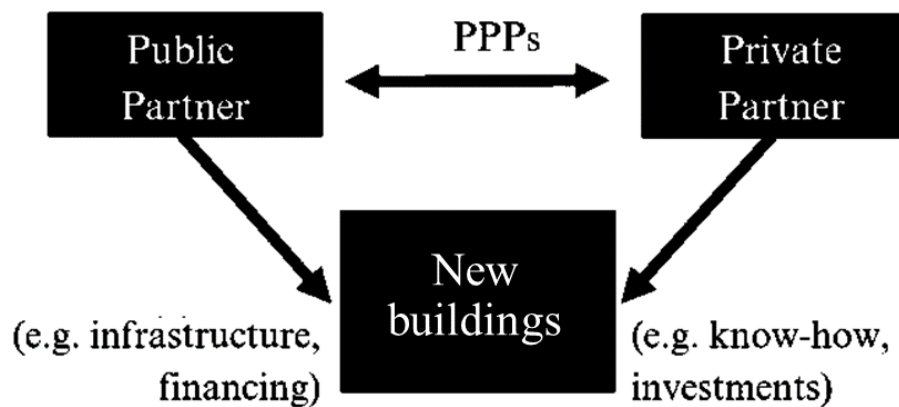
Figure 1. PPPs relations. Source: authors' elaboration.

While the public partner usually brings advantages in terms of administrative regulatory capabilities and sometimes financial resources, the private partner generally brings specific know-how, managerial skills and a proven experience in the use of funding sources (Zarco-Jasso, 2005). Moreover, the PPP is a widespread concept, encompassing a variety of contracts (Klijn and Koppenjan, 2016) and can be applied in multiple fields of activity. An indirect positive externality from an economic point of view is that PPPs can promote the quality and efficiency of infrastructure construction, improve employment and social welfare, drive the strengthening of the industrial structure and achieve a better level of urbanisation (Almeile *et al.*, 2022). Therefore, PPPs have emerged as a favourable and effective method for the provision of services and, in particular, when a large investment such as infrastructure projects is required (Sastoque *et al.*, 2016).

The collaboration between the public and private sectors has been dealt with at Community level since European Council Directive 93/37/EEC of 14 June 1993 coordinating procedures for the award of public works contracts in the specific fields of infrastructure construction and, subsequently, the management of public services with a progressive evolution. The notion of PPP implies a complex scheme of relations between public authorities and private companies aimed at the realisation of infrastructure projects and the provision of public services (Antoniazzi, 2017). These procedures do not transfer ownership of the assets to the private sector, but only management, i.e. the ability to act in certain contexts for a certain period of time. In order to achieve the objectives of functional privatisation (minimising the costs of the services offered by the private operator to the public operator), it is necessary to properly manage the tendering process to prevent a private monopoly from replacing the public operator. The principal advantage of involving the private sector in the management of a public service is that the public agency does not have to use its own resources to finance the management of a public service (Antoniazzi, 2017).

## 3. METHODOLOGY

The research was conducted on a single case study (Yin, 1995; 2009), which can help to understand the complexities in healthcare PPPs. In general, the case study method (Eisenhardt, 1989) is a "bottom-up approach such that the specifics of data produce the generalizations of theory" (p.547). According to Gustafsson (2017, p.9), the single case study "makes to have a deeper understanding of the exploring subject".

Precisely, the case study under investigation is the Piedmont Region's "Park of Health, Research and Innovation" (PHRI) hospital. This case study was selected because PHRI was among the first in Italy, after the reform of the Procurement Code, to take advantage of the opportunity of a collaboration between the public and private sectors. The research was conducted using manual content analysis procedures, which allowed large volumes of data to be probed in a clear and systematic manner, identifying significant features through a coding process (Linneberg, and Korsgaard, 2019). In this way, two goals are achieved through the case study: to describe the main characteristics of the phenomena and to explain the dynamics of a specific process.

The data collection method through which the investigated documents were retrieved was mainly through the institutional websites of the institutions. While these features may limit our results, they offer the possibility of collecting a large amount of data.

For the research activity, the acts of the public tender procedure and the contract concluded between the parties were examined. In particular, more attention was focused on the cost-benefit analysis, the assessment of profitability and financial sustainability. Moreover, a content analysis (Vespestad and Clancy, 2021) was conducted to study the documents collected from institutional websites. The documentation under investigation consists of: published deeds, minutes of the public procedure, general director's resolution, feasibility studies and general report of the project. Each document was examined by each co-author and there was a comparison between the different subjects to reduce the subjectivity of the analysis. The years taken as reference for the documents examined range from 2018 to 2023. This time interval was selected to analyse the service provision from its inception to its award. In addition, no personal data of persons were involved in the research. The selected information was evaluated and the results obtained were assessed quantitatively (S Mouhammed, 2015) and qualitatively (Radović-Marković and Alecchi, 2016). Thus, the analysis was conducted top down (Linkov *et al.*, 2014), starting from a broader context to arrive at a more focused field of research. However, new regulatory measures will be analysed in the second part of the paper, looking at European and Italian legislative differences.

## 4. PPPS IN EUROPEAN NORMATIVE FRAMEWORK

Since the 1990s, the European Union has certainly played the most important role (Verhoest, *et al.,* 2015) by issuing Directive 89/440/EEC and Directive 93/37/EEC. Both directives mainly analysed the case of public works concession contracts. In 2004, with the publication of the Green Paper, it was possible to delineate the Public-Private Partnership instrument as "a long-term contractual agreement between a public body or authority and a private party for the provision of a public good or service in which the private party assumes a significant risk and management responsibility". The source of the cardinal principles of the PPP framework can be found in the European Commission's Green Paper on PPPs and Public Law on Procurement and Concessions of 30 April 2004 (Maslyukivska and Sohail, 2007). In the European Commission's Communication of 19 November 2009 (COM 2009 615), published about five years after the adoption of the Green Paper on PPPs, positive and negative aspects of this particular way of realising public works are highlighted. Regarding the positive aspects, we find (Sambri, 2012):

- improvement of project implementation;

- the reduction of infrastructure costs, thanks to the distribution of the financing cost over the entire duration of the work;

- the improvement of risk sharing between the public and private sectors;

- the promotion of sustainability, innovation, research and development;

- the recognition of the central role of the private sector in the development and implementation of long-term strategies for industrial, commercial and infrastructure programmes.

The European Commission has clarified that the PPP consists of forms of cooperation between public and private entities that aim to guarantee the financing, construction, management of a restructuring or maintenance of an infrastructure or the provision of a service. According to this approach, its essential elements are listed (Geninatti Satè, 2017): duration, financing modalities, role of the economic operator (Contreras and Angulo, 2021), risk allocation (Campra *et al*., 2014). The lack of any one of them results in the ineffectiveness of the contract, which will have no effect on the parties. PPPs operations may also include the assignment to general contractor where the consideration for the construction of the work is postponed in whole or in part and linked to the availability of the work for the client or third parties (Demirel, *et al.,* 2017).


## 5. PPPS IN ITALIAN NORMATIVE FRAMEWORK

The legal regulation of public-private partnerships is primarily intended to establish a balance between

the public and private interests that intersect in every PPP project, as well as to protect competition and promote market disciplines (Marshall *et al.*, 2021). The Italian state proved slow and far-reaching in implementing the 2004 Green Paper. Moreover, the 2006 Public Contracts Code did not contain a specific regulation for partnerships or even a definition of the concept, but only a discipline of concessions, contained in Art. 152 et seq. The Public Contracts Code (Legislative Decree 163/06, and subsequent amendments) constitutes the reference regulatory provision also in terms of programming. The Code only regulates the planning of public works, referring to the implementation regulation the programming discipline for public contracts relating to services and supplies. Article. 283 provides the right, for each contracting authority, to approve each year an annual program for the acquisition of goods and services relating to the following year (Gallia, 2008).

In 2008, a notion of Public Private Partnership was introduced into the Code for the first time. This definition is regulated by Art. 3, Paragraph 15-ter of the previous Code, and substantially mirrored in its entirety that given by the European Union in 2004. This was of vital importance in order to allow for a regullification, albeit approximate (Crivelli, 2011). It was only in 2016 that the Code was completely replaced by Legislative Decree 50/2016, which discusses partnerships in much greater depth by heading the entire Title I of Part IV 'Public-Private Partnership' and reserving Articles 179 to 199 of the new code. These regulations define several more specific instruments, treated as specific cases within the broader genre represented by the PPP (De Luca and Lucido, 2019).

The cornerstone of the current regulations is represented, on the one hand, by Art. 3(1)(eee) of Legislative Decree April 18, 2016 (New Public Contracts Code), which contains the descriptive notion of the PPP contract. In particular, similarly to the previous Public Contracts Code (Legislative Decree 163/2006), it defines the PPP contract as a contract for pecuniary interest, stipulated in writing, whereby one or more contracting stations grant one or more economic operators, for a period determined according to the duration of the amortisation of the investment or the financing modalities established (Esposito, 2019). The activities may relate to the construction, transformation, maintenance and operational management of a building in exchange for its availability, or its economic exploitation (Ayhan and Üstüner, 2022), or the provision of a service related to the use of the project itself, with the operator assuming the risk under the terms identified in the contract (Di Giovanni, 2012; Shrestha *et al.*, 2019). In the legislative decree 18 April 2016, n. 50 (amended with supplementary and corrective provisions by Legislative Decree no. 56 of 19 April 2017), some direct references to the PPP are found in articles 180 ss. ("Public private partnership"), which application implies a call for tenders for the selection of economic operators; in the third part on concession contracts (articles 164 ff.) which best express the collaborative model of the public-private partnership according to modern logic. Furthermore, the articles 180-184 expressly refer to the PPP and the application of competition rules.

The article 171 regulates the call for tenders, the procedures and modalities of the contract, and Art. 165 elaborates on the constitutive rules of the PPP (among the general definitions pursuant to art.3, paragraph 1, uu) and vv) and, in particular, the operating revenues of which the majority must derive from the sale of the services rendered to the market and the transfer of operational risk (art. 3, paragraph 1, zz) which refers to the "possibility that, under normal operating conditions, variations in the costs and revenues covered by the concession may affect the equilibrium of the economic and financial plan" (Antoniazzi, 2017). On the other hand, Art. 180 et seq. of the New Public Contracts Code can be divided into two parts: the first, from Art. 180 to art. 182, enunciates the general discipline of PPPs (Cori and Paradisi, 2018; Polizzi, 2017); the second, from art. 183 to art. 190, regulates, instead, the typified PPP contract types (Russo, 2007; Cunha Marques and Berg, 2011).

Among the main reasons for the growing interest in Italy (Braja *et al.*, 2016) for forms of collaboration between public and private, the particular infrastructure deficit that characterizes this country is highlighted. In fact, it is characterized by a significant gap with respect to the main developing countries (Kang *et al.*, 2019), which contributes to limiting economic growth and international competitiveness. Hence the need for greater involvement of the private sector (Rashed and Shah, 2021).

## 6. A RESEARCH NOTE FROM AN ITALIAN CASE STUDY

Healthcare PPPs range from the simple outsourcing of support services (Casady and Baxter, 2022), such as canteen or laundry, to the more complex design, construction and management of hospital facilities (Etemadi *et al.*, 2022). The ultimate intent of the collaboration is not limited to the pursuit of economies of scale, but is also embodied in the benefit of increased innovative capacity (Catuogno *et al.*, 2016). However, the impact of the coronavirus is also felt by key players in the PPP market, such as the supply chain (building material suppliers), construction workers and major lenders, resulting in higher construction costs and net investment losses (Akomea-Frimpong *et al.*, 2023).

The case study insists on the realisation of the Piedmont Region's Park of Health, Research and Innovation (PHRI) in Turin. In order to entirely realise the PHRI, for the sake of practicality, two lots have been divided: the first comprises the Health, Clinical Training and Research Pole; the second is the one dedicated to Education and Residential facilities. These four functional poles, which are closely interconnected, are articulated as follows:

1. the Pole of Healthcare and Clinical Training, has an area of over 120,000 square metres with a total of 1,040 beds;

2. the Research Pole, covering an area of 10 thousand square metres, for approximately one thousand academics including lecturers and PhD students;

3. the Teaching Pole, set up for three-year degree courses in medicine or health professions, single-cycle master's degree courses and specialised courses for 5 thousand estimated students;

4. the Residential Pole, comprising places for patients temporarily in need of low-intensity care support or for students or professionals, including toilets, canteen, storerooms and residence rooms. The other spaces in the complex are the outdoor green area used for relaxation and rehabilitation activities and the parking space.

The procedure implemented through the Public Private Partnership (PPP) concerns only the 1st Lot pursuant to Art. 180 et ss. of the New Procurement Code. The execution of Lot 1 of the project was organised as follows:

1. Intervention No. 1: Buildings and Facilities, consisting of:

   A. Clearance of the area, including excavations and necessary earth moving;

   B. Construction of Buildings, including: roofing, waterproofing, energy management works, sound-absorbing walls and various systems including: water, air-conditioning, fire-fighting, sewage disposal, internal transport and electrical distribution systems.

2. Intervention No. 2: Sanitary technology and furnishings:

   C. Complex health technologies, for example: magnetic resonance tomograph, transmission electron microscope and hyperbaric chamber;

   D. Furniture and supplies (sanitary and non-medical) such as interior fittings for which the materials used must meet a necessary and sufficient requirement: there must be a guarantee that they have been previously used in other hospital facilities.

The subject of the Public-Private Partnership (PPP) procedure is exclusively the realisation of the building and plant engineering component (letter B) of Lot No. 1. The studies consider the completion of the building and plant engineering works to build the hospital complex, including the climatic chamber. With regard to the construction part, a distinction is made between structural-architectural works and mechanical-electrical plant engineering. The services covered by the PPP contract are: maintenance, operation and management of the building works, facilities, green areas and communication networks. The choice of meeting the needs through a partnership contract, according to the methods and procedures governed by articles 180, 181 and 182 of the Code, is dictated by the reasons set forth herein:

• to prevent a complex intervention such as this from having to be carried out in an uncertain and lengthy manner with a low level of integration;

• to cope with the insufficient economic resources available for the intervention;

- to transfer the risks of design, realisation and "availability" of the work to the private partner;

- to operate within an off-balance investment;

- to outline the relationship with the economic operator through a contract based on performance and results.

The public entity decided to manage the tender procedure through the telematic intermediation system, pursuant to Regional Law No. 33 of 2007 et ss.. In July 2020, the entity ruled the exclusion of the temporary joint venture formed by ITINERA S.p.A. (agent), as it no longer met the requirement consisting in the execution, in a European context, of at least two PPP contracts, for which the investment had to be no less than €40 million and at least the object of one of the two had to be a healthcare facility. The companies remaining in the tender are: SIS S.c.p.a. which includes SACYR Construcion and INC S.p.A. of the Fininc group. Instead, SIRAM S.p.A. disappeared from the radar (Marques, and Berg, 2011). In February 2022, the bidders sent two notes to the contracting station expressing unease about the extraordinary increase in the prices of electricity, gas and raw materials caused, in part, by the Russian war on Ukrainian soil. The repercussion is inevitable: for the two companies still in the bidding process, the construction costs are exorbitant compared to what was budgeted and therefore they have applied for a review of the economic and financial conditions. For its part, Italy's National Anti-Corruption Authority expressed a negative opinion on the adjustment of the Economic Framework as a result of these unforeseeable events. The reason given was that they would have resulted in the modification of the economic parameters underlying the tender procedure at the time of publication of the call for tenders (World, 2022). The Director General put an end to this with Resolution 1222/2022 of 2 September 2022, by which the acts of the procedure from Phase III (tender) were revoked and the reopening of the Competitive Dialogue was initiated.

Thus, we use a longitudinal dataset that may be exceeded in the future. The projected costs for the PPP alone exceed € 422 million. The duration of the partnership is 30 years divided into 5 years for the design, construction and advancement of the project and 25 years of concession for the maintenance services of the works and facilities and energy and heat management. The sources of financing to cover the investment are expected to be public (Ministry of Health) to the tune of € 131.5 million, while the remainder, i.e. approximately 69%, is private (*senior debt, equity* and IVA). The Value for Money, used to assess the convenience for the public infrastructure, operates through the Net Present Value (NPV) criterion under 3 hypotheses: resorting to the financial market, whose BASE NPV loan is equal to just under € - 410.94 million; financing the project with its own resources, whose BASE NPV loan is equal to € - 423.96 million; resorting to PPP, whose BASE NPV loan is equal to € - 434.12 million. From the comparison of these elements, it emerges the convenience for the entity to resort to the PPP. The total value of the consideration is over €934 million and the NPV of the project is approximately €549,855.

All risks with their relative importance, the entity on which they fall and how they are managed are highlighted in the risk matrix. The portion of transferable risk to the private partner is €65 million, as defined in Figure 2:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Risk | 1 | 2 | 3 | 4 | 5 | 1 | […] | 25 |
| Investment deviation risk | | 5.652.000 | 5.652.000 | 5.652.000 | 5.652.000 | | […] | |
| Time deviation risk | | 11.147.000 | 11.147.000 | 11.147.000 | 11.147.000 | | […] | |
| Maintenance cost increase risk | | | | | | 351.000 | […] | 450.134 |
| Operating cost increase risk | | | | | | 338.250 | […] | 433.783 |
| Total | - | 16.799.000 | 16.799.000 | 16.799.000 | 16.799.000 | 689.250 | […] | 883.916 |
| Present value of transferable risks | 65.198.748 | | | | | | | |

Figure 2. Risk Matrix. Source: Feasibility Study data, authors' elaboration.

Furthermore, the economic quantification of these risks for the PHRI represents the economic quantification of the project's operational risk. Consequently, in the event of market fluctuations, the concessionaire suffers an actual loss. However, for all risks, a quantitative analysis is provided to quantify the potential loss. When risks remain in the domain of private companies, they result in a fluctuation of expected project returns. In conclusion, by verifying the cost-effectiveness and risks associated with each investment method, it is advantageous to PPP.

## 7. CONCLUSIONS

PPPs are complex models therefore applicable in many sectors: water (Lima *et al.*, 2021), Roadway Construction and Preservation (Nahidi *et al.*, 2017), telecommunications facilities (Jamali, 2004), infrastructure (Loxley, 2013) and sports facilities (Rossi and Civitillo, 2014). Furthermore, the use of partnership forms opens the door to the so-called "innovation partnership" (Morzenti Pellegrini, 2014). For instance, PPP investments in the rural-water sector can promote low-carbon economic development (Nyanyofio et al., 2022). The aforementioned investments allow a meeting point between the transport sector, ESG investments and social cooperation. In fact, this study can also advance our knowledge of the public area from a service health perspective (Visconti *et al.*, 20; Mukherji *et al.*, 2022). Indeed, it is crucial for governments to ensure that the original project is completed and that PPP services are integrated in healthcare (Abuzaineh *et al.*, 2018).

The use of PPPs has been defined for two reasons: the complexity of the intervention and the identification of the most suitable partners. In fact, this requires a disarticulation into several components. Partnerships with private entities given the impossibility of resorting to additional debt,

as in the case study. Moreover, the gain in value of the real estate assets will materialise once the renovated structure is sold and can be a significant element in ensuring the long-term financial sustainability of the operation. The profit from the transaction will strengthen the institution's capacity. In general, every contract brings with it critical issues related to information asymmetries (Gao *et al.*, 2023) between the parties and to the inappropriate use of this instrument. First of all, there is the risk of a consolidation of the total cost of investments (Osei-Kyei and Chan, 2021), which could lead to a privatisation of income and a collectivisation of losses. Moreover, the instrument in question is complex and requires professional skills that are often not available within the public administration. Futhermore, the numerous litigations increase the length of procedures and the lack of coordination between institutions may make the initiative unprofitable and even lead to its failure. Not to be underestimated is the lack of competition in the procedural phase: very often there is only one competitor. Finally, the PPPs used should be based on clear and durable legislative foundations.

## 8. LIMITATION AND FUTURE RESEARCH TRAJECTORIES

Our study has some shortcomings that require further investigation. The primary limitation of this work concerns the variability of the data, as we use a longitudinal dataset that may be obsolete in the future. The underlying reason is that the tender is still ongoing, as the tenderers in February 2022 expressed unease about the extraordinary increase in electricity and commodity prices. In particular, more attention was focused on the cost-benefit analysis, the assessment of profitability and financial sustainability. According to the authors, this limitation should be overcome in future research projects. For the future, innovative and additional insights may be identified. First, the establishment of an independent body composed exclusively of highly qualified personnel. Its task should be to evaluate projects and withdraw accreditation in the event of a lack of transparency (Campra *et al.*, 2023). Transparency for a PPP has costs (in terms of resources needed for preparing and releasing information to different actors and audience) and can have risks (because releasing information can result in consequences that may negatively affect the partnership (Tallaki and Bracci, 2021). Since contractors do not have the expertise to manage some of the risks that are transferred to them, they use insurance, whereby the risks are assumed by various private sector organisations (Demirag *et al.*, 2012). Second, the publication of a unique and comprehensive framework into which all existing regulations should converge. The set of rules governing the operation of PPPs must be clear. Differences between the various types are reduced by establishing guidelines, comparative case studies and model contracts. The third is the adoption of a multidimensional framework for measuring intangible performance that can satisfy both private companies and public entities. PPPs have a variety of stakeholders who could seek to hold the organization and its officers accountable. Perhaps most directly involved are the

founding or core partners, who typically provide funding to initiate the PPP and establish agreements and contractual obligations. Quantifying any discrepancies resulting from the adoption of the different methods remains a complex problem, but one must look beyond regulatory constraints to counter any negative impact on public value creation (Esposito and Ricci, 2015).

Last but not list, according to some scholars (Klassen *et al.*, 2015), if the partnership is carefully planned and implemented, it has the potential to be a remarkable tool.

*Keywords: Public Private Partnership (PPP), accounting regulation, healthcare, price risk, public and private collaboration, public tender.*

# REFERENCES

Abuzaineh, N., Brashers, E., Foong, S., Feachem, R., Da Rita, P., (2018). "PPPs in healthcare: Models, lessons and trends for the future", Healthcare public private partnership series, No. 4. San Francisco: The Global Health Group, Institute for Global Health Sciences, University of California, San Francisco and PwC, USA.

Akomea-Frimpong, I., Jin, X., Osei-Kyei, R. and Tumpa, R.J. (2023). "A critical review of public–private partnerships in the COVID-19 pandemic: key themes and future research agenda", Smart and Sustainable Built Environment, Vol. 12 No. 4, 701-720.

Almeile, A. M., Chipulu, M., Ojiako, U., Vahidi, R., and Marshall, A. (2022), "The impact of economic and political imperatives on the successful use of Public-private partnership (PPP) in projects", Production Planning and Control, pp. 1-21.

Antoniazzi S. (2017), "Società miste e servizi pubblici locali. Esperienze nazionali e modello europeo", Editoria scientifica, Napoli.

Ayhan, B. and Üstüner, Y. (2022), "Turkey's public–private partnership experience: a political economy perspective". Southeast European and Black Sea Studies, pp. 1-24.

Biygautane, M., Clegg, S. and Al-Yahya, K. (2020), "Institutional work and infrastructure public–private partnerships (PPPs): the roles of religious symbolic work and power in implementing PPP projects", Accounting, Auditing & Accountability Journal, Vol. 33 No. 5, pp. 1077-1112.

Boyce, G. and McDonald-Kerr, L. (2021), "PPPs and non-financial value: a critical analysis of public policy and implications for social, environmental and indigenous cultural values", Meditari Accountancy Research, Vol. 29 No. 2, pp. 324-344.

Braja E., Campra M, Ricci P., and Esposito, P. (2016), "Public private partnership and IFRIC 12 in Italy", Global Business and Economics Review, Inderscience Enterprises Ltd, Vol. 18 (3/4), pages 371-384.

Campra, M., Esposito, P., & Brescia, V. (2023). Corporate social responsibility and technological perspectives in healthcare: An exploratory analysis of the evolution of the anti-corruption system through multiple case studies. Corporate Social Responsibility and Environmental Management.

Campra, M., Oricchio, G., Braja, E. M., and Esposito, P. (2014). "Sovereign Risk and Public-Private Partnership during the Euro Crisis". Springer.

Casady, C.B. and Baxter, D. (2022), "Procuring healthcare public-private partnerships (PPPs) through unsolicited proposals during the COVID-19 pandemic", Journal of Public Procurement, Vol. 22 No. 1, pp. 6-16.

Catuogno S., Arena C., Saggese S., Sarto F. (2016). "Performance implications of Public Private Partnerships in research hospitals: lessons from the involvement of a charity", special issue How to Sustain Universal Health Coverag, Health Services Management Research, 29(4): 91-98.

Contreras, C.A. and Angulo, J.V. (2021), "Innovation and tariff-adjustment options in public-private partnerships", Hacienda Publica Espanola. Vol. 243, pp. 51-81.

Cori R., Paradisi I., (2018). Partenariato Pubblico-Privato e project financing: il contesto di riferimento, Nicolai M., TortorellaW. (a cura di), "Partenariato Pubblico-Privato e Project Financing: come uscire dalla crisi", Maggioli, Rimini p. 93.

Crivelli M., (2011). "Lo strumento finanziario del Partenariato Pubblico Privato: stato dell'arte in Italia", Istat, Italia.

Cui, C., Liu, Y., Hope, A., and Wang, J., (2018). "Review of studies on the public–private partnerships (PPP) for infrastructure projects, International Journal of Project Management", 36, 773–794.

Cunha Marques, R. U. I., & Berg, S. (2011). Public-private partnership contracts: A tale of two cities with different contractual arrangements. Public Administration, 89(4), 1585-1603.

De Luca, R. and Lucido, N., (2019). "Il piano economico-finanziario nelle procedure di partenariato pubblico-privato: orientamenti ANAC, Ragioneria Generale dello Stato e giurisprudenza recente", Fondazione Nazionale dei Commercialisti, available at: https://www.fondazionenazionalecommercialisti.it/filemanager/active/01320/2019_03_21_Partnerariato_pubblico_privato.pdf?fid=1320 (accessed 30 January 2023).

Decreto Legislativo n. 163, (12 April 2006). Italy, available at: https://www.gazzettaufficiale.it/eli/id/2006/05/02/006G0184/sg (accessed 19 February 2023).

Decreto Legislativo n. 33, (14 marzo 2013). Italy, available at: https://www.gazzettaufficiale.it/eli/id/2013/04/05/13G00076/sg (accessed 9 March 2023).

Decreto legislativo n. 50, (18 aprile 2016). Italy, available at: https://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.dataPubblicazioneGazzetta=2016-04-19&atto.codiceRedazionale=16G00062 (accessed 7 April 2023).

Decreto Legislativo n. 97, (25 maggio 2016). Italy, available at: https://www.gazzettaufficiale.it/eli/id/2016/06/08/16G00108/sg (accessed 19 April 2023).

Demirag, I., Khadaroo, I., Stapleton, P. and Stevenson, C. (2012), "The diffusion of risks in public private partnership contracts", Accounting, Auditing & Accountability Journal, Vol. 25 No. 8, pp. 1317-1339.

Demirel, H. Ç., Leendertse, W., Volker, L., & Hertogh, M. (2017). Flexibility in PPP contracts–Dealing with potential change in the pre-contract phase of a construction project. Construction management and economics, 35(4), 196-206.

Di Giovanni A., (2012), "Il contratto di partenariato pubblico privato tra sussidiarietà e solidarietà", Giappichelli editore, Torino.

Eisenhardt, K., M. (1989). "Building Theories from Case Study Research", The Academy of Management Review, 14(4), 532-550.

Esposito P., and Dicorato S.L., (2020). "Sustainable Development, Governance and Performance Measurement in Public Private Partnerships (PPPs): A Methodological Proposal", Sustainability, 12, 5696.

Esposito P., and Ricci P., (2015). "How to turn public (dis)value into new public value? Evidence from Italy", Public Money & Management, Taylor & Francis Group, UK, Vol. 35, n. 3, 227-231.

Esposito, P. (2019). "La contabilizzazione delle operazioni del partenariato pubblico-privato. Lineamenti teorici e metodologici", Giappichelli Editore, Torino.

Etemadi, G. Rezayatmand, R. and Shaarbafchizadeh, N. (2022) "Public-private partnership in Iranian hospitals: Challenges and opportunities", Journal of Education and Health Promotion, Vol. 11.

Gallia R., (2008), "Il Partenariato Pubblico Privato", Quaderni di Legislazione Tecnica, N.4. Italia.

Gao, B., Ozturk, I., and Ullah, S., (2023). "A new framework to the green economy: asymmetric role of public-private partnership investment on environment in selected Asian economies", Economic Research-Ekonomska Istraživanja, 36:1, 1960-1971,

Geninatti Satè L., (2017). "Art.180", in Luca Raffaello Perfetti (a cura di), Codice dei Contratti pubblici commentato, Commentari Ipsoa, Wolters Kluwer, Milano, p. 1454 ss.

Green Paper, (2004). European Commision. available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0327:FIN:IT:PDF (accessed 27 February 2023).

Gustafsson J. (2017). "Single case studies vs. multiple case studies: A comparative study".

Jamali, D. (2004). "A public-private partnership in the Lebanese telecommunications industry: Critical success factors and policy lessons", Public Works Management & Policy, 9(2), 103-119.

Kang, S., Mulaphong, D., Hwang, E. and Chang, C.-K. (2019), "Public-private partnerships in developing countries: Factors for successful adoption and implementation", International Journal of Public Sector Management, Vol. 32 No. 4, pp. 334-351.

Klassen, T.R., Cepiku, D., and Lah, T.J., (2015). Routledge Handbook of Global Public Policy and Administration.

Klijn, E. H., & Koppenjan, J. (2016). The impact of contract characteristics on the performance of public–private partnerships (PPPs). Public Money & Management, 36(6), 455-462.

Lima, S., Brochado, A., Marques, R. (2021). "Public-private partnerships in the water sector: A review", Utilities Policy, 69, 101182.

Linkov, I., Anklam, E., Collier, Z. A., DiMase, D., & Renn, O. (2014). Risk-based standards: integrating top–down and bottom–up approaches. Environment Systems and Decisions, 34, 134-137.

Liu J., Love P.E.D., Smith J., and Regan M., Palaneeswaran E., (2015). "Review of performance measurement: Implications for public–private partnerships", Built Environment Project and Asset Management, 5, 35–51.

Loxley, J. (2013). "Are public-private partnerships (PPPs) the answer to Africa's infrastructure needs?", Review of African Political Economy, 40(137), 485-495.

Marques, R. C., & Berg, S. (2011). Risks, contracts, and private-sector participation in infrastructure. Journal of construction engineering and management, 137(11), 925-932.).

Marshall, T., Beatty, H., and Cundall, S., (2021). "The Public-Private Partnership Law Review: United Kingdom", The Law Review.

Mouhammed, A. H. (2015). Quantitative Methods for Business and Economics. Routledge. Linneberg, M. S., & Korsgaard, S. (2019). Coding qualitative data: A synthesis guiding the novice. Qualitative research journal, 19(3), 259-270.

Mukherji, I., Eshwar, S., Srivastava, B. K., Jain, V., Chinna, S., and Kumar, V. (2022). "Emergency Preparedness and Modish Practices among Primary Healthcare Delivery Systems Facilitated through Public-private Partnership Models in a South Indian Metropolitan City: A Descriptive Cross-sectional Study", International Journal of Clinical Pediatric Dentistry, 15(2), 153-158.

Nahidi, S., Fountas, G., Sarvani, S. P., Sarwar, M. T., and Anastasopoulos, P. C. (2017). "Project discrepancies in roadway construction and preservation: A statistical analysis of public–private partnership contract types in the US", Frontiers in Built Environment, 3, 15.

Nyanyofio, J.G.T., Domfeh, K.A., Buabeng, T., Maloreh-Nyamekye, T. and Appiah-Agyekum, N.N. (2022), "Governance and effectiveness of public–private partnership in Ghana's rural-water sector", International Journal of Public Sector Management, Vol. 35 No. 7, pp. 709-732.

O'Flynn, J., (2021). "Where to for public value? Taking stock and moving on", International Journal of Public Administration, 1-11, 867–877.

Osei-Kyei, R. and Chan, A.P.C. (2021), "Risk Assessment of Public-Private Partnership Projects", in: International Best Practices of Public-Private Partnership, Springer, Singapore.

Polizzi L., (2017). "Cosa si intende per Partenariato Pubblico Privato? La situazione dopo il Codice degli appalti", Giurdanella, Riv. Dir. Amm, available at: https://www.giurdanella.it/2017/01/partenariato-pubblico-privato-co/ (accessed 20 February 2023).

Radović-Marković, M., & Alecchi, B. A. (2016). Qualitative methods in economics. Taylor & Francis.

Rashed, A. H., & Shah, A. (2021). The role of private sector in the implementation of sustainable development goals. Environment, Development and Sustainability, 23, 2931-2948.

Rossi, M., and Civitillo, R., (2014). "Public Private Partnerships: a general overview in Italy", Social and Behavioral Sciences 109, ScienceDirect, 140-149.

Russo T.V., (2007). "Il project financing, in Trattato di diritto civile del Consiglio Nazionale del Notariato", (diretto da) Perlingieri P., Napoli.

Sastoque, L.M., Arboleda, C.A., and Ponz, J.L., (2016). "A proposal for risk allocation in social infrastructure projects applying PPP in Colombia", Procedia Engineering,145, 1354–1361.

Shrestha, A., Tamošaitienė, J., Martek, I., Hosseini, M. R., & Edwards, D. J. (2019). A principal-agent theory perspective on PPP risk allocation. Sustainability, 11(22), 6455.

Tallaki, M. and Bracci, E. (2021), "Risk allocation, transfer and management in public–private partnership and private finance initiatives: a systematic literature review", International Journal of Public Sector Management, Vol. 34 No. 7, pp. 709-731.

Van Ham, H., and Koppenjan, J., (2001). "Building Public-Private Partnerships: Assessing and Managing Risk in Port Development", Public Management Review, 3(4), 593-616.

Verhoest, K., Petersen, O. H., Scherrer, W., & Soecipto, R. M. (2015). How do governments support the development of public private partnerships? Measuring and comparing PPP governmental support in 20 European countries. Transport Reviews, 35(2), 118-139.

Vespestad, M. K., & Clancy, A. (2021). Exploring the use of content analysis methodology in consumer research. Journal of Retailing and Consumer Services, 59, 102427.

Visconti, R.M., Doś, A. and Gurgun, A.P. (2017), "Public–Private Partnerships for Sustainable Healthcare in Emerging Economies", Leitão, J., de Morais Sarmento, E. and Aleluia, J. (Ed.) The Emerald Handbook of Public–Private Partnerships in Developing and Emerging Economies, Emerald Publishing Limited, Bingley, pp. 407-437.

Wettenhall, R. (2003). "The rhetoric and reality of public-private partnerships", Public organization review, 3, 77-107.

Xiang, P., Zhang, Q., Jiang, Q., and Liu, Z. (2022). "Operational risk allocation in urban rail transit public–private partnership projects", Frontiers in Environmental Science, 10, 1195.

Yin, R. K. (1995). "Case study research. Design and methods", Thousand Oaks CA: Sage.

Yin, R.K. (2009). "How to do better case studies", The SAGE handbook of applied social research methods, 2(254-282).

Zarco-Jasso, H., (2005). "Public–Private Partnerships: A Multidimensional Model for Contracting", International Journal of Public Policy, 1, 1/2, 22–40.

# THE MODERATING ROLE OF WRITTEN LANGUAGE ON PREFERENCE FOR USER INTERFACE DESIGN

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## ABSTRACT

The design of User Interfaces (UIs) is a crucial aspect of technology development and usage. UIs use signifiers such as words, symbols, or other forms of representation to support users in learning and memorizing the different features and controls that have to be operated in order to complete a task (Eytam, 2022). There is a growing body of evidence to suggest that cultural context plays a significant role in shaping the interaction between users and systems. Different cultures attach different meanings to similar signifiers such as color, iconography, layout, spatial organization, and language. For example, a red color can represent luck in some cultures and danger in others; users from different cultures may understand the icon of a 'trash can' differently; users from Western cultures may prefer a linear organization of elements, while users from Eastern cultures may prefer a more holistic organization. Finally, different script orientations, from left to right or from right to left, may have an effect on the users' preferences (e.g., Huang & Benbasat, 2010; Zhang & Mao, 2010). Additionality, previous research that explored the effect of cultural context on UI preference found that high or low cultural context effects preference for different design elements. Cultural context refers to the degree to which cultures convey meaning by elements other than words (Würtz, 2005). Users belonging to low-context cultures generally tend to prefer design elements such as textual components, while users from high-context cultures tend to prefer other elements such as icons (Kyriakoullis & Zaphiris, 2016; Shen et al., 2007; Barber & Barde, 1998).

Hebrew and Arabic are two languages that provide the perfect conditions for exploring the effect of cultural differences on UI preferences. While both system of writing are written from right to left, the shape of the letters is different (Abbas & Mesch, 2015). Hebrew letters have angular shapes and letters are not connected, but each letter is written as a separate unit. Arabic letters, on the other hand, have more curved shapes and are usually connected, so the writing has a more flowing appearance. This study aims at exploring the moderating effect of cultural context on preference for UI design. It suggests that because of the priming of visual representation of the written language that users mostly use, users tend to prefer different design elements. The contribution of this research lies within helping designers relate to cross-cultural usability issues in designing technological products for a global market.

A pilot study was conducted with 80 respondents (40 Hebrew-speaking and 40 Arabic-speaking, all respondents were college students who volunteered to answer an anonymous online survey). Respondents were asked to rank ten UI illustrations on a Likert scale (1-7) for usability, aesthetics, and their preference to each illustration. The UI illustrations varied in control color, shape, and size, and some also included frames and different design layouts. Two illustrations featured either textual components or icons. The results showed that, in general, Arabic speaking respondents tend to rank all UI illustrations as more usable and aesthetically pleasing compared to Hebrew-speaking respondents. They also judge designs with more controls and greater control diversity as more usable and more aesthetically pleasing. A subsequent study will use more UI illustrations to control for the confounding effect of several design elements presented together. Respondents will be asked to judge each design element separately. The main goals of this study will be to confirm and expand upon the findings of the pilot study, and to provide a more detailed insight into the moderating role of written language on preference for UI design.

*Keywords: User Interface, Design, Cultural Context, Textual Components.*

## REFERENCES

Abbas, R. and Mesch, G.S., 2015. Cultural values and Facebook use among Palestinian youth in Israel. Computers in Human Behavior, 48, pp.644-653.

Barber, W. and Badre, A., 1998, June. Culturability: The merging of culture and usability. In Proceedings of the 4th Conference on Human Factors and the Web (Vol. 7, No. 4, pp. 1-10).

Eytam, E., 2022. Assessing the Sub-Dimensions of Symbolism in the User Interfaces of Interactive Products. International Journal of Human–Computer Interaction, pp.1-15.

Huang, L., & Benbasat, I. (2010). User interface design guidelines for cross-cultural e-commerce websites. Information Systems Research, 21(4), pp.743-761.

Kyriakoullis, L. and Zaphiris, P., 2016. Culture and HCI: a review of recent cultural studies in HCI and social networks. Universal Access in the Information Society, 15(4), pp.629-642.

Shen, S.T., Prior, S.D., Chen, K.M. and You, M.L., 2007, July. Chinese web browser design utilising cultural icons. In International Conference on Usability and Internationalization (pp. 249-258). Springer, Berlin, Heidelberg.

Würtz, E., 2005. Intercultural communication on web sites: A cross-cultural analysis of web sites from high-context cultures and low-context cultures. Journal of computer-mediated communication, 11(1), pp.274-299.

Zhang, J. J., & Mao, J. (2010). Cultural differences in web design: A study of web pages of different cultures. Interacting with Computers, 22(5), pp.369-378.

# A SYSTEMIC ANALYSIS OF INNOVATION ECOSYSTEMS THROUGH CAUSAL MAPPING AND NETWORK ANALYSIS

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## ABSTRACT

## PURPOSE

This study applies systems mapping and network analysis techniques to investigate the performance of European innovation ecosystems, laying out the structural drivers and actor interrelationships in national and regional economies. In this context, within a quintuple helix model, entrepreneurial universities serve as key hubs for knowledge creation and outreach and for promoting economic and social growth. Indeed, besides the triple helix model proposed by Etzkowitz and Leydesdorff (2000) where governments, industry, and universities are all seen as active advocates of innovation and knowledge, a fourth and fifth ones have been increasingly recognized by scholars (Bresciani *et al.*, 2021; Carayannis *et al.*, 2019; Galvao *et al.*, 2019) for including the bottom-up interactions and initiatives promoted by civil society (i.e., the fourth helix) within the natural environment (i.e., the fifth helix).

## RESEARCH DESIGN

To achieve our aim, we performed a two-step research for investigating the European Innovation Scoreboard (EIS), considered a relevant case to be analyzed for capturing the different themes and indicators characterizing the structure of European national innovation systems (European Commission, 2021). Indeed, since 2001 the EIS represents the annual observatory conducted by the European Commission to provide "a comparative assessment of the research and innovation performance of the EU Member States and selected third countries, and the relative strengths and weaknesses of their research and innovation systems" (European Commission, 2021, p. 6). So, adopting a five helices perspective, we first mapped the different indicators of the EIS and built a causal map to identify the different causal relationships emerging from the analysis of how each indicator and sub-indicator was built. Secondly, we converted the causal map into a directed unweighted graph and analyzed it through network analysis to identify the different leverage points characterizing the system.

Figure 1. The causal map of the EIS.
Source: own elaboration

## RESULTS

The causal map showing the different intertwined relationships characterizing European national innovation systems is shown in Figure 1, where positive causal relationships are depicted in blue and negative causal relationships in red. Starting from the causal map shown in Figure 1, we were able to transpose it into an unweighted directed graph, which has been constructed and analyzed using Gephi. The resulting network included 79 nodes and 148 edges. Thus, to identify its different leverage points, we analyzed the model calculating both topological measures of the network and centrality measures of each variable. Considering, for example, the nodes' degree centrality several ones are not affected by other variables (low score of in-degree centrality) and only a few hubs are present (i.e., skilled and educated human capital, attractive research system, innovation capabilities), suggesting where specific policies could more probably produce results. In contrast, only one node has an out-degree of 0 (i.e., environmental sustainability) and one node has the maximum out-degree value of 8 (i.e., gross domestic product or GDP). For instance, this means that acting on GDP can impact large parts of the model. Conversely, environmental sustainability does not represent a good leverage point.

## IMPLICATIONS

Although "systems" are often mentioned in the literature on innovation and national/regional economic growth, systems thinking and problem-structuring techniques are not used as frequently. Thus, operationally based mappings that connect the structure of innovation systems to behavior and potential policy leverage points (Meadows, 1999) leave innovation models under-theorized (Arthur *et al.*, 2022; Maruccia *et al.*, 2020). In order to fill this gap, this study applies a system mapping technique to investigate European innovation ecosystems. In this sense, we emphasize both the value of the process itself, which combined system mapping techniques and network analysis, as well as the identification of the different leverage points that characterize the way the European Commission assesses and evaluates the performance of European national innovation systems.

Shedding light on the potential effects of specific actions to be planned, the methodology proposed in this work has the potential to be an effective decision-making tool. Hence, combining the mapping technique with network analysis might be particularly helpful in providing a holistic perspective of the different intertwined elements that characterize European innovation ecosystems. In this sense, the result of this study could pave the way for encouraging collaborative governance processes among the different stakeholders constituting the quintuple helix model of innovation, especially highlighting the role played by entrepreneurial universities. Furthermore, this study highlights how historical data can be used to implement effective performance management systems and used to

identify leverage points that can be operated to effectively assess the relative strengths and weaknesses of each national innovation system, better-directing decisions and political agendas.

*Keywords: quintuple helix, national innovation systems, system thinking, network analysis, causal mapping*

## REFERENCES

Arthur, D., Moizer, J. and Lean, J. (2022), 'A systems approach to mapping UK regional innovation ecosystems for policy insight', Industry and Higher Education, SAGE Publications Sage UK: London, England, p. 09504222221115977.

Bresciani, S., Puertas, R., Ferraris, A., & Santoro, G. (2021), 'Innovation, environmental sustainability and economic development: DEA-Bootstrap and multilevel analysis to compare two regions', Technological Forecasting and Social Change, Vol. 172, 121040.

Carayannis, E.G., Grigoroudis, E., Stamati, D. and Valvi, T. (2019), 'Social business model innovation: A quadruple/quintuple helix-based social innovation ecosystem', IEEE Transactions on Engineering Management, IEEE, Vol. 68 No. 1, pp. 235–248.

Etzkowitz, H. and Leydesdorff, L. (2000), 'The dynamics of innovation: From National Systems and "mode 2" to a Triple Helix of university-industry-government relations', Research Policy, Vol. 29 No. 2, pp. 109–123.

European Commission. (2021), European Innovation Scoreboard.

Galvao, A., Mascarenhas, C., Marques, C., Ferreira, J. and Ratten, V. (2019), 'Triple helix and its evolution: a systematic literature review', Journal of Science and Technology Policy Management, Vol. 10 No. 3, pp. 812-833

Maruccia, Y., Solazzo, G., Del Vecchio, P. and Passiante, G. (2020), 'Evidence from Network Analysis application to Innovation Systems and Quintuple Helix', Technological Forecasting and Social Change, Elsevier, Vol. 161, p. 120306.

Meadows, D. (1999), 'Leverage Point: Places to Intervene in a System', Sustainability Institute Hartland, VT, pp. 1–19.

# ECO-INNOVATION AND KNOWLEDGE MANAGEMENT SYSTEM IN THE IRANIAN SMES

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## ABSTRACT

## INTRODUCTION

Today's small and medium-sized enterprises (SMEs) have a key role in innovation and benefitting their economies and communities (Van Auken *et al.,* 2021; Alamolhodaei and Ardakani, 2015). Consequently, to compete and support community social and environmental needs, SMEs must adapt their organizational and relational capabilities by developing dynamic capabilities to support and continuously provide new products and services or improve existing ones (Ramadani *et al*., 2019). To reach a competitive advantage and support social and environmental needs, SMEs must grow the ability to effectively use existing knowledge and acquire new knowledge for new products and processes (Thrassou *et al*., 2012). Therefore, knowledge management is concerned with identifying and influencing knowledge to expand innovation processes (Darroch, 2005), and, as a result, the knowledge management system (KMS) can play an influential role in Eco-innovation (EI) in SMEs.

## LITERATE REVIEW

Much research has been done in the field of factors affecting EI. Some researchers have suggested the impact of knowledge-based information technology systems (Del Giudice and Della Peruta, 2016), and others have suggested innovation management (Laursen and Salter, 2006). However, studies have yet to investigate the impact of open innovation (OI) and KMS on EI. In addition, the number of studies examining and studying the role of mediators and interventionists is minimal. Santoro *et al*. (2017) show a recursive process between internal knowledge and innovative capabilities. Therefore, they argue that the KMS increases innovative capabilities by developing internal knowledge management capabilities. Moreover, Ghaedamini Harouni *et al*. (2021) showed that internal processes reinforce the relationship between outbound OI and KM, and external processes mediate the relationship between inbound innovation and knowledge management. Also, Martinez-Conesa *et al*. (2017) believe that knowledge management capabilities and environmental scanning directly affect open innovation capabilities.

## PURPOSE

The present research aims to show that innovation depends profoundly on knowledge and its management systems and should be an essential element of any SME's social and economic success. Thus, the research questions are: How can the knowledge management system support Eco-innovation, and how is it increasingly a cultural value on the same level as competitive ones?
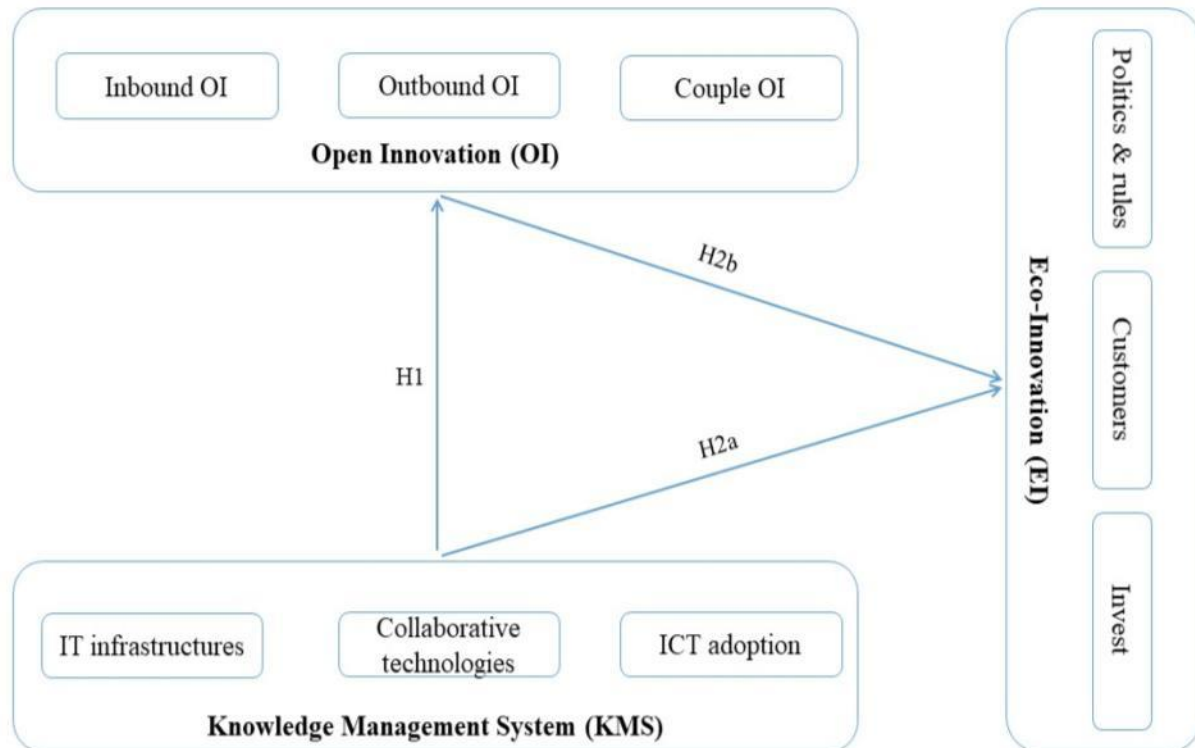


Figure 1. Conceptual framework (Source: authors' elaboration)

## EXPECTED RESULTS AND CONTRIBUTIONS

Prevalently in the COVID-19 era, SMEs from many different countries, adopting a spontaneous shared approach, have mobilised knowledge, advancing our learning and fostering our progress against social and economic issues. This resource-sharing process helped to introduce or adapt products answering to social needs and highlighting a scientific context called "Social Open Innovation" (SOI) (Chesbrough, 2020; Basile *et al*., 2022).

On these bases, the research interests focus on the growing interest and awareness of innovation and KMS in Iran. Based on the literature review, the current research examines the perspectives, shown in the below framework, of Iranian SMEs to answer the research questions:

**H1:** KMS significantly impact OI in SMEs.

**H2a:** KMS significantly impact EI in SMEs.

**H2b:** KMS significantly impact EI with the mediator role of OI in SMEs.

*Keywords: Knowledge Management System (KMS), Eco-Innovation (EI), Open Innovation (OI), Small and Medium-Sized Enterprises (SMEs).*

## REFERENCES

Alamolhodaei, S. M. A. and Fotouhi Ardakani, M. (2015), "Investigating the Effective Factors on Entering into International Markets by Presenting the Local Islamic Model", Academic Journal of Economic Studies, Vol. 1 No. 1, pp. 22–34.

Basile, G., Fotouhi Ardakani, M., Mazzitelli, A. and Sakka, G. (2022), "Innovation and corporate social responsibility during the Covid-19 in Ardakan (Iran)", Management Decision, Vol. 60 No. 10, pp. 2743-2769.

Chesbrough, H.W. (2020), Open Innovation Results: Going beyond the Hype & Getting down to Business, Oxford University Press: Oxford, UK.

Darroch, J. (2005), "Knowledge management, innovation and firm performance", Journal of Knowledge management, Vol. 9 No. 3, pp. 101–115.

Del Giudice, M., and Della Peruta, M. R. (2016), "The impact of IT-based knowledge management systems on internal venturing and innovation: a structural equation modeling approach to corporate performance", Journal of Knowledge Management, Vol. 20 No.3.

Ghaedamini Harouni, A., Babaeefarsani, M. and Sadeghi de cheshmeh, M. (2021), "Surveying the mediating role of knowledge management processes in open innovation and knowledge management implementation: Food industry of Shahrekord industrial town (A case study)", Sciences and Techniques of Information Management, Vol. 7 No. 2, pp. 111-140.

Laursen, K., and Salter, A. (2006), "Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms", Strategic management journal, Vol. 27 No. 2 pp.131-150.

Martinez-Conesa, I., Soto-Acosta, P. and Carayannis, E.G. (2017), "On the path towards open innovation: assessing the role of knowledge management capability and environmental dynamism in SMEs", Journal of Knowledge Management, Vol. 21 No. 3, pp. 553-570.

Ramadani, V., Hisrich, R. D., Abazi-Alili, H., Dana, L., Panthi, L. and Abazi-Bexheti, L. (2019), "Product innovation and firm performance in transition economies: A multi-stage estimation approach", Technological Forecasting and Social Change, Vol. 140, pp.271–280.

Santoro, G., Vrontis, D., Thrassou, A. and Dezi, L., (2017), "The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity", Technological Forecasting & Social Change, Vol. 136, pp. 347-354.

Thrassou, A., Vrontis, D., Chebbi, H. and Yahiaoui, D. (2012), "A preliminary strategic marketing framework for new product development", Journal of Transnational Management, Vol. 17 No. 1, pp.21-44.

Van Auken, H. E., Fotouhi Ardakani, M., Carraher, S. and Khojasteh Avorgani, R. (2021), "Innovation among entrepreneurial SMEs during the COVID-19 crisis in Iran", Small Business International Review, Vol. 5 No. 2, p. e395.

# CEO GENDER AND FIRM RISK: EMPIRICAL EVIDENCEC FROM CHINESE LISTED COMPANIES

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## ABSTRACT

*Length of the Abstract*

With the development of the economy and the popularization of the concept of equality between men and women, women's political and economic status in society has gradually improved, and research on risk behaviour of female CEOs has become more and more extensive. However, in developing countries, the proportion of women in senior management team is still far lower than that of men compared to the developed world. The main reason for this result is the stereotyped prejudice against women in the traditional cognition. Therefore, the target market of this study will be shifted from the developed countries to the developing countries, and China, the second largest economy in the world, will be the research market to represent the developing countries.

This research first reviews the existing theories, such as agency theory (Jensen and Mmecking, 1976) and upper echelons theory (Hambrick and Mason, 1984), and then refers to the literature on the impact of different personal characteristics of CEO on corporate decision-making (Pamler and Wiseman, 1999) and the impact of CEO gender on firm risk (Fehr-Duda et al. 2006), which lays a theoretical foundation for the research topic of this essay and puts forward two hypotheses on this basis.

This study adopts data of China's A-share listed companies between 2005 and 2015 as the sample for empirical research. Firstly, Stata 17 is used to screen the original data, and then OLS regression model is adopted to analyze the sample. In order to reduce the influence of company characteristics, PSM model

is introduced to match almost the same sample of companies managed by male CEOs for companies managed by female CEOs, and then regression analysis is conducted for these two groups of samples to draw a relatively reasonable conclusion.

In the process of empirical analysis, this study refers to the existing literature to select reasonable corporate data as the measurement index of the dependent variable - firm risk, leverage and σ (ROA), and introduced state, CEO ownership, cash flow rights, ROA, sales growth, Ln(Size), Ln(1+Age) and tangibility as the measurement indicators of the company's characteristics.

Through multiple regression analysis, the research findings show that in China's A-share listed companies, CEO gender has a significant correlation with corporate risk, and the risk of companies managed by female CEOs is lower than that of companies managed by male CEOs.

| Sheet 4--Pearson Correlation Analysis | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Leverage | σ(ROA) | CEOg | State | CEO owners | Cash flow | ROA | Sales growth | Ln(Size) | Ln(1+Age) | Tangibility |
| Leverage | 1 | | | | | | | | | | |
| σ(ROA) | 0.045*** | 1 | | | | | | | | | |
| CEOg | -0.026** | -0.035*** | 1 | | | | | | | | |
| State | 0.267*** | 0.104*** | -0.070*** | 1 | | | | | | | |
| CEO ownership | -0.176*** | -0.079*** | 0.01 | -0.303*** | 1 | | | | | | |
| Cash flow rights | 0.076*** | -0.001 | 0.037*** | 0.223*** | -0.022** | 1 | | | | | |
| ROA | -0.219*** | 0.054*** | 0.012 | -0.039*** | 0.039*** | 0.105*** | 1 | | | | |
| Sales growth | 0.089*** | 0.030*** | 0.001 | -0.055*** | 0.063*** | -0.039*** | 0.200*** | 1 | | | |
| Ln(Size) | 0.508*** | -0.189*** | -0.022** | 0.268*** | -0.183*** | 0.162*** | 0.052*** | 0.084*** | 1 | | |
| Ln(1+Age) | 0.05*** | 0.117*** | 0.008 | 0.109*** | -0.064*** | -0.053*** | -0.011 | -0.043*** | -0.061*** | 1 | |
| Tangibility | 0.149*** | 0.115*** | -0.044*** | 0.230*** | -0.168*** | 0.120*** | -0.036*** | -0.119*** | 0.049*** | 0.093*** | 1 |

| Sheet 5--The Regression between CEO gender and Firm Risk | | | | |
|---|---|---|---|---|
| VARIABLES | Risk1-Leverage | | Risk2-σ(ROA)*100 | |
| | (1) | (2) | (3) | (4) |
| CEOg | -0.020** | -0.012** | -0.226*** | -0.098*** |
| | (-2.645) | (-2.030) | (-5.032) | (-2.581) |
| State | | 0.021*** | | 0.008 |
| | | (4.992) | | (0.249) |
| CEO ownership | | -0.018 | | -0.158*** |
| | | (-1.541) | | (-3.021) |
| Cash flow rights | | -0.000*** | | -0.002*** |
| | | (-2.859) | | (-2.774) |
| ROA | | -1.741*** | | -0.044 |
| | | (-33.336) | | (-0.123) |
| Sales growth | | 0.070*** | | -0.024 |
| | | (12.585) | | (-0.677) |
| Ln(Size) | | 0.093*** | | 0.01 |
| | | (60.203) | | (0.849) |
| Ln(1+Age) | | 0.029*** | | 0.015 |
| | | (4.868) | | (0.581) |
| Tangibility | | 0.155*** | | 0.023 |
| | | (12.243) | | (0.277) |
| Constant | 0.370*** | -1.748*** | 0.490*** | -1.251 |
| | (184.064) | (-40.190) | (29.515) | (-0.367) |
| Std.Err Control | Yes | Yes | Yes | Yes |
| Firm fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| Industry fixed effects | No | Yes | No | Yes |
| Adjusted R-sqauared | 0.001 | 0.462 | 0.001 | 0.639 |
| Observations | 9,656 | 9,656 | 9,656 | 9,656 |

***represents 1% significance level, **represents 5% significance level, * represents 10% significance l

| Sheet 6--Balance Test | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VARIABLES | Unmatched | Mean | | %bias | %reduct | t-test | | V(C)/ |
| | Matched | Treated | Control | | \|bias\| | T | P>\|t\| | V(T) |
| State | U | 0.1180 | 0.2404 | -32.3 | | -6.94 | 0.000 | -- |
| | M | 0.1184 | 0.1042 | 3.8 | 88.3 | 0.79 | 0.430 | -- |
| CEO ownership | U | 0.0795 | 0.0745 | 4.0 | | 0.95 | 0.343 | 1.01 |
| | M | 0.0798 | 0.0869 | -5.6 | -42.2 | -0.94 | 0.350 | 0.84* |
| Cash flow right | U | 37.2040 | 35.0710 | 15.2 | | 3.60 | 0.000 | 0.96 |
| | M | 37.1140 | 36.5460 | 4.1 | 73.4 | 0.71 | 0.478 | 0.95 |
| ROA | U | 0.0408 | 0.0394 | 4.8 | | 1.15 | 0.248 | 1.04 |
| | M | 0.0408 | 0.0401 | 2.6 | 46.5 | 0.45 | 0.653 | 1.07 |
| Sales growth | U | 0.2073 | 0.2063 | 0.4 | | 0.09 | 0.927 | 1.10 |
| | M | 0.2074 | 0.1970 | 3.5 | -833.3 | 0.61 | 0.542 | 1.10 |
| Ln(Size) | U | 21.6020 | 21.7000 | -9.2 | | -2.19 | 0.028 | 1.00 |
| | M | 21.6050 | 21.6100 | -0.4 | 95.6 | -0.07 | 0.942 | 1.12 |
| Ln(1+Age) | U | 2.8893 | 2.8809 | 3.4 | | 0.83 | 0.405 | 1.11 |
| | M | 2.8884 | 2.8931 | -1.9 | 43.6 | -0.33 | 0.738 | 1.11 |
| Tangibility | U | 0.1945 | 0.2210 | -18.7 | | -4.35 | 0.000 | 0.89 |
| | M | 0.1949 | 0.1958 | -0.7 | 96.5 | -0.12 | 0.905 | 1.08 |

*Keywords: CEO, firm risk, gender diversity, corporate governance, financial performance.*

# REFERENCES

Fehr-Duda, H., De Gennaro, M., & Schubert, R. (2006). Gender, financial risk, and probability weights. Theory and decision, 60(2), 283-313. https://doi.org/10.1007/s11238-005-4590-0

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. The Academy of Management Review, 9(2), 193–206. https://doi.org/10.2307/258434

Jensen, M. C., &#38; Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3 (4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Palmer, T. B., & Wiseman, R. M. (1999). Decoupling risk taking from income stream uncertainty: A holistic model of risk. Strategic Management Journal, 20(11), 1037-1062. http://www.jstor.org/stable/3094030

# ENCOURAGING VALUE-BASED HEALTHCARE VIA ACTIVITY-BASED COSTING ANALYSIS: THE ISCHEMIC STROKE PATHWAY CASE

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## ABSTRACT

## POSITIONING, GAP AND PURPOSE

Implementation of current volume-value reimbursement strategies has resulted in an inability to reduce waste and an increase in healthcare spending (Puumalainen et al., 2020). According to Etges et al. (Etges et al., 2022), in order to provide value-based medical care, the healthcare system should have comprehensive knowledge of patient-specific costs. The COVID-19 pandemic has brought to light the need for healthcare organisations to determine where and how costs are incurred at the patient level. On the other hand, the number of people affected by ischemic stroke is on the rise, and hospitals continue to shoulder the majority of the costs associated with treating this condition (Yarnoff et al., 2019; Luengo-Fernandez et al., 2020; Morrow et al., 2023).

In general, the total hospital costs (direct costs, indirect costs, and other costs) result from the addition of the number of stay days and outpatient visits. In addition, scientific literature demonstrates that unit costs are not estimated at the level of the individual patient, but rather at the level of the department as averages of specialties (Tan et al., 2009; Hennrikus et al., 2012). Diagnosis-related groups (DRG) are currently the most prevalent method for estimating the cost of standard hospital care (Busse et al., 2013; Puumalainen et al., 2020). The objective of the DRG methodology is to provide the value of the costs based on the average use of the necessary resources per diagnosis group, which is inadequate in terms of treatment costs at the patient level (Royle et al., 2004; Antikainen et al., 2005; Schreyogg et al., 2006). In the case of diagnosing an ischemic stroke, the DRG system NR accounts for only 34% of treatment costs (Evers et al., 2002).

The Activity-Based Costing (ABC) technique was introduced into the healthcare system to analyse a hospitalisation episode through a series of care activities. The variables that are precisely estimated are the amount of time and resources utilised in the execution of each activity (Albergo, 2020; Purnamasari et Nuryadi, 2020; Cardoso et al., 2023).

In order to support value-based reimbursement strategies by healthcare delivery systems, the purpose of this study is to highlight the managerial and scientific significance of the ABC method's introduction into the healthcare system.

## RESEARCH DESIGN AND METHODOLOGY

The case study under consideration involves the admission of a patient from the Emergency Department, with the goal of examining the clinical path of patients with ischemic stroke. The type of this research was a survey using a cross-sectional approach. The data were gathered at the "Di Venere" Hospital neurology department in 2017 in Apulia region, Italy. The cost data used in this study include direct costs (medical device costs, medical staff salaries) and indirect costs (building data, non-medical equipment data, hospital transport data), operating costs (salaries of non-medical staff, non-medical consumables, overheads), maintenance costs, and other costs. The above-mentioned cost data types have been identified for each phase and sub-phase of the clinical pathway in question.

## FINDINGS

In 2017, the sample consisted of 207 patients who stayed an average of 8.77 days in the hospital. Using the ABC, the average cost per day of hospitalisation was 239 € and the average cost per hospitalisation episode was 3811 €. The ischemic stroke path within the healthcare structure has been characterised by three major phases and their respective sub-phases, as determined through interviews with medical staff. On this basis, an attempt has been made to provide a preliminary evaluation of the efficiency of the organisation of activities, both from the perspective of the required resources and the parameters of consumption. The first phase, titled "Access to the Department," consisted of the following activities: compilation of clinical records, detection of vital signs, administration and management of diagnostic clinical tests. The second phase is "Hospitalisation and Monitoring," and its sub-phases are concerned with the therapeutic treatment of the patient during hospitalisation. The final phase, "Patient Transfer or Discharge," is characterised by the hospital discharge letter written by medical workers. To conduct a punctual analysis of the ABC, the time in minutes required to complete each step and the cost of individual performances were determined. The total cost of the three phases described above, taking into account an average stay of 8.77 days, was €3,329,927 plus maintenance and other costs.

The average cost of a hospitalisation episode was 1.03% higher with ABC pricing than DRG.

## IMPLICATIONS FOR ACADEMIC AND PRACTITIONERS

On the basis of our findings, we intend to promote the ABC method within the healthcare system (Albergo, 2020; Puumalainen et al., 2020; Cardoso et al., 2023) and add case studies to the scant scientific literature on this subject. In fact, our contribution will enhance the comparison between DRG reimbursement rates and the cost analysis resulting from the application of the ABC method. As a managerial implication, the presented results about specific information and the successive analysis of

the various cost typologies of the investigated clinical path provide a real-world illustration of how to propose reimbursement strategies to achieve increasingly sustainable health policies.

*Keywords: Activity-based costing, Health care costs, Reimbursement strategies, Value-based healthcare, Clinical pathway, Ischemic stroke.*

## REFERENCES

Albergo, F. (2020), Health Activity Based Costing, L'analisi economica delle prestazioni sanitarie, Giuffrè Francais Lefebvre.

Antikainen, K., Roivainen, T., Hyvarinen, M., To, Giuffrivonen, J., and Karri, T. (2005), "Activity-based costing process of a day-surgery unit – from cost accounting to comprehensive management", Front. E-business Res. Vol. 2, pp. 775–785.

Busse, R., Geissler, A., Aaviksoo, A., Cots, F., Hakkinen, U., Kobel, C., et al., (2013), "Diagnosis related groups in Europe: moving towards transparency, efficiency, and quality in hospitals? ", BMJ, Vol. 346.

Cardoso, R. B.; Marcolino, M. A. Z., Marcolino, M. S., Fortis, C. F.; Moreira, L. B.; Coutinho, A. P.; Clausell, N. O.; Nabi, J.; Kaplan, R. S.; Etges, A. P. B.; Polanczyk, C. A. (2023), "Comparison of COVID-19 hospitalization costs across care pathways: a patient-level time-driven activity-based costing analysis in a Brazilian hospital", BMC Health Services Research, Vol. 23, No. 1.

Etges, A. P., Marcolino, M. A. Z., Ogliari, L. A., De Souza, A. C.; Zanotto, B. S.; Ruschel, R; Safanelli, J.; Magalhães, P.; Diegoli, H.; Weber, K. T.; Araki, A. P. (2022), "Nunes, A. Moving the Brazilian ischaemic stroke pathway to a value-based care: introduction of a risk-adjusted cost estimate model for stroke treatment", Health Policy and Planning, Vol. 37, No. 9, pp. 1098 – 1106.

Evers, S., Voss, G., Nieman, F., Ament, A., Groot, T., Lodder, J. et al. (2002), "Predicting the cost of hospital stay for stroke patients: the use of diagnosis-related groups", Health Pol. Vol. 61, pp. 21–42.

Hennrikus, W. P., Waters, P. M., Bae, D. S., Sohrab, V. S., Shah, A. S. (2012), "Inside the value revolution at Children's Hospital Boston: time-driven activity-based costing in orthopaedic surgery", Orthop. J. Harvard Med. School Vol. 14, pp. 44–49.

Luengo-Fernandez, R., Violato , M., Candio, P., Lea, J. (2020), "Economic burden of stroke across Europe: A population-based cost analysis", Eur Stroke J, Vol. 5, No. 1, pp. 17-25.

Morrow, C., Woodbury, M., Simpson, A. N., Almallouhi, E., Simpson, K. N. (2023), "Determining the Marginal Cost Differences of a Telehealth Versus an In-person Occupational Therapy Evaluation Session for Stroke Survivors Using Time-driven Activity-based Costing", Archives of Physical Medicine and Reha-bilitation, Vol. 104, No. 4, pp. 547–553.

Purnamasari, T., Nuryadi (2020), "Cost of Treatment of Ischemic Stroke Based on Clinical Pathway and Unit Cost by Activity-Based Costing Method in Hospital "Bt"", Advances in Health Sciences Research, Vol. 22.

Puumalainen, A.; Elonheimo, O.; Brommels, M. (2020), "Costs structure of the inpatient ischemic stroke treatment using an exact costing method", Heliyon, Vol. 6, No. 6, e04264.

Royle, M., Callen, J., Craig, M. (2004), "Should there be an age split for stroke DRGs? Analysing a large clinical data set of a principal teaching hospital over a five-year period", Health Inf. Manag. J. Vol. 32, pp. 5–12.

Schreyogg, J., Stargardt, T., Tiemann, O., Busse, R. (2006), "Methods to determine reimbursement rates for diagnosis related groups (DRG): a comparison of nine European countries", Health Care Manag. Sci. Vol. 9, pp. 215–223.

Tan, S. S., Rutten, F. F., van Ineveld, B. N., Redekop, W. K., Hakkaart-van Roijen, L. (2009), "Comparing methodologies for the cost estimation of hospital services", Eur. J. Health Econ. Vol. 10, pp. 39–45.

Yarnoff, B., Khavjou, O., Elmi, J., Lowe-Beasle, K., Bradley, C., Amoozegar, J. et al. (2019), "Estimating Costs of Implementing Stroke Systems of Care and Data-Driven Improvements in the Paul Coverdell National Acute Stroke Program", Prev Chronic Dis, Vol. 16, E134.

# DO ANTI-CONSUMPTION PRACTICES LEAD TO WELL-BEING? THE MEDIATING ROLE OF TIME ORIENTATION

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## ABSTRACT

This study investigates the relationship between anti-consumption and subjective well-being, as well as the function of time orientation as a mediator. People have always carefully considered how and how much they consume (Newholl et al., 2015). Veblen's 1899 critique of conspicuous consumption and Thoreau's Calvinist material morality of efficiency, frugality, and self-responsibility, which paved the way for the voluntary simplicity movement of the 19th century, are examples of such deliberations (Rudmin and Kilbourne 1996). Numerous consumer culture scholars have recently acknowledged the intensification of consumerism as a socio-cultural and economic practice, as well as the expansion of market logics for governing society under neoliberal capitalism (Kravets et al., 2018). Miles (2018) and Eckhardt et al. (2018) emphasize that consumer culture is associated with increased individuation and feelings of emptiness, whereas sustainability scholars emphasize the need for society to consume less (Evans 2017) in light of our current environmental challenges. Similarly, such ethical, political, and/or ecological concerns motivate consumers who can afford consumerism to choose to reduce their consumption levels; this is a form of anti-consumerism. Anti-consumption includes intentional, volitional behaviors and attitudes against consumption (Chatzidakis and Lee 2013; Cromie and Ewing 2009; Hutter and Hoffmann 2013; Lee et al. 2009).

Current research suggests that anti-consumption may have a positive effect on wellbeing at both the societal and individual levels (Hoffmann and Lee, 2016; Lee and Ahn, 2016). In fact, a meta-analysis has confirmed the association between certain anti-consumption-based behaviors (e.g., voluntary simplicity) and subjective well-being (Rich et al., 2017). Nevertheless, contradictory evidence suggests a more complex picture. There is evidence that anti-consumption can have a negative (Iyer and Muncy, 2016) or neutral (Seegebarth et al., 2016) effect on happiness under specific conditions. Additional research suggests that such effects may depend on specific conditions, such as an individual's perception of control over consumption (Iyer and Muncy, 2016) or a consumer's cognitive need (Hüttel et al., 2020). Different anti-consumption practices and anti-consumption values have also been distinguished (Seegebarth et al., 2016; Oral and Thurner, 2019). Therefore, a better comprehension of the effect of anti-consumption on well-being and how this effect occurs is required;

this paper addresses one of these research gaps. Moreover, existing research indicates that how consumers perceive and utilize their time can impact their subjective wellbeing (Rudd et al., 2019). Determining the time-related conditions under which anti-consumption may impact subjective wellbeing necessitates a review of the vast literature on time. Despite the abundance of research indicating that how consumers spend and perceive time influences consumption behavior, there is little cross-fertilization between time and anti-consumption research, which is another research gap that this work addresses.

## THE MEDIATING ROLE OF SPENDING TIME IN MEANINGFUL WAYS

Evidence (Boström, 2021) suggests that anti-consumption may increase the individuals' available time which would be otherwise spent on research for available products and offers, or trips to the stores. In fact, freeing time has been acknowledged as one of the drivers for adopting anti-consumption-based lifestyles, such as voluntary simplicity (Alexander and Ussher 2012; Rebouças and Soares 2021). We propose that whether adopting an anti-consumption lifestyle will lead to an increase in consumers' wellbeing will depend on how consumers decide to spend their time. In their conceptual paper, Lee and Ahn (2016) highlight four anti-consumption values as potential sources of higher subjective wellbeing: greater control over consumption, macro level concerns, low material desire, and intrinsic source of happiness. Latter, Oral and Thurner (2019) empirically tested this framework and found that only low material desire and intrinsic source of happiness were significantly related to subjective wellbeing. Low material desire implies, among other, that individuals prefer to spend their resources in experiences rather than acquiring items (Lee and Ahn 2016). Intrinsic source of happiness manifests the fact that anti-consumers prefer to devote their time to activities that enhance self-development and guarantee quality time with friends and family (Zavestoski 2002, Lee and Ahn 2016). This evidence points that individuals who score high on anti-consumption attitudes may be more willing to spend time in meaningful ways.

Spending time in meaningful ways has been proposed as a key antecedent of subjective wellbeing (Rudd et al. 2019). Individuals usually fail to achieve meaning and wellbeing when time is spent on consumption activities (Mead et al. 2022). Consumption activities are perceived as lacking authenticity (Zavestoski 2002), extrinsically rather than intrinsically rewarding and allow companies to profit at expenses of social good (Mead et al. 2022). We argue that if the available time is depleted for example in front of the TV, there is no reason to expect that this lifestyle will lead to happier consumers. If, however, the 2,5 hours per week consumers spend shopping (US Census 2003) and the 5 hours per week we spend on average scrolling through websites and social media pages looking for stuff to buy (Young 2021) are spent more meaningfully, e.g., by spending time with friends, investing time to

exercise, sleep or relax there are good reasons to expect that it will lead to increased well-being. Thus, it is our premise that, for anti-consumers' subjective wellbeing being affected, it is necessary that they engage on activities where they spend time on meaningful ways.

## THE MODERATING ROLE OF LONG-TERM ORIENTATION

Evidence (Bostrom, 2021) indicates that anti-consumption may free up time that individuals would have otherwise spent researching available products and offers or making visits to the store. In fact, liberating time has been recognized as one of the motivating factors for adopting anti-consumption-based behaviors, such as voluntary simplicity (Alexander and Ussher 2012; Reboucas and Soares 2020). We propose that whether adopting a low-consumption lifestyle will increase consumers' happiness depends on how they choose to utilize their time. In their conceptual paper, Lee and Ahn (2016) identify four anti-consumption values as potential sources of greater subjective wellbeing: greater control over consumption, macro-level concerns, low material desire, and intrinsic sources of pleasure. This framework was empirically tested by Latter, Oral, and Thurner (2019), who discovered that only low material desire and intrinsic source of happiness were substantially related to subjective well-being. Low material desire suggests, among other things, that people prefer to invest their resources in experiences over the acquisition of material goods (Lee and Ahn, 2016). The intrinsic source of pleasure is demonstrated by the preference of anti-consumers for activities that promote self-development and ensure quality time with friends and family (Zavestoski 2002, Lee and Ahn 2016). Individuals with high anti-consumption attitudes may be more willing to devote time in meaningful ways, according to this evidence.

According to Rudd et al. (2019), spending time in meaningful ways is an important antecedent of subjective wellbeing. When time is devoted on consumption activities, meaning and happiness are typically not achieved (Mead et al., 2022). Consumption activities are perceived as lacking authenticity (Zavestoski, 2002), as extrinsically rewarding as opposed to intrinsically rewarding, and as allowing corporations to profit at the expense of social good (Mead et al., 2022). We argue that if consumers' available time is depleted, such as by watching television, there is no reason to expect that they will be cheerful. If, however, the 2.5 hours per week that consumers spend shopping (US Census 2003) and the 5 hours per week that we spend on average scrolling through websites and social media pages looking for things to buy (Young 2021) are spent more meaningfully, e.g., by spending time with friends, investing time to exercise, sleep, or relax, there are good reasons to believe that it will result in increased well-being. Thus, our premise is that anti-consumers must engage in activities where they invest time in meaningful ways for their subjective wellbeing to be affected.

## METHODOLOGY

The data was collected through an online questionnaire targeted at UK residents, where respondents were provided a description of anti-consumption and its practices. A filter question ensured participants had performed any anti-consumption practice. The final sample consisted of 332 valid questionnaires. Respondents were predominantly women (64,4%), with a mean age of 36, highly educated (45,9% university, undergraduate), and employed (96,4%).

The participants had to respond two waves of the questionnaire. The first wave included questions anti-consumption attitudes (measured with Iyer and Muncy's 2016 scale), long term orientation (measured with Bearden et al. 2006 scale), meaningful spending time (measured with Rudd et al. 2019 scale), and demographic data. The second questionnaire wave, which was launched one week later to the same respondents, included questions about participants' subjective wellbeing adapted from Burroughs and Rindfleisch (2002). All the items were measured using 7-point Likert-type scales.

## RESULTS AND DISCUSSION

Construct reliability, convergent and divergent validity analysis provided evidence that data could be used for SEM analysis. More specifically, all Cronbach's alphas were well above 0,6 (ranging from 0,684 to 0,944), all CRs (ranging from 0,801 to 0,954) and AVEs (from 0,501 to 0,728) were above 0,8 and 0,5 respectively. None of the between construct correlations were higher than the AVE root of each construct itself. SEM analysis was performed with EQS. The exploratory factor analysis confirmed the bidimensional structure of anti-consumption attitudes, which can be split into micro and macro dimensions (Iyer and Muncy, 2016). In addition, and in contrast with its theoretical formulation (see Rudd et al. 2019), the meaningfully spending time construct was also bidimensional with one factor explaining the connecting to the self and the second factor merging both connecting to others and connecting to the world dimensions. These two constructs were thus introduced in the model as second order factors.

The fit indexes of the model with the moderated mediation (chi-square was 876.3895 based on 519 df, p-value < 0,01; CFI was 0,911; RMSA was 0,046) were deemed adequate. Overall, the model was able to explain a 25,6% of the subjective wellbeing variance. In line with our expectations, there was a strong positive relationship between spending time in meaningful ways and subjective wellbeing ($\beta$= 0,451; p-value < 0,01), but not between anti-consumption and subjective wellbeing ($\beta$= 0,073; p-value > 0,05). Having anti-consumption attitudes per se does not suffice to impact individual well-being, which explains the past non-significant results of some works (i.e., Seegebarth et al. 2016). As suggested in previous research, anti-consumers avoid traditional economic activities such as

consuming and purchasing and seek more experiential and meaningful practices (Zavestoski 2002), such as devoting time to connect with themselves, relevant others, and the world.

In addition, in line with our hypothesised model, anti-consumption attitudes and spending time in meaningful ways were positively and significantly related ($\beta$= 0,286; p-value < 0,01). This finding shows how important is that anti-consumers find the way to spend time in meaningful ways. Finally, the results of the moderation show how long-term orientation exerts a significant and negative influence on the relationship between spending time meaningfully and subjective wellbeing ($\beta$= -0,149; p-value < 0,01). This result is important since long term orientation is often considered an important antecedent of ethical and environmental consumer behaviour (Bearden et al. 2006; Polonski et al. 2014). Our results suggest that individuals may perceive a conflict of interests when they are devoting their time on present-focused activities but trying to achieve a greater anti-consumption objective in the future.
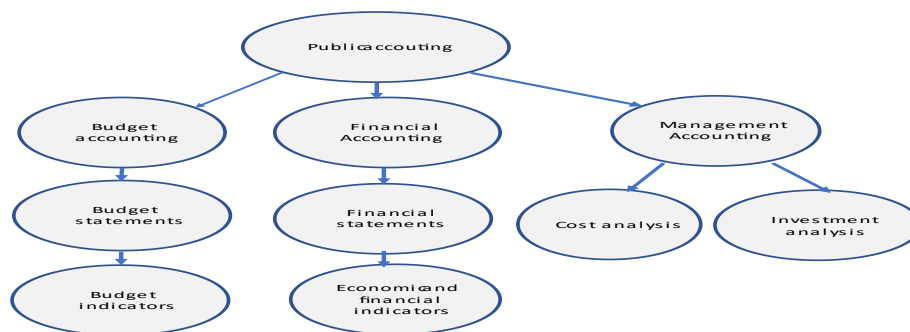


*n=332, \*\* p<0.01, \* p<0.05*

Figure1: Observed Model

# CONCLUSIONS AND IMPLICATIONS FOR THEORY AND PRACTICE

This study affirms the existence of a correlation between anti-consumerism and the desire to spend time in meaningful ways. This is, to our knowledge, the first empirical examination of such a relationship, although it has been theorized. In addition, our results provide empirical support for the relationship between anti-consumption and subjective well-being, confirming the important but frequently understudied role of time orientation. Consequently, our findings imply that individuals must find methods to translate their anti-consumption attitudes into more meaningful behaviors in order to increase their happiness. Long-term orientation was initially viewed as a desirable trait for achieving lower levels of consumption (Nepomucemo et al., 2017), but our research indicates that it can be detrimental to subjective well-being. This may be the result of competing time orientations (i.e., the present versus the future), and additional research is required to determine how to resolve or reduce this conflict.

Overall, our findings clarify the relationship between anti-consumption and well-being and demonstrate the importance of considering various time orientations for anti-consumerists. Theoretically, we add a new perspective on individual time orientation to the literature on anti-consumption. There has been little cross-fertilization between these two disciplines, which is a regrettable omission given that they can provide each other with valuable insights. We suggest, from a managerial perspective, that companies wishing to cater to the needs of the growing segment of anti-consumers should ensure that their products and services facilitate novel ways for these individuals to spend their time in a meaningful manner.

*Keywords: corporate social responsibility, anti-consumption practices, well-being*

## REFERENCES

Bearden, William O., R. Bruce Money and Jennifer L. Nevins (2006), "A Measure of Long-Term Orientation: Development and Validation." Journal of the Academy of Marketing Science, 34(3), 456-467.

Boström, Magnus (2021), "Social Relations and Challenges to Consuming Less in A Mass Consumption Society." Sociologisk forskning, 58(4), 383-406.

Bryant, Fred B. and Joseph Veroff (2017), Savoring: A new model of positive experience. New York: Psychology Press.

Burroughs, James E and Aric Rindfleisch (2002), "Materialism and Well-Being: A Conflicting Values Perspective," Journal of Consumer research, 29(3), 348-370.

Chatzidakis, Andreas and Michael S. W. Lee (2013), "Anti-Consumption as the Study of Reasons Against," Journal of Macromarketing, 33 (3), 190-203.

Drake, Lisa, Elaine Duncan, Fi Sutherland, Clare Abernethy and Colette Henry (2008), "Time Perspective And Correlates Of Wellbeing." Time & Society, 17(1), 47-61.

Hoffmann, Stefan and Michael S. W Lee (2016), "Consume Less and Be Happy? Consume Less to Be Happy! An Introduction to the Special Issue on Anti-Consumption and Consumer Well-Being." The Journal of Consumer Affairs, 50(1), 3-17.

Hüttel, Alexandra, Ingo Balderjahn, and Stefan Hoffmann (2020), "Welfare Beyond Consumption: The Benefits Of Having Less." Ecological Economics, 176, 106719.

Hutter, Katharina and Stefan Hoffmann (2013), "Carrotmob and Anti-Consumption: Same Motives but Different Willingness to Make Sacrifices?" Journal of Macromarketing, 33(3), 217-231.

Iyer, Rajesh and James A. Muncy (2016), "Attitude toward Consumption and Subjective Well-Being." Journal of Consumer Affairs, 50(1), 48-67.

Keinan, Anat and Ran Kivetz (2010), "Productivity Orientation and the Consumption of Collectable Experiences." Journal of Consumer Research, 37(6), 935–950.

Killingsworth, Matthew A., and Daniel T. Gilbert (2010), "A Wandering Mind Is an Unhappy Mind." Science, 330(6006), 932–932.

Lee, Michael S. W. and Christie Seo Youn Ahn (2016), "Anti-Consumption, Materialism, And Consumer Well-Being." Journal of Consumer Affairs, 50(1), 18-47.

Mead, Nicole L. and Lawrence E. Williams (2022), "Can't Buy Me Meaning? Lay Theories Impede People from Deriving Meaning and Well-Being from Consumption." Current Opinion in Psychology, 46, 101332.

Nepomuceno, Marcelo Vinhal and Michel Laroche (2017), "When Materialists Intend To Resist Consumption: The Moderating Role Of Self-Control And Long-Term Orientation." Journal of Business Ethics, 143(3), 467-483.

Oral, Cansu and Joy-Yana Thurner (2019), "The Impact of Anti-Consumption on Consumer Well-Being." International Journal of Consumer Studies, 43(3), 277-288.

Rebouças, Raquel and Ana Maria Soares (2021), "Voluntary Simplicity: A Literature Review and Research Agenda." International Journal of Consumer Studies, 45(3), 303-319.

Rich, Stacey Ann, Sharon Hanna, Bradley J. Wright and Pauleen C. Bennett (2017), "Fact or Fable: Increased Wellbeing in Voluntary Simplicity." International Journal of Wellbeing, 7(2), 64-77.

Rudd, Melanie, Rhia Catapano, and Jennifer Aaker (2019), "Making Time Matter: A Review of Research on Time and Meaning." Journal of Consumer Psychology, 29(4), 680-702.

Seegebarth, Barbara, Mathias Peyer, Ingo Balderjahn and Klaus-Peter Wiedmann (2016), "The Sustainability Roots Of Anticonsumption Lifestyles And Initial Insights Regarding Their Effects On Consumers' Well-Being." Journal of Consumer Affairs, 50(1), 68-99.

Zavestoski, Stephen (2002), "The social–psychological bases of anticonsumption attitudes." Psychology & Marketing, 19(2), 149-165.

# GENDER ATTITUDE AND INTERSECTIONAL FACTORS IN THE CASHLESS PAYMENT BEHAVIOUR

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## ABSTRACT

## RATIONALE

Official gender statistics data (https://eige.europa.eu/gender-statistics/) assess that in UE the percentage of women involved in European financial institutions is as low as 20%. This trend is consistent with robust evidence documenting low levels of financial literacy across countries and measures (Bucher-Koenen et al., 2017; OECD, 2013). Segregation is amplified by the use of digital technologies in economics and finance. Indeed, women participation in digital economy is residual. According to the European Commission only 33% of STEM graduates is a woman and only 17% of ICT specialists in the EU is a woman, earning almost 20% less than men do (data 2019, from https://digital-strategy.ec.europa.eu/en/library/women-digital#Why). In Italy, women segregation is spread out in many fields such as STEM disciplines education and finance, so it is urgent in Fintech. For instance, in STEM women make up only 28% of the workforce (https://www.aauw.org/resources/research/the-stem-gap/). This domain-specific gaps are about to trigger additional inequalities that remain mostly unrecognised. Indeed, fastest-growing and highest-paid jobs of the future lie in the computer science and engineering field. Weak mathematical education is associated to a lower comprehension and more difficult access to the global financial system. However, more inclusive financial systems in turn can magnify the effectiveness of fiscal and monetary policies by broadening financial markets and the tax base (Sahay & Cihak, 2018). Some studies assess that the financial inclusion may also influence the widespread of cashless usage (Bayero, 2015). No-cash payments - financial transactions using cards or electronic methods - are extremely popular in some countries, such as the Netherlands, Germany, Switzerland and in the Nordic countries (Kraenzlin et al, 2020; Sreenu, 2020) but the Covid-19 pandemic has accelerated the transformation process also in Italy. Socio-demographic factors influence the transition from cash to cashless payments (Bublyk et al. 2023); also, the sex may have an impact on the consumers' attitudes towards cashless payments. Graziano et al. (2023) has explored the behavioural attributes and financial knowledge aspects during lockdown by Covid-19. In this paper, we deeply analyse the impact of gender and/or other intersectional factors on the attitude to cashless payments usage.

## DATA

Data were collected in Italy between November 2021 and February 2022 by using Computer Assisted Web Interview approach (C.A.W.I.). We distributed the questionnaire to roughly 2,000 people via social media sites such as Facebook, WhatsApp, Instagram, Twitter, and LinkedIn, and 836 full questionnaires were analysed. The questionnaire consisted of a total of 35 questions and the average response time is estimated at 7 minutes and 23 seconds and it is structured in six different areas. Whilst Graziano *et al.* (2022) showed socio-demographic features of the sample, Graziano *et al.* (2023) modelled the relations among items of the questionnaire to catch which factors impacted directly or indirectly on the cashless payment attitude.

## RESEARCH HYPOTHESES AND METHODOLOGY

In Graziano *et al.* (2023) data were analysed to verify 4 research hypotheses that are the following. *H1: Covid-19 fear impact on cashless payment attitude. H2: During the Covid-19 pandemic, the level of financial literacy impact cashless payment attitudes. H3: Media information on covid-19 generates fear and anxiety, both of which in turn influence consumers' payment behaviour. H4: Financial security affects consumers' payment behaviour and covid information affects financial security.* The hypotheses were checked by a structural equation model (SEM) able to analyse the direct or indirect relationships between latent factors involved in the analysis. In the applications, a SEM can confirm a theoretical expected framework. A relevant result of Graziano et al. (2023) is that the estimated model discussed revealed to be not invariance by sex. In other words, links between constructs in the structural model seem to not hold the same in the subgroup of males and females. This result is the starting point for a deeper analysis about the impact of socio-demographic factors in the cashless payment attitude. The research questions are: *RQ1: How does the structural configuration change between men and women? RQ2: Is there any other demographic factor changing the structural configuration? Here, an intersectional study is presented.*

## EXPECTED RESULTS

The main objectives of this paper are: (a) to examine how the structural pattern of attitudes toward cashless payments varies between men and women; (b) to investigate whether there are other demographic factors that influence the structural pattern of attitudes toward cashless payments; and (d) to stimulate public discussion about how intersecting factors (e.g., gender, age, income, education) may influence the transition from cash to cashless payments. Given these premises, we expect to find intersectional factors that highlight different structural models for different subpopulations, and we expect to animate the social debate about the elements that imply the transition from cash to cashless.

Potential expected outcomes of this study include the discovery of significant differences in structural configuration between men and women in the use of cashless payments, and the identification of any other demographic factors that influence structural configuration. We hope to gain more insight into the relationship between COVID-19 pandemic fear, financial literacy, media information, financial security and consumer payment behavior. In addition, the analysis may reveal significant differences in structural configuration among different subpopulations, and publication of the results could make an important contribution to understanding the importance of financial inclusion.

*Keywords: Financial access; Fintech; Gender Statistics; SEM*

# REFERENCES

Bayero, M. A. (2015). "Effects of Cashless Economy Policy on financial inclusion in Nigeria: An exploratory study." Procedia-Social and Behavioral Sciences, 172, 49-56.

Bublyk, Y., Shapoval, Y., Shpanel-Yukhta, O., & Brus, S. (2023). "Effect Of Financial Access on Cashless Economy: The Case of Ukraine" - businessperspectives.org

Bucher - Koenen, T., Lusardi, A., Alessie, R., & Van Rooij, M. (2017), "How financially literate are women? An overview and new insights." J Consum Aff, Vol. 51 No 2,

Graziano, E., Musella, F., Petroccione, G., "Cashless payment: truth or dare? The Italian case during Covid-19" under review

Graziano, E. A., Musella, F., Petroccione, G., (2022) "Toward a cashless economy: preliminary results from Italy", in CONFERENCE READINGS BOOK PROCEEDINGS. pp. 345—359. 15th Annual Conference of the EuroMed Academy of Business (Palermo 21-23 September, 2022), Edited by: Vrontis, D., Weber, Y., Tsoukatos E., EuroMed Press. ISBN: 978-9963-711-96-3

Kraenzlin, S., Meyer, C. and Nellen, T. (2020) "COVID-19 and regional shifts in Swiss retail payments", Swiss Journal of Economics Statistics, Vol. 156.

OECD (2013), "Women and financial education: Evidence, policy responses and guidance, OECD Publishing." Available at http://dx.doi.org/10.1787/9789264202733-en

Sahay, M. R., & Cihak, M. M. (2018). "Women in Finance: a case for Closing Gaps." International Monetary Fund.

Sreenu, N. (2020) "Cashless payment policy and its effects on economic growth of India: An exploratory study", ACM Transactions on Management Information Systems, Vol. 11, No.3.

# CROWDFUNDING, ART AND THE METAVERSE: A NEW PERSPECTIVE ON WILLINGNESS TO GIVE

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## ABSTRACT

"If SaaS (software-as-a-service) has emerged as the well-established business model to dominate the web2 space, the coming transition to web3 will undoubtedly see a similar market opportunity for MaaS (metaverse-as-a-service) businesses" Sandra Helou, co-founder and chief commercial officer at Metapolis, well expresses the potential of Metaverse to be the upcoming game changer in technological innovation. Interestingly, Metapolis recently developed a partnership with art dealers to build and launch museums, galleries and crowdfunding offerings within "Rare City", a space in the metaverse to bring together museums, galleries, education, and crowdfunding to make art, learning and fundraising more accessible.

This, and many other recently established partnerships shed light on the central role that metaverse is playing in bridging the gap between real world, art and digital art to make it accessible to investors from around the world.

Extant research posits that art has value beyond its physical form. In fact, art is a form of expression that can elicit emotions and convey messages. Whether digital or physical, its value is determined by the significance it holds for the individual viewer. Indeed, the digital revolution has ushered in a novel art era, with a growing number of philanthropists and art collectors known as crypto-natives entering the scene. This has sparked a lively debate about the nature of digital art and whether donating can transcend physical boundaries.

People frequently assumed that pure altruism is the main driver of philanthropy (Andreoni *et al.*, 2017). Nevertheless, giving behaviour is multi-motivated, and altruism may be just one of many motives behind it (Bendapudi *et al.*, 1996). In the past three years, sociopsychologists declare people frequently relate the products in their possession with their identities, which affects how they behave and their corresponding judgment (Johar *et al.*, 2019). Additionally, individuals are more apt to develop an emotional bond with objects they can physically touch, thereby raising their perceived value (Siddiqui and Turley, 2006). In contrast, the metaverse is devoid of physical properties, which seems to present a significant obstacle to establishing a comparable level of emotional attachment. Although extant research has revealed that consumers may form an emotional attachment with digital goods that is on par with their bond with physical products (Lehdonvirta *et al.*, 2012), the lack of

tangibility in the metaverse and the inability to physically touch artworks may potentially hinder some donors from forming an emotional connection with virtual art.

Accordingly, our research addresses the following research questions:

*Do the motives that elicit donors' willingness to give differ in virtual and real worlds? What is the role of psychological ownership in hindering (vs fostering) donors' willingness to give?*

To answer our research questions, we intend to leverage a quantitative approach using within-subjects experimental design. More specifically, participants will be exposed to the same experiment but different conditions will be manipulated. Participants will be exposed to the same crowdfunding campaigns but the context will be manipulated. On one experiment they will be confronted with a donation situation where they will have access to museum tickets to see the artifact they funded. While in the second experiment, they will be asked to donate to fund a digital art artifact and they will be proposed with tickets to see the artifact in the metaverse.

Drawing on the five antecedents of psychological ownership such as the desire for autonomy, desire for pleasure, desire for security, enjoyment expectation, and satisfaction expectation (Gaskin and Lyytinen, 2011), we posit that individuals are less prone to crowdfunding in the metaverse as it is still an unfamiliar scenario. This might lead to an adverse effect, making the virtual world scenario less attractive for funders. Moreover, individuals might be scared to donate to virtual campaigns due to the risk of volatile cryptocurrencies. By leveraging this type of knowledge, fundraisers and marketers may gain valuable insights on how to develop crowdfunding in the metaverse, enabling the stakeholders to proactively create sustainable models for funding and increase donors' contributions.

*Keywords: crowdfunding; philanthropy; digital art; metaverse; psychological ownership; psychological benefits; emotional attachment; (in)tangibility.*

## REFERENCES

Andreoni, J., Rao, J. M. and Trachtman, H. (2017), "Avoiding the ask: A field experiment on altruism, empathy, and charitable giving", Journal of political Economy, Vol. 125 No. 3, pp. 625–653.

Bendapudi, N., Singh, S. N. and Bendapudi, V. (1996), "Enhancing helping behavior: An integrative framework for promotion planning", Journal of marketing, Vol. 60 No. 3, pp. 33–49.

Gaskin, J., and Lyytinen, K. (2012), "Psychological ownership and the individual appropriation of technology", Information Systems Theory: Explaining and Predicting Our Digital Society, Vol. 2, pp 25–39.

Johar, G. V., Chung, J. and Weiss, L. (2019), "Ownership and identity: a cognitive perspective", in Handbook of Research on Identity Theory in Marketing. Edward Elgar Publishing.

Lehdonvirta, M., Nagashima, Y., Lehdonvirta, V. and Baba, A. (2012), "The stoic male: How avatar gender affects help-seeking behavior in an online game", Games and culture, Vol. 7 No. 1, pp. 29–47.

Siddiqui, S. and Turley, D. (2006), "Extending the self in a virtual world", ACR North American Advances. Vol. 3 eds. Connie Pechmann and Linda Price, Duluth, MN, Association for Consumer Research, pp. 647–648.

# EVOLUTION OF DIGITAL INNOVATION LABS: HOW ORGANIZATIONAL LEARNING CONTRIBUTES TO DIGITAL TRANSFORMATION

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## ABSTRACT

Is artificial intelligence going to revolutionize the manufacturing process? Will blockchain change the process of trade finance? How can augmented reality be used in sales processes? Answers to these questions are researched and tested in Digital Innovation Labs (DILs). Especially in recent years, these labs became a tool for companies to deal with disruption and digital innovation. However, success has been mixed. Some DILs did not achieve their goals, while others paved the way for digital transformation. Therefore, this study examines the evolution of DILs and shows how Organizational Learning promotes innovation. Using a unique study design, this paper uses the case study approach to examine two developmental stages of a particular DIL. Over time, the DIL has undergone fundamental changes and developed a funnel approach in which the lab structure supports the entire innovation process. Based on our study, we derive ten recommendations that can contribute to the success of DILs in companies.

## 1. INTRODUCTION

Innovation is deeply integrated into companies' DNA since it is essential for the continuation of businesses across all industries around the globe. Digital innovation accelerates the emergence of new technologies like cloud computing, artificial intelligence or the internet of things and shapes the way how people live and work today (Fichman *et al.*, 2014). With new technologies, the way how innovation is managed changes. Consequently, so-called Digital Innovation Labs (DILs) emerged and "… attracted substantial interest from academics and innovation practitioners" (Fecher *et al.*, 2020, p. 567).

Studies show different results; unfortunately, failures and unsuccessful investments prevail (Kyriasoglou, 2020). However, investigations such as the one by Lewis and Moultrie (2005) indicate that DILs are very successful in their doing and generate value for the company in a tangible but also an intangible way. DILs are contributing to the creation of dynamic capabilities needed to succeed in digital innovation (Hellmich et al., 2021; Lorson, 2022). Since the first appearance of DILs, much has changed. However, little is known about their evolution and how firms are adapting their DILs.

OL is the fundament for the continued existence of companies as it means that, to stay competitive in an ever-changing environment, organizations must adapt and change their goals and actions to reach their targets. Thus OL has a significant influence in achieving competitive advantages (Hult, 1998).

Organizational learning (OL) connects gained insights and resulting actions (Argote & Miron-Spektor, 2011). Given that OL is essential for creating dynamic resources and, thus, successful innovation, our paper evaluates OL within DILs and its influence on the evolution of DILs. OL between two points in time uncovers the reasoning behind why certain changes occurred and their impact. To the best of our knowledge, this is one of the first longitudinal comparisons in the field of DILs. Hence, we formulate the following research question: *How does organizational learning contribute to changes in the design of DILs?*

## 2. METHODOLOGY

In our paper, we study the evolution of a particular DIL, the 'CaseDIL'. This DIL is part of a large European bank and was established in 2015. The bank is referred to as 'CaseBank' in this paper. The research provides deep insights into two developmental stages of CaseDIL and addresses its evolution during this period. As this study is explorative, in-depth interviews were conducted with key players of the bank. Thus, we used a longitudinal study design and performed interviews at two points in time. The first round of interviews took place in 2018, the second in 2021.

The analysis followed a two-step approach focusing on the parameters that specify the design of CaseDIL (organization, strategy, team, people, and process) and the changes of these design parameters at different levels of learning. According to Easterby-Smith *et al.* (2000), there are four levels of OL: the individual level, the group level, the organizational level, and the interorganizational level.

## 3. RESULTS

Our study leads to several practical and theoretical implications related to changes in the design of DILs over time. The changes are the result of ongoing OL and, subsequently, the evaluation of the design parameters to further develop a DIL. In our paper we present ten recommendations for managers and researchers based on the five design parameters (strategy, organization, team, people, process). Furthermore, the responses from both points in time were examined for evidence of OL according to the four levels of OL. The study reveals a rich body of evidence for the development of DILs. OL as a driver of change was essential in all parameters and thus plays an important role in the further evolution of DILs.

*Keywords: Digital Innovation Labs, Organizational Learning, Comparative Analysis.*

## REFERENCES

Argote, L., & Miron-Spektor, E. (2011), "Organizational Learning: From Experience to Knowledge", Organization Science, Vol. 22 No. 5, pp. 1-39.

Easterby-Smith, M., Crossan, M., & Nicolini, D. (2000), "Organizational Learning: Debates Past, Present and Future", Journal of Management Studies, Vol. 37 No. 6, pp. 783-796.

Fecher, F., Winding, J., Hutter, K., & Füller, J. (2020), "Innovation labs from a participants' perspective", Journal of Business Research, Vol. 110, pp. 567-576.

Fichman, R. G., Dos Santos, B. L., & Zheng, Z. (2014), "Digital Innovation as a Fundamental and Powerful Concept in the Information Systems Curriculum", MIS Quarterly, Vol. 38 No. 2, pp. 329-343.

Hellmich, J., Raabe, J.-P., & Schirmer, I. (2021), "Towards a Foundational and Extensional Dynamic Capability Perspective on Digital Innovation Units", Proceedings of the 27th Americas Conference on Information Systems.

Hult, G. T. M. (1998), "Managing the International Strategic Sourcing Process as a Market-Driven Organizational Learning System", Decision Sciences, Vol. 29 No. 1, pp. 193–216.

Kyriasoglou, C. (2020), "Konzerne täuschen oft nur Modernität vor: Das Scheitern der Berliner Digitallabore", https://www.manager-magazin.de/unternehmen/konzerneigene-start-ups-das-scheitern-der-berliner-digitallabore.

Lewis, M., & Moultrie, J. (2005), "The Organizational Innovation Laboratory", Creativity and Innovation Management, Vol. 14 No. 1, pp. 73–83.

Lorson, A. (2022), "Building Dynamic Capabilities through Digital Innovation Units? - An analysis of their contribution and the spill-over effects to the main organization", Proceedings of the 28th Americas Conference on Information Systems.

# BUILDING BIG DATA ANALYTICS CAPABILITIES THROUGH EXTERNAL DATA: THE ROLE OF ABSORPTIVE CAPACITY

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## ABSTRACT

## BACKGROUND AND PURPOSE

Big data has emerged as a valuable resource for public and business organizations. However, its complexity requires big data analytics (BDA) to manage, which is referred to as a comprehensive approach to manage, process, and analyze big data to obtain actionable insights for favorable outcomes. Recently, authors point out that investments in BDA technologies alone do not enable firms to become a competitive force; instead, they should develop BDA capabilities (BDAC) that are not easy to imitate and formulate (Mikalef et al. 2020; Gupta & George 2016). This study adopts the BDAC definition by Wamba et al. (2020, p 2), which is referred  to as *"a holistic process that involves the collection, analysis, use, and interpretation of data for various functional divisions to gain actionable insights, create business value, and establish competitive advantage".* While it is statistically found that BDAC can enable firms to gain competitive advantages (Wamba et al. 2017; Gupta & George 2016), there has been scant research how BDAC should be leveraged strategically and which organizational changes these capabilities entail (Mikalef et al. 2019; Mikalef et al. 2018).

On the one hand, although big data may include both internal and external data (Gupta & George 2016), existing research has overlooked the question of how firms may effectively exploit data from external sources, which accounts for most of the data generated currently. Indeed, it is confirmed that *"few organizations take full advantage of data generated outside their walls"* (Aaser, M., & McElhaney, D. 2021, p 1); yet little emphasis has been put on external big data. On the other hand, the knowledge-based view (KBV) suggests that it requires specialized knowledge to extract actionable insights from big data and also business knowledge to apply such insights into the organizational context (Côrte-Real, Ruivo & Oliveira 2020; Dubey, Gunasekaran & Childe 2019). However, existing BDAC literature does not holistically provide an understanding on how firms coordinate such sets of specialized knowledge for sustaining competitiveness. Against the background, this work posits that organizational absorptive capacity (AC) can address these gaps, highlighting the role of identifying and assimilating external knowledge in developing BDAC as well as the mechanism through which necessary organizational transformations can be made and the assimilated knowledge from analytics results can be learned and applied (Elia et al. 2022; Khan & Tao 2022; Cohen & Levinthal 1990). AC theory was introduced by Cohen & Levinthal (1990), aiming to uncover an organization's ability to

recognize, value, organize, and decode external knowledge as to effectively use such knowledge for commercial outcomes (Khan & Tao 2022). Absorptive capacity subsumes two key dimensions: potential AC (i.e., acquisition and assimilation capacity) and realized AC (i.e., transformation and application capacity) (Zahra & George 2002). Through the lens of AC view (Cohen & Levinthal 1990) and the KBV (Grant 1996), this work aims to address the following research questions: "*how do firms develop BDAC from external big data sources?*" and "*how do firms leverage BDAC to achieve sustainable competitive advantages*".

## HYPOTHESES DEVELOPMENT

### Potential absorptive capacity and BDAC

Big data sources are comprised of internal and external data in which internal sources exist in an organization's databases and IT-systems (e.g., RFID devices, IoT sensors) whereas external big data can be obtained from a variety of sources such as data portals and open data platforms, social media (Leveling, J., Edelbrock, M., & Otto, B. 2014; Ardito et al. 2022). To exploit big data, firms should develop BDAC which is associated insights or values generated from big data (both internal and external) (Gupta & George 2016). However, research on this concept lacks focus on the process of identifying and assimilating external sources of data. While many companies have successfully collected and utilized their own internal data, only a few have fully recognized the advantages of integrating external data from third parties, vendors, or public sources (Aaser, M., & McElhaney, D. 2021). Furthermore, not all organizations are born digital, internal big data sources can be limited especially for small and medium sized enterprises. Hence, neglecting external data can lead to losses of potential opportunities. Potential AC encompasses data acquisition and assimilation (Lam et al. 2017; Zahra & George 2002), which can address such drawbacks. In particular, acquisition capacity refers to routines and strategic processes through which firms can identify and acquire relevant external big data (Lam et al. 2017) whereas assimilation capacity refers to firms' ability of analyzing, processing, interpreting, and comprehending information obtained from external sources. As suggested by Lam et al. (2017), identification and assimilation capacity enable firms to convert external data to information, which allow for obtaining insights from the external environment. In this work, it is argued that acquisition and assimilation capacity of a firm positively influence its BDAC, which leads to the first two hypotheses:

*H1: A firm's acquisition capacity positively influences its BDAC.*

*H2: A firm's assimilation capacity positively influences its BDAC.*

**The mediating role of realized absorptive capacity.**

The realized AC subsumes transformation and application capacity (Lam et al. 2017; Zahra & George 2002). Transformation refers to the capacity of combining newly acquired and assimilated knowledge with existing knowledge whereas exploitation capacity is related to the application of the acquired and transformed knowledge into a variety of routines and strategic processes (Elia et al. 2022; Zahra & George 2002). BDAC enables firms to deploy necessary resources to capture actionable insights from both internal and external environment for competitiveness, whose association is well-studied (e.g., Behl et al. 2022; Dubey et al. 2022; Horng et al. 2022). However, realized AC enables firms to integrate and adapt both its existing internal knowledge and newly acquired knowledge, subsequently incorporating this modified knowledge into the firm's systems, processes, routines, and operations, which go beyond refining existing knowledge and competences, encompassing the generation of new operations and competences (Camisón & Forés 2010). Therefore, BDAC allows for gaining insights from internal and external data, which enhances firms' transformation and exploitation capacity. In turn, transformation and exploitation capacity should be developed so as to gain sustainable competitive advantages (Zahra & George 2002). This is aligned with the research model proposed by Lam et al. (2017), in which realized AC help firms gain and apply new knowledge from big data insights and existing knowledge, thus acting as mediators between BDAC and sustainable competitive advantages. These arguments lead to the following hypotheses:

H3: A firm's BDAC positively influences its transformation capacity.

H4: A firm's BDAC positively influences its exploitation capacity.

H5: A firm's transformation capacity positively influences its sustainable competitive advantages.

H6: A firm's assimilation capacity positively influences its sustainable competitive advantages.
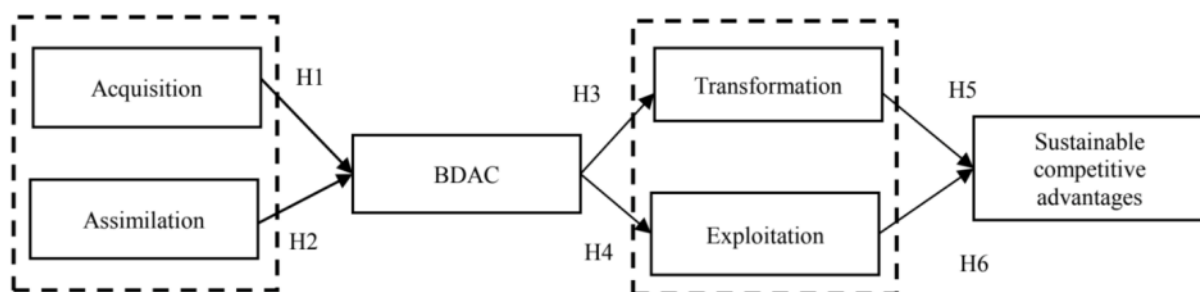


Figure 1: Research Model

## METHODOLOGY

Building on our research objectives, the work aims to apply absorptive capacity view to propose a research model (Figure 1) uncovering the question of how firm can develop their BDAC focusing on external sources of big data and the mechanism though which sustainable competitive advantages can be obtained from BDAC. The work is still in progress where a preliminary pilot study is being

undertaken to further enhance the newly adapted instrument. The research model will be validated on data collected from a set of data-driven firms in the EU, employing structural equation modeling as the main quantitative method. Based on existing literature on absorptive capacity (Camisón & Forés 2010; Lam et al. 2017), the four dimensions of firm-level big data absorptive capacity were measured. In addition, the measure for constructs organizational BDAC and sustainable competitive advantages were adapted from prior studies (Behl et al. 2022; Chen et al. 2022).

## CONCLUSION AND CONTRIBUTIONS

The current study contributes to the existing body of BDAC, absorptive capacity, and competitive advantages in several ways. Firstly, this work is one of the first studies addressing the role of external big data sources and absorptive capacity in enabling firms to gain sustainable competitive advantage. Secondly, the findings of this work shed light on the mechanism through which firms can enhance their BDAC through developing potential AC. Furthermore, the work examines how internal and external knowledge can be integrated to gain and apply new knowledge for sustaining competitiveness. The study contributes to the BDAC literature through responding to the calls on how BDAC should be leveraged strategically, highlighting the mediating role of transformation and exploitation capacity in incorporating and applying new knowledge captured from big data insights. From a practical perspective, the study addresses a critical gap about the role of external big data in the BDAC literature, which has been often overlooked. While external big data sources have been emphasized as a critical resource for firm's growth, productivity, and risk management in both practitioners' and scholarly literature, few organizations can harness this external resource (Aaser, M., & McElhaney, D. 2021). Thus, the research model offers important implications for organizations seeking to benefit from external data sources, especially SMEs and those that lack internal big data. Developing organizational absorptive capacity is crucial for such organizations that aim to become data-driven and gain competitive advantages from big data.

*Keywords: Big Data Analytics, Big Data Analytics Capabilities, Absorptive Capacity, Organizational Capabilities, Knowledge-based View*

## REFERENCES

Aaser, M., & McElhaney, D. 2021, 'Harnessing the power of external data', McKinsey and Co. Available from: www.mckinsey.com/business-functions/mckinsey-digital/our.
Ardito, L, Cerchione, R, Mazzola, E & Raguseo, E 2022, 'Industry 4.0 transition: a systematic literature review combining the absorptive capacity theory and the data–information–knowledge hierarchy', Journal of Knowledge Management, vol. 26, no. 9, pp. 2222–2254.

Behl, A, Gaur, J, Pereira, V, Yadav, R & Laker, B 2022, 'Role of big data analytics capabilities to improve sustainable competitive advantage of MSME service firms during COVID-19 – A multi-theoretical approach', Journal of Business Research, vol. 148, pp. 378–389.

Camisón, C & Forés, B 2010, 'Knowledge absorptive capacity: New insights for its conceptualization and measurement', Journal of Business Research, vol. 63, no. 7, pp. 707–715.

Chen, L, Liu, H, Zhou, Z, Chen, M & Chen, Y 2022, 'IT-business alignment, big data analytics capability, and strategic decision-making: Moderating roles of event criticality and disruption of COVID-19', Decision Support Systems, vol. 161, p. 113745.

Cohen, WM & Levinthal, DA 1990, 'Absorptive Capacity: A New Perspective on Learning and Innovation', Administrative Science Quarterly, vol. 35, no. 1, pp. 128-152.

Côrte-Real, N, Ruivo, P & Oliveira, T 2020, 'Leveraging internet of things and big data analytics initiatives in European and American firms: Is data quality a way to extract business value?', Information & Management, vol. 57, no. 1, p. 103141.

Dubey, R, Bryde, DJ, Dwivedi, YK, Graham, G & Foropon, C 2022, 'Impact of artificial intelligence-driven big data analytics culture on agility and resilience in humanitarian supply chain: A practice-based view', International Journal of Production Economics, p. 108618.

Dubey, R, Gunasekaran, A & Childe, SJ 2019, 'Big data analytics capability in supply chain agility', Management Decision, vol. 57, no. 8, pp. 2092–2112.

Elia, G, Raguseo, E, Solazzo, G & Pigni, F 2022, 'Strategic business value from big data analytics: An empirical analysis of the mediating effects of value creation mechanisms', Information & Management, vol. 59, no. 8, p. 103701.

Grant, RM 1996, 'Toward a knowledge-based theory of the firm', Strategic Management Journal, vol. 17, S2, pp. 109–122.

Gupta, M & George, JF 2016, 'Toward the development of a big data analytics capability', Information & Management, vol. 53, no. 8, pp. 1049–1064.

Horng, JS, Liu, CH, Chou, SF, Yu, TY & Hu, DC 2022, 'Role of big data capabilities in enhancing competitive advantage and performance in the hospitality sector: Knowledge-based dynamic capabilities view', Journal of Hospitality and Tourism Management, vol. 51, pp. 22–38.

Khan, A & Tao, M 2022, 'Knowledge absorption capacity's efficacy to enhance innovation performance through big data analytics and digital platform capability', Journal of Innovation & Knowledge, vol. 7, no. 3, p. 100201.

Lam, SK, Sleep, S, Hennig-Thurau, T, Sridhar, S & Saboo, AR 2017, 'Leveraging Frontline Employees' Small Data and Firm-Level Big Data in Frontline Management', Journal of Service Research, vol. 20, no. 1, pp. 12–28.

Leveling, J., Edelbrock, M., & Otto, B. 2014, 'Big data analytics for supply chain management', IEEE international conference on industrial engineering and engineering management, pp. 918–922.

Mikalef, P, Boura, M, Lekakos, G & Krogstie, J 2019, 'Big Data Analytics Capabilities and Innovation: The Mediating Role of Dynamic Capabilities and Moderating Effect of the Environment', British Journal of Management, vol. 30, no. 2, pp. 272–298.

Mikalef, P, Boura, M, Lekakos, G & Krogstie, J 2020, 'The role of information governance in big data analytics driven innovation', Information & Management, vol. 57, no. 7, p. 103361.

Mikalef, P, Pappas, IO, Krogstie, J & Giannakos, M 2018, 'Big data analytics capabilities: a systematic literature review and research agenda', Information Systems and e-Business Management, vol. 16, no. 3, pp. 547–578.

Wamba, SF, Dubey, R, Gunasekaran, A & Akter, S 2020, 'The performance effects of big data analytics and supply chain ambidexterity: The moderating effect of environmental dynamism', International Journal of Production Economics, vol. 222, p. 107498.

Wamba, SF, Gunasekaran, A, Akter, S, Ren, SJ, Dubey, R & Childe, SJ 2017, 'Big data analytics and firm performance: Effects of dynamic capabilities', Journal of Business Research, vol. 70, pp. 356–365.

Zahra, SA & George, G 2002, 'Absorptive Capacity: A Review, Reconceptualization, and Extension', Academy of Management Review, vol. 27, no. 2, pp. 185–203.

# URBAN FOOD POLICY, ACCOUNTING AND ACCOUNTABILITY FOR ITS GOVERNANCE (SYSTEMATIC LITERATURE REVIEW PROTOCOLS AND EARLY RESULTS) – AN EXTENDED ABSTRACT

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## ABSTRACT

In the last two decades, urban administrators have begun to place food policy on the municipal agenda and build their own policies and institutional structure to systematically govern the urban food system, while having "no clear formal mandate (Battersby, 2017). Rose and Miller have given the evidence, calculation, and record of inhabitants or clusters of inhabitants, giving the power to build policy plans and make governance possible in the real sense. Moreover, within cities, accounting and accountability have demonstrated pivotal importance in food management in the aftermath of the COVID-19 pandemic (e. g. Sargiacomo et al., 2021). Hence, the role of accounting and mechanisms of accountability in ordinary and extraordinary times deserve more investigation. To draft the current picture of urban food policy governance and the position of accounting and accountability practices in the domain, we have chosen our research question as follows 1) up to what level has the literature on urban food policy governance developed to date? (2) what are the main areas of focus in reviewed studies? (2) what are the ontological and epistemological grounds of urban food policy governance (3) which is the role of accounting and accountability practices?

To retrieve relevant peer-reviewed articles and book chapters, a series of keywords combined with Boolean operators were employed separately for Scopus (Elsevier) and Web of Science. We limited our search to English language studies only. We limited our search to English language studies only. The applied queries are shown in Box No.1 and Box No. 2.

```
TITLE-ABS-
KEY ( ( accounting OR accountability OR auditing OR public AND management OR public
  AND administration OR municipal AND administration OR governance OR sustainable
OR sustainability ) AND ( city OR cities OR urban ) AND ( food ) ) AND ( LIMIT-
TO ( LANGUAGE , "English" ) )
```

*Box No. 1 (Scopus)*

```
ALL=((Accounting OR Accountability OR Auditing AND Practices) AND (Cit* AND
Governance) AND (Food OR Agri*))
```

*Box No. 2 (Web of Science)*

Above given queries helped us to obtain a total of 584 studies, 406 from Scopus (Elsevier) and 178 studies from Web of Science (Search was limited to language filter: English and category filters: Accounting & Finance; Social Science, General; Public Administration; Management & Organization; Management). Three hand-searched studies from generalist accounting journals (list adapted from Sargiacomo et al., 2021) were also added to the dataset, totaling 587 studies in the final dataset. By removing the duplicates, total 584 records remained for further screening. After screening the title and abstract of the records, we selected Only 33 for full-text reading. Further, full-text reading helped us to remove 11 more irrelevant studies from the dataset and left us with the final dataset of 22 articles. By examining the referencing details of this selected final dataset, we found that 2019 is the peak year of publication in this area. The Journal of Food Policy contains the highest number of studies in this area, and the United Kingdom and the United States of America contributed to this area more than any country. To further classify and synthesize the results, we will use the framework proposed by Zahirul Hoque (2014), highlighting the topic, research settings, theories, research methods, data analysis technique, and results.

This systematic review stands at the intersection of food policy, accounting, and accountability. Despite contributing to the academic community, it will be relevant to public, private, and non-profit administrations and national and international organizations engaged in urban food policy governance. More importantly, policymakers will find valuable insights to design and implement new policies related to urban food Governance.

*Keywords: Food Crises, Food Policy, Urban Governance, Local governments, Accounting, Accountability, Calculations, Literature Review*

## REFERENCES

Battersby, J. (2017). Food system transformation in the absence of food system planning: The case of supermarket and shopping mall retail expansion in Cape Town, South Africa. Built Environment, 43(3), 417-430.

Rose, Nikolas, and Peter Miller (1992). "Political Power beyond the State: Problematics of Government." The British Journal of Sociology 43,: 173–205.

Sargiacomo, M., Corazza, L., D'Andreamatteo, A., Dumay, J., & Guthrie, J. (2021). COVID-19 and the governmentality of emergency food in the City of Turin. Accounting, Auditing & Accountability Journal, 34(6), 1457-1470.

Sargiacomo, M., Servalli, S., Potito, S., D'Andreamatteo, A., & Gitto, A. (2021). Accounting for natural disasters from a historical perspective: A literature review and research agenda. Accounting History, 26(2), 179-204.

Zahirul Hoque (2014), 20 years of studies on the balanced scorecard: Trends, accomplishments, gaps and opportunities for future research, The British Accounting Review, 33-59

# CO-CREATING SUSTAINABLE BUYING BEHAVIOR AMONG GENERATION Z CONSUMERS: THE ROLE OF EARNED MEDIA

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## ABSTRACT

The urgent need to shift consumer behavior toward a more environmentally friendly path has heightened the attention of academics and practitioners on sustainability marketing. Through co-creation activities, marketing communications should focus on establishing a link between sustainability and well-being in order to persuade Generation Z consumers to act in the desired manner. The purpose of this study is to propose and empirically test a framework based on an examination of the extent to which Earned Media, through a co-creation process, can influence Generation Z consumers' hedonic and eudemonic well-being values and thus motivate them to sustainable purchasing behaviors in the fashion industry.

## RESEARCH METHODOLOGY

For the purpose of this research, a survey will be conducted, using questionnaires that will be distributed to 400 Generation Z participants in Greece. Participants will be between 18-24 y/o. An SPSS analysis will reveal the relationship between the co-creation of sustainable activities and the individuals' well-being state and the role of Earned Media in promoting a sustainable co-creation process in order to shift Generation Z consumers' behavior toward sustainable fashion purchases.

## GAPS AND EXPECTED FINDINGS

The fashion industry, which contributes significantly to a multitude of environmental problems (Clube and Tennant, 2020) is the organizational context in which the research propositions will be empirically explored in the study. Earned media has the potential to shape the behavior of Generation Z consumers toward sustainability within the fashion industry by encouraging consumers to engage in co-creation activities.

Studies have shown that Word-of-Mouth, interactivity, active participation in social platforms, and co-creation can benefit consumers by developing positive emotions (Tanvir et Aktaruzzaman, 2021) and strengthening their well-being. According to Tanvir et al. (2021), the success of sustainable activities of any company, could not be achieved without customer involvement through digital media included

and that is a point that needs further research effort, especially for Generation Z (Shawky, 2022). Djafarova et al. (2022), suggest that there is a need for further research in terms of how Generation Z consumers can be motivated toward sustainable purchases. Therefore, based on the existent literature reviewed, the first research gap that guides the present study is to explore the ways in which companies use Earned Media to change the mindset and behavior of Generation Z consumers in Greece through a process of co-creation that is conducive to sustainable consumption of fashion brands. Studies have shown that co-creation can enhance hedonic and eudemonic well-being (Tang et al., 2020), thus demonstrating a strong relationship between co-creation and happiness. Nikolic et al. (2022), argue that there is insufficient evidence in terms of the behavior of Generation Z consumers. Shawky et al. (2022), state that demographics play an important role in the level of consumers' engagement in sustainable fashion purchases and suggest that this is an area that needs more investigation. The second gap concerns the factors that are likely to influence the intention of Generation Z consumers in Greece to engage in a co-creation value process endorsing sustainable fashion brands. According to Purmono et al. (2021), hedonic values (fun and socialization) can positively affect the impulse fashion-buying behavior of Generation Z consumers. Djafarova and Foots (2022), found that strong positive emotions could motivate Generation Z to ethical purchases. However, these studies did not focus on the relationship between sustainability and "ethical fashion purchases". Thus, the study focuses on exploring the extent to which hedonic and eudemonic well-being motivations encourage Generation Z consumers to act sustainably by purchasing fashion brands.

Table 1: Preliminary Framework Based on the Literature



## EXPECTED CONTRIBUTION OF THE STUDY

This study is expected to contribute both to marketing academia and businesses, by exploring the topic from a theoretical and business perspective. Concerning the theoretical contribution, the study is planning to uncover internal factors that drive Generation Z behavior. Their interest in their hedonic and eudemonic well-being state that emerges from their participation in a co-creation procedure may be an important factor that is able to shift their behavior toward more sustainable purchases, within the fashion sector. Concerning the practical contribution, companies will benefit from the findings, mainly by revealing the way in which Earned Media can influence Generation Z to engage in more environmentally friendly and sustainable behavior in the fashion market. Finally, businesses can gain

a competitive advantage by enhancing participants' hedonic and eudemonic well-being through the promotion of co-creation.

## ORIGINALITY OF THE STUDY

The originality of this paper is that it brings together two topics that are usually studied separately and in qualitative terms. The first one is that it links sustainability with hedonic and eudemonic well-being, focusing on Generation Z and their attitude toward fashion trends. Secondly, it focuses on the role of Earned Media and their contribution to the development of sustainable actions, through the co-creation not only of products that enhance hedonic well-being but also of sustainable social activities that enhance mainly the eudemonic side of well-being, that have not yet received the desired attention in research.

*Keywords: Generation Z, well-being, co-creation, fashion sector, earned media*

## REFERENCES

1. Clube, R. & Tennant, M. (2020), "Exploring garment rental as a sustainable business model in the fashion industry: Does contamination impact the consumption experience?", Journal of Consumer Behaviour, vol. 19, no. 4, pp. 359-370.
2. Djafarova, E. & Foots, S. (2022), "Exploring ethical consumption of generation Z: theory of planned behavior", Young Consumers, vol. 23, no. 3, pp. 413-431.
3. Nikolić, T.M., Perčić, K. & Nećak, M. 2022, "Designing a Sustainable Brand by Engaging Brand-Consumers' Collaboration Generation Z Co-Creators and Influencers in Serbia", Marketing (0354-3471), vol. 53, no. 1, pp. 37-50.
4. Purmono, B., & Ramadania, R. (2021). The Effect of Hedonic Shopping Value on The Impulse Buying of Fashion Products of Generation Z. Journal of Research in Business, Economics, and Management, 16(1), 31-40.
5. Shawky, S., Kubacki, K., Dietrich, T. & Weaven, S. 2022, "The multi-actor perspective of engagement on social media", International Journal of Market Research, vol. 64, no. 1, pp. 19-37.
6. Tang, Y., Chen, S. & Yuan, Z. 2020, "The effects of hedonic, gain, and normative motives on sustainable consumption: Multiple mediating evidence from China", Sustainable Development, vol. 28, no. 4, pp. 741-750.
7. Tanvir, G. M. S., & Aktaruzzaman, M. (2021). Sustainable green customers' engagement through social media for business development. International Journal of Innovative Research and Publications, 1(2), 17-28

# THE INTERRELATION BETWEEN CO-CREATION AND SUSTAINABILITY IN THE FASHION SECTOR

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## ABSTRACT

## BACKGROUND OF THE RESEARCH AND RESEARCH GAPS

*Sustainability, Well-Being, and Co-Creation Process*

Generation Z systematically incorporates the concept of environmental sustainability into its daily lives and sustainability issues drive its demand for fashion brands (Gazzola et al., 2020). Sustainable attitude and behavior are relative to the individuals' well-being as green trends are an expression of their self-perception (Islam et al, 2021), indicate self-presentation and self-actualization perceptions (Djafarova and Foots, 2022), and stimulate a "feel-good" effect (Bianchi et al., 2020). The study conducted by Purmono et al. (2021) investigated the impact of hedonic values on the impulse buying behavior of Generation Z in the context of fashion items. Their findings revealed a noteworthy positive association between hedonic values, including novelty, fun, escapism, and socialization, and the impulse buying behavior of Generation Z. However, their research did not address sustainability concerns. In a separate study, Djafarova and Foots (2022) explored the influence of a feel-good emotion on ethical purchases among Generation Z but did not specifically focus on fashion brands. These gaps in existing research motivate the present study to bridge these knowledge voids.

Hedonic and eudemonic well-being motivations can also be triggered by consumers' involvement and engagement in a sustainable co-creation process (Zhao et al., 2019), and consumers that involve themselves in fashion clothing are more likely to be involved in a purchase (O'Cass et al., 2008). Shawky et al. (2022) argue that consumers' demographic characteristics play a significant role in their level of engagement but further quantitative research is needed in this area to shed light and enhance our understanding.

The first area under investigation is linked to the first research gap that emerged from the existing literature reviewed. It concerns the factors that influence the Greek Generation Z consumers' involvement in a sustainable co-creation process within the fashion industry and the extent to which their hedonic and eudemonic well-being motivations encourage them to act in a sustainable manner when purchasing fashion brands.

*The role of Earned Media*

The second area under examination focuses on the way in which businesses utilize earned media to trigger well-being stimuli and engage Generation Z consumers in the fashion co-creation process.

The practice of sustainable purchase behavior within the fashion industry can be strengthened by incorporating technology, and social media especially when targeting Generation Z consumers who are often motivated by their need for socialization online and engagement (Yadav et al., 2017).

Earned media encompasses an array of tools that are most suitable for sharing information with the new generation of consumers, initiating user-generated content (Anastasiei et al., 2021), and promoting e-WoM which drives consumer engagement (Levy, 2021). Kovacs's (2021), qualitative research study of Generation Z consumers revealed that young people seek information online but still, further research work is needed especially quantitative, to reveal the motivations, attitudes, and behavior of this group of consumers towards sustainable fashion brands. Additionally, Goldring and Azab (2020), propose that the behavioral characteristics of Generation Z consumers impact their fashion-buying habits whilst their attitudes and perceptions of the influence of social media on this topic need further investigation. Djafarova et al. (2022), suggest that new approaches to marketing should be developed to encourage Generation Z consumers toward sustainable purchasing behavior.

Therefore, the present research study, aims to reveal the ways in which fashion brands can utilize earned media to involve Generation Z in a co-creation process that, will trigger the consumers' motivation for enhancing their hedonic and eudemonic well-being, and by doing so, it will subsequently change their mindset and behaviors towards pursuing an environmentally friendly lifestyle and, sustainable purchasing behaviors within the fashion industry.

## NEED FOR A SYSTEMATIC LITERATURE REVIEW

The significance of systematic literature reviews in research cannot be overstated. Firstly, these reviews play a crucial role in synthesizing and examining existing knowledge, offering researchers a comprehensive overview of the subject (Mihalache and Mihalache, 2016). This synthesis allows for the consolidation and integration of findings from numerous studies, resulting in a more comprehensive understanding of the topic and the identification of knowledge gaps. Consequently, researchers can make strong deductions about what has been established or remains unexplored in the studied research area (Vrontis and Christofi, 2021).

Secondly, systematic reviews adhere to a predetermined set of criteria for study selection and evaluation, effectively reducing bias (Dada, 2018). By doing so, these reviews enhance the reliability of the conclusions drawn, thereby bolstering the credibility and trustworthiness of the research findings.

Ultimately, this meticulous approach contributes to the overall quality of the findings (Danese et al., 2018).

Lastly, systematic reviews serve as a valuable tool for identifying areas in need of further research, thus shaping future research agendas and filling gaps in knowledge. By highlighting these areas, systematic reviews guide researchers in determining where additional investigations are necessary and foster the advancement of knowledge in the field.

In the context of this particular research, the utilization of a systematic literature review approach is imperative. This is because the existing body of studies primarily centers around two key relationships: the correlation between well-being and ethical actions, and the connection between well-being and the co-creation process. To the best of the author's knowledge, no previous systematic review has effectively combined all these interconnected concepts.

Furthermore, while there are studies that examine the relationship between fashion and well-being, they predominantly focus on the hedonic aspect of well-being, overlooking the crucial inclusion of sustainability. Until now, there has not been a comprehensive systematic literature review that holistically explores these interconnected concepts together.

## STEPS TO BE FOLLOWED DURING THE SLR

To ensure comprehensive coverage of the research objectives, the present study will employ specific keywords such as "well-being" (and its related terms) AND "co-creation" (and its related terms) in the initial stage. This initial stage aims to create a broad pool of articles that encompass all the topics under investigation. In the second stage, sub-categories will be established as follows: i. Articles that establish connections between well-being and sustainability. ii. Articles that explore the relationship between co-creation and well-being. iii. Articles that investigate how businesses utilize the co-creation process to enhance well-being. By implementing these categories, the primary objective is to gain a focused and coherent understanding of the research topics.

The selected databases for article extraction in this study are EBSCOhost and Scopus. These two databases are widely recognized as prominent resources in the field of business research (Shepherd & Rudd, 2014) and are known for their comprehensive coverage of scientific literature (Aghaei Chadegani et al., 2013). In order to adhere to commonly employed criteria in marketing and business research, the selection of articles for this study will be based on specific requirements. Only articles published in academic journals and written in the English language will be considered. Furthermore, articles must meet or exceed a minimum threshold of 3 in the ABS Journal Ranking System. The

inclusion of the ABS guide is justified due to its reputation as a valuable tool for ensuring the reliability of systematic literature reviews by assessing the quality of journals (Nolan and Garavan, 2016). In the final stage of the systematic review, the extraction of statistics and results will facilitate the identification of the final hypotheses for the research.

## EXPECTED CONTRIBUTION AND ORIGINALITY OF THE STUDY

This research aims to contribute to both theoretical and practical levels. Initially, by highlighting subjected to more in-depth and detailed analysis, and additionally, it will add knowledge to the determinants of demand for sustainable fashion products. This knowledge can be leveraged by businesses, by reinforcing it with additional information on how they can better utilize earned media. The findings of the research will help brands understand that such a tool in their hands can rejuvenate their audience, increase their sales, and enhance their profitability.

The originality of the study resides in the fact that it brings together two topics that are usually studied separately and in qualitative terms: i. The link of sustainability with hedonic and eudemonic well-being, focusing on Generation Z and their attitude toward fashion trends and, ii. The role of Earned Media and their contribution to the development of sustainable actions, through the co-creation process of products or social action like volunteerism or donations.

*Keywords: Well-being, Co-Creation, Fashion sector, Generation Z, Earned Media*

## REFERENCES

1. Aghaei Chadegani, A., Salehi, H., Md Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ale Ebrahim, N. (2013). A comparison between two main academic literature collections: Web of science and scopus databases. Asian Social Science, 9(5), 18–26. https://doi.org/10.5539/ass.v9n5p18

2. Anastasiei, B., Dospinescu, N., Dospinescu, O. (2022), The impact of social media peer communication on customer behaviour – evidence from Romania, Argumenta Oeconomica No 1 (48) 2022 ISSN 1233-5835; e-ISSN 2720-5088

3. Bianchi, C., Reyes, V. & Devenin, V. 2020, "Consumer motivations to purchase from benefit corporations (B Corps)", Corporate Social Responsibility & Environmental Management, vol. 27, no. 3, pp. 1445-1453.

4. Dada, O. (2018). A model of entrepreneurial autonomy in franchised outlets: A systematic review of the empirical evidence. International Journal of Management Reviews, 20(2), 206–226.

5. Danese, P., Manfe, V., & Romano, P. (2018). A systematic literature review on recent lean research: State-of-the-art and future directions. International Journal of Management Reviews, 20(2), 579–605.

6. Djafarova, E. & Foots, S. 2022, "Exploring ethical consumption of generation Z: theory of planned behaviour", Young Consumers, vol. 23, no. 3, pp. 413-431.

7. Gazzola, P., Pavione, E., Pezzetti, R. & Grechi, D. 2020, "Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach", Sustainability, vol. 12, no. 2809, pp. 2809.

8. Goldring, D. & Azab, C. 2021, "New rules of social media shopping: Personality differences of U.S. Gen Z versus Gen X market mavens", Journal of Consumer Behaviour, vol. 20, no. 4, pp. 884-897.

9. Islam, T., Pitafi, A.H., Arya, V., Wang, Y., Akhtar, N., Mubarik, S. & Xiaobei, L. 2021, "Panic buying in the COVID-19 pandemic: A multi-country examination", Journal of Retailing and Consumer Services, vol. 59.

10.      Kovacs, I. 2021, "Perceptions and attitudes of generation z consumers towards sustainable clothing: Managerial implications based on a summative content analysis", Polish Journal of Management Studies, vol. 23, no. 1, pp. 257; 257-276; 276.

11.      Levy, S., Gvili, Y. & Hino, H. 2021, "Engagement of Ethnic-Minority Consumers with Electronic Word of Mouth (eWOM) on Social Media: The Pivotal Role of Intercultural Factors", Journal of Theoretical & Applied Electronic Commerce Research, vol. 16, no. 7, pp. 2608-2632.

12.      Mihalache, M. and Mihalache, O.R. (2016), "A decisional framework of offshoring: Integrating insights from 25 years of research to provide direction for future", Decision Sciences, Vol. 47 No. 6, pp. 1103-1149.

13.      Nolan, C.T. and Garavan, T.N. (2016), "Human resource development in SMEs: A systematic review of the literature", International Journal of Management Reviews, Vol. 18 No. 1, pp. 85-107.

14.      Prakash Yadav, G. & Rai, J. 2017, "The Generation Z and their Social Media Usage: A Review and a Research Outline", Global Journal of Enterprise Information System, vol. 9, no. 2, pp. 110-116.

15.      Shawky, S., Kubacki, K., Dietrich, T. & Weaven, S. 2022, "The multi-actor perspective of engagement on social media", International Journal of Market Research, vol. 64, no. 1, pp. 19-37.

16.      Shepherd, N. G., & Rudd, J. M. (2014). The Influence of Context on the Strategic Decision‐Making Process: A Review of the Literature. International Journal of Management Reviews, 16(3), 340-364.

17.      Vrontis, D., & Christofi, M. (2021). R&D internationalization and innovation: A systematic review, integrative framework and future research directions. Journal of Business Research, 128, 812-823. https://doi.org/10.1016/j.jbusres.2019.03.031

18.      Zhao, J., Huang, J. & Su, S. 2019, "The effects of trust on consumers' continuous purchase intentions in C2C social commerce: A trust transfer perspective", Journal of Retailing and Consumer Services, vol. 50, pp. 42-49.

# SOCIAL MEDIA AND SPONSORSHIP: A CONCEPTUAL MODEL FOR SPORT MARKETERS

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## ABSTRACT

## INTRODUCTION- AIM OF RESEARCH

In the last decade, social media has evolved into a crucial instrument for firms, nonprofit organizations, universities, and even sports clubs in many different fields of society and the communication business (Boatwright and Freberg, 2023). Individuals and enterprises could now interact with, inform, convince, and target their target groups in very efficient ways thanks to the development of novel communication technologies. The majority of social media research has concentrated on relationships formation, promotional techniques, augmenting interaction, and channel-specific methods for digital publishing and engagement (Boatwright and Freberg, 2023). In addition to the efforts to increase the depth of social media research in sports, the research literature on strategic social media practices in sports management has expanded. It is still necessary to investigate not just what has been accomplished, but also the future of this research field. The present research explores the effect of sponsorship on consumers' engagement with sponsors' social media accounts

## THEORETICAL BACKGROUND

Involvement in sport is a valuable notion for comprehending the behaviors and attitudes of sports fans, and it has been connected with the degree of pleasure derived from a specific event. In the context of sports marketing, it has been shown that involvement with sports considerably affects the desire to acquire sponsors' products. In addition, empirical research shows that engagement modulates the connection among user-generated content and brand perceptions (Cheung et al, 2020).

According to Voorveld et al. (2018), social media engagement can be delineated as "cognitive, intuitive emotions or impressions that individuals reveal when using a certain social media, such as satisfying the need to acquire valuable information, spend leisure time, create or share something with anyone else" (p. 40). The goal of this research was to explore the influence of individuals' engagement with social media platforms on awareness of, attitudes towards, and engagement with sponsoring businesses.

Team identification is "the extent to which a fan develops a feeling of closeness with a team and considers the team's achievements as self-relevant" (Wanm, 2006, p. 332). It has been found that fans' indirect media consumption is significantly influenced by the degree to which they identify with their team, suggesting that fans who feel more connected to their team are more likely to listen to, read, or surf the news about their clubs and, by extension, their sponsors (Wanm, 2006).

Academic sponsorship literature and commercial sponsorship studies have both long recognized brand-entity congruence as an important indicator (Wakefield et al., 2020). The level of congruence between a sponsor and the sponsored club indicates the quality of the partnership. Adding to the existing literature, the current study postulates that positive customer responses and increased engagement will occur when there is a high degree of congruence between the sponsor and the sponsee.
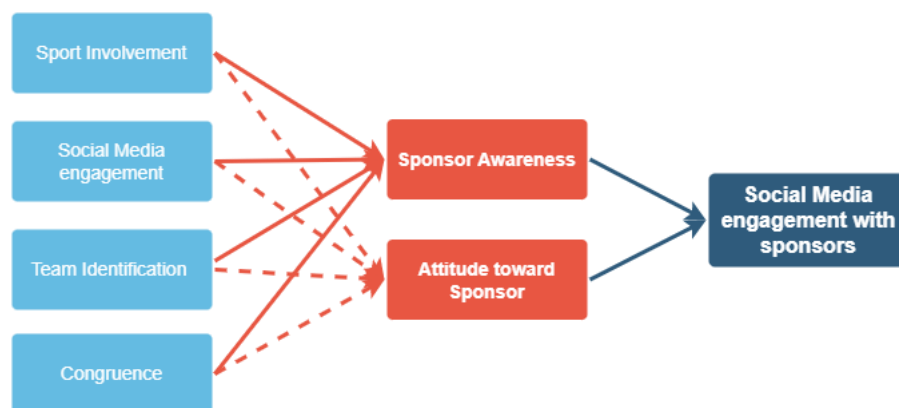


Figure 1. Proposed model

$H_{1-2}$: Sport involvement is expected to affect respondents' attitude toward sponsor and their awareness of sponsors

$H_{3-4}$: Social Media engagement by the respondents is expected to affect their attitudes toward sponsors and their awareness of sponsors.

$H_{5-6}$: Team identification of the sponsor is expected to affect respondents' attitudes toward sponsor and their awareness of sponsors.

$H_{7-8}$: Congruence is expected to affect respondents' attitudes toward sponsor and their awareness of sponsors.

$H_{9-10}$: Respondents' Awareness of and Attitude toward Sponsors is expected to affect their social media engagement with sponsors.


## METHODOLOGY, RESEARCH DESIGN AND DATA ANALYSIS

For the aim of the study, a quantitative methodology was employed, and online surveys were gathered from Greek spectators of FIBA Eurobasket 2022 tournament. A total of 6,442 questionnaires were

successfully completed and analyzed by SPSS and AMOS

## RESULTS, DISCUSSION AND IMPLICATIONS/CONCLUSIONS

The hypothesized relationships of the model were analyzed via the use of Structural Equation Modeling (SEM). Confirmatory factor analysis showed that all the utilized scales had satisfactory adaptation. Specifically, Explanatory Factor Analysis indicated an index KMO>0.8 for all scales. These criteria can then be utilized to construct research questions or hypotheses that are more narrowly focused in order to facilitate further examination. The variance of the data explained by factors varied from 71.9% to 86.2% for the 7 variables. CFA showed that all the scales had: Normed $\chi^2<1$, RMSEA<0.1, NFI>0.95 and CFI>0.9. Finally, strong correlation existed between the awareness of toward sponsors and the spectators' social media engagement with sponsors (0.792). Furthermore, the rest variables' correlation coefficient ranged from (0.216) to (0.788). Moreover, all the suggested hypotheses were confirmed by the structural equation model (SEM) findings ($H_1$-$H_{10}$).

Table 1: Structural Equation Model Weights

| Affect | | | | b | p | Result |
|---|---|---|---|---|---|---|
| H1 | Sport involvement | → | Sponsor awareness | 0.268 | <.001 | S |
| H2 | | | Sponsor Attitude | 0.262 | <.001 | S |
| H3 | Social Media Engagement | → | Sponsor awareness | 0.148 | <.001 | S |
| H4 | | | Sponsor Attitude | 0.123 | <.001 | S |
| H5 | Team identification | → | Sponsor awareness | 0.182 | <.001 | S |
| H6 | | | Sponsor Attitude | 0.543 | <.005 | S |
| H7 | Congruence | → | Sponsor awareness | 0.671 | <.005 | S |
| H8 | | | Sponsor Attitude | 0.384 | <.001 | S |
| H9 | Sponsor Awareness | → | Social Media Engagement with Sponsors | 0.249 | <.001 | S |
| H10 | Sponsor Attitude | → | Social Media Engagement with Sponsors | 0.491 | <.001 | S |

S=support and R= reject

*Keywords: sponsorship, social media, engagement. awareness, attitudes*

## REFERENCES

Boatwright, B. and Freberg, K., 2023. Social Media and Sport Marketing in North America. In The Routledge Handbook of Digital Sport Management (pp. 206-216). Routledge.

Cheung, M.L., Pires, G. and Rosenberger III, P.J., 2020. Exploring synergetic effects of social-media communication and distribution strategy on consumer-based Brand equity. Asian Journal of Business Research, 10(1), pp.126-149.

Voorveld, H.A., Van Noort, G., Muntinga, D.G. and Bronner, F., 2018. Engagement with social media and social media advertising: The differentiating role of platform type. Journal of advertising, 47(1), pp.38-54.

Wann, D.L., 2006. The causes and consequences of sport team identification'In AA Raney & J. Bryant (Eds.) Handbook of sports and media (pp. 331-352).

Wakefield, L., Wakefield, K. and Lane Keller, K., 2020. Understanding sponsorship: A consumer-centric model of sponsorship effects. Journal of Advertising, 49(3), pp.320-343.

# METAVERSE TECHNOLOGIES AS PART OF AN ADAPTATION STRATEGY TOWARDS OVERTOURISM

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## ABSTRACT

The phenomenon of overtourism has emerged as a critical concern for numerous renowned tourist destinations across the globe (Mihalic and Kuščer, 2022; Dhiraj and Kumar, 2021; Gupta and Chomplay, 2021; Koç and Küçükergin, 2021; Borelli, 2021). The negative impacts of excessive tourism, such as overcrowding, environmental degradation, and cultural commodification, have led many destinations to explore innovative strategies to manage and mitigate the effects of tourism (Buhalis et al., 2023; Seraphin et al., 2020; Iflazoglu and Can, 2021; de Oliveira et al., 2022; Pearce and Oktadiana, 2019; Buhalis et al., 2022; Dwivedi et al., 2022).

This research paper proposes the investigation of the potential of metaverse technologies as part of an adaptation strategy towards overtourism. Through a review of relevant literature and case studies was chartered the use of metaverse-related technologies, such as extended realities (virtual reality, augmented reality, mixed reality), blockchain, and artificial intelligence, in enhancing visitor experiences, reducing physical overcrowding, and promoting sustainable tourism practises.

From one perspective, metaverse technologies can offer a range of benefits, including the ability to provide immersive, personalised, and interactive experiences, enable virtual tourism and remote participation, support and expand local tourism businesses, and enhance cultural heritage preservation (Lee et al., 2021; Monaco and Sacchi, 2023; Weber-Sabil and Han, 2021; Prodinger and Neuhofer, 2023; Frey, 2021; Nayyar, 2018; Frey and Briviba, 2021; Oihab, 2022; Chowdhary et al., 2022; Dwivedi et al., 2022).

However, there seem to be several challenges and limitations, such as technological barriers, cost, inclusiveness, and privacy concerns (Borelli, 2021; Babolian Hendijani, 2019; Yang and Wang, 2023; Weber-Sabil and Han, 2021; Redko, 2022; Gupta and Chomplay, 2021), which require careful consideration and strategic management.

Based on the findings, there are proposed recommendations for destinations and tourism stakeholders to effectively integrate metaverse-related technologies into the adopted strategies in a way that matches the destination's needs. Recommendations include, among others, the need for a comprehensive and participatory strategic approach to tourism planning, investment in digital

infrastructure and skill development, collaboration between the public and private sectors, and attention to ethical and social implications.

The study's anticipated contribution to the field is to shed light on the potential role of metaverse technologies as an adaptation strategy towards overtourism. At the same time, it is expected to fill a significant research gap by examining the theoretical and practical implications of integrating metaverse technologies into destination management strategies.

The outcomes of this study may offer valuable perspectives for professionals and policymakers regarding the diverse opportunities, challenges, and available best practises in effectively addressing the issue of overtourism through the utilisation of new technologies. This could facilitate well-informed decision-making and promote strategic, sustainable, and resilient development of the overtourism-affected destinations.

*Keywords: overtourism, metaverse, adaptation strategy, destination management, tourism development, extended realities, virtual reality, augmented reality, immersive tourism, sustainability*

## REFERENCES

Babolian Hendijani, R. (2019), "Delivering Tourism Intelligence about Agritourism", Delivering Tourism Intelligence (Bridging Tourism Theory and Practice, Vol. 11), Emerald Publishing Limited, Bingley, pp. 77-89. https://doi.org/10.1108/S2042-144320190000011007

Borelli, G. (2021), "Overtourism as a Worrying Tide: A Rhythmanalytic Experiment on Venetian Everyday Life", Lyon, D. (Ed.) Rhythmanalysis (Research in Urban Sociology, Vol. 17), Emerald Publishing Limited, Bingley, pp. 171-187. https://doi.org/10.1108/S1047-004220210000017014

Buhalis, D., Lin, M.S. and Leung, D. (2023), "Metaverse as a driver for customer experience and value co-creation: implications for hospitality and tourism management and marketing", International Journal of Contemporary Hospitality Management, Vol. 35 No. 2, pp. 701-716. https://doi.org/10.1108/IJCHM-05-2022-0631

Buhalis, D., Papathanassis, A. and Vafeidou, M. (2022), "Smart cruising: smart technology applications and their diffusion in cruise tourism", Journal of Hospitality and Tourism Technology, Vol. 13 No. 4, pp. 626-649. https://doi.org/10.1108/JHTT-05-2021-0155

Chowdhary, N., Billa, S. and Tiwari, P. (Ed.) (2022), "Indian Tourism. Diaspora Perspectives", Emerald Publishing Limited, Bingley. https://doi.org/10.1108/978-1-80262-937-820221022

de Oliveira, R.A., Baracho, R.M.A. and Cantoni, L. (2022), "The perception of UNESCO World Heritage Sites' managers about concepts and elements of cultural sustainability in tourism", Journal of Cultural Heritage Management and Sustainable Development, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JCHMSD-03-2021-0058

Dhiraj, A. and Kumar, S. (2021), "Overtourism: Causes, Impacts and Solution", Sharma, A. and Hassan, A. (Ed.) Overtourism as Destination Risk (Tourism Security-Safety and Post Conflict Destinations), Emerald Publishing Limited, Bingley, pp. 49-56. https://doi.org/10.1108/978-1-83909-706-520211004

Dwivedi,. Y., Hughes, L., Baabdullah, A., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M, Dennehy, D., Metri, B., Buhalis, D.,... Sigala, M., Spanaki, K., Wei-Han Tana, G., Tiwari, M., Viglia, G., Fosso W. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy" International Journal of Information Management, Vol.66, pp. 102-542, https://doi.org/10.1016/j.ijinfomgt.2022.102542

Frey, B. S. (2021), "Overcoming Overtourism: Creating Revived Originals", Springer Cham, eBook ISBN 978-3-030-63814-6, https://doi.org/10.1007/978-3-030-63814-6

Frey, B., & Briviba, A. (2021). "A policy proposal to deal with excessive cultural tourism". European Planning Studies, Vol. 29, Iss. 4, pp. 601-618. https://doi.org/10.1080/09654313.2021.1903841

Gupta, V. and Chomplay, P. (2021), "Local Residents' Perceptions Regarding the Negative Impacts of Overtourism: A Case of Shimla", Sharma, A. and Hassan, A. (Ed.) Overtourism as Destination Risk (Tourism Security-Safety and Post Conflict Destinations), Emerald Publishing Limited, Bingley, pp. 69-80. https://doi.org/10.1108/978-1-83909-706-520211006

Iflazoglu, N. and Can, I.I. (2021), "As a Possible Solution of Overtourism in Destination: Alternative Tourism Movement", Sharma, A. and Hassan, A. (Ed.) Overtourism as Destination Risk (Tourism Security-Safety and Post Conflict Destinations), Emerald Publishing Limited, Bingley, pp. 97-110. https://doi.org/10.1108/978-1-83909-706-520211008

Koç, B. and Küçükergin, K.G. (2021), "Community Development, Frustration and Overtourism", Sharma, A. and Hassan, A. (Ed.) Overtourism as Destination Risk (Tourism Security-Safety and Post Conflict Destinations), Emerald Publishing Limited, Bingley, pp. 81-93. https://doi.org/10.1108/978-1-83909-706-520211007

Lee, L. H., Braud, T., Zhou, P., Wang, L., Xu, D., Lin, Z.,Kumar, A., Bermejo, C.,Hui, P. (2021). "All one needs to know about metaverse: A complete survey on technological singularity, virtual ecosystem, and research agenda". Cornell University, arXiv preprint arXiv:2110.05352. https://doi.org/10.48550/arXiv.2110.05352

Mihalic, T. and Kuščer, K. (2022), "Can overtourism be managed? Destination management factors affecting residents' irritation and quality of life", Tourism Review, Vol. 77 No. 1, pp. 16-34, https://doi.org/10.1108/TR-04-2020-0186

Monaco, S., Sacchi, G. (2023), "Travelling the Metaverse: Potential Benefits and Main Challenges for Tourism Sectors and Research Applications". Sustainability 2023, Vol.15, Iss.4, pp. 33-48. https://doi.org/10.3390/su15043348

Nayyar, A., Mahapatra, B., Le, D., & Suseendran, G. (2018). "Virtual Reality (VR) & Augmented Reality (AR) technologies for tourism and hospitality industry". International journal of engineering & technology, Vol.7 Iss.2.21, pp. 156-160.

Oihab A. C. (2022), "Intelligent cathedrals: Using augmented reality, virtual reality, and artificial intelligence to provide an intense cultural, historical, and religious visitor experience", Technological Forecasting and Social Change, Volume 178, 121604, ISSN 0040-1625, https://doi.org/10.1016/j.techfore.2022.121604

Pearce, P.L. and Oktadiana, H. (2019), "The Value of Tourism Intelligence", Delivering Tourism Intelligence (Bridging Tourism Theory and Practice, Vol. 11), Emerald Publishing Limited, Bingley, pp. 1-11. https://doi.org/10.1108/S2042-144320190000011002

Prodinger, B., Neuhofer, B. (2023). "Never-Ending Tourism: Tourism Experience Scenarios for 2030". In: Ferrer-Rosell, B., Massimo, D., Berezina, K. (eds) Information and Communication Technologies in Tourism 2023. ENTER 2023. Springer Proceedings in Business and Economics. Springer, Cham. https://doi.org/10.1007/978-3-031-25752-0_31

Redko, V.Y., Krasnikova, N.O. and Krupskyi, O.P. (2022), "Overtourism Effect Management in Destinations", Valeri, M. (Ed.) Tourism Risk, Emerald Publishing Limited, Bingley, pp. 199-219. https://doi.org/10.1108/978-1-80117-708-520221014

Seraphin H., Ivanov S., Dosquet F., Bourliataux-Lajoinie S. (2020), "Archetypes of locals in destinations victim of overtourism", Journal of Hospitality and Tourism Management, Vol. 43, pp. 283-288, ISSN 1447-6770, https://doi.org/10.1016/j.jhtm.2019.12.001

Weber-Sabil, J., & Han, D-I. D. (2021). "Immersive Tourism - State of the Art of Immersive Tourism Realities through XR Technology". Breda University of Applied Sciences, available online: https://www.buas.nl/sites/default/files/2021-05/Immersive%20Tourism_State%20of%20the%20Art_final.pdf (accessed on 12 April 2023)

Yang, F. X., & Wang, Y. (2023). "Rethinking Metaverse Tourism: A Taxonomy and an Agenda for Future Research". Journal of Hospitality & Tourism Research, 0(0). https://doi.org/10.1177/10963480231163509

# INEQUALITY OF KNOWLEDGE DISTRIBUTION IN THE AGRI-FOOD SUPPLY NETWORK AS A DRIVING FACTOR IMPACTING THE ADOPTION OF DISRUPTIVE TECHNOLOGIES

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## ABSTRACT

## INTRODUCTION

Today, every industry, including the agri-food sector, is experiencing a shift towards digital transformation. This is also driven by disruptive technologies such as blockchain, artificial intelligence, Big Data analytics, and the Internet of Things. These technologies have not only the potential of disrupting existing business models but they are at the same time setting the stage for innovation across all business areas, including the supply network. A relevant part in this transformative process is the exchange of knowledge; a key aspect of creating value in a supply network while also increasing competitiveness (Vijayan et al., 2016). While the use of disruptive technologies has the potential to spur the efficiency of the overall supply network, its adoption can vary between participating firms. One of the reasons for this is the inequality in knowledge about the respective technology and its distribution among the companies involved. This inequality has the potential to impact the adoption of disruptive technologies in the agri-food supply network hampering its efficiency and thus the value of the network. Consequently, it is crucial to understand how the inequality in knowledge about potential benefits of disruptive technologies can impact the overall value of the supply network. This is critical to the formulation of focal firms' business strategy aiming to digitise the food supply network they are responsible for.

Despite the significance of these aspects, it is evident that a gap in research exists regarding the factors that impact knowledge inequality between firms in agri-food supply networks. In light of this evidence, this research aims to analyze the development of the inequality of knowledge between firms in an agri-food supply network. We therefore introduce a novel approach combining multi-agent simulation with the Gini coefficient to analyze factors that impact the dissemination of knowledge in supply networks. By investigating this important aspect, we want to provide insights into the factors influencing the digital transformation in the wine industry.

## BACKGROUND

In the agri-food industry supply networks are centrally coordinated by a focal firm that is responsible for the coordination and strategic direction of the network (Hanf and Dautzenberg, 2006). A key task is to maximize the efficieny of the entire network. One approach to achieve this is to promote the knowledge about novel technologies among the firms in the supply network and to ensure that this knowledge is evenely distributed. With the rising level of competition between supply networks it is essential to share and exploit knowledge about innovative technologies among participating firms to the best possible extent. According to Teece a company can create value by sharing its knowledge outside the firm (Teece, 1986). However, when there is a large knowledge gap between firms, it becomes difficult for them to effectively collaborate. On the contrary, inequality and uneven knowledge distribution can hamper growth and provide for inefficiencies leading to cost increase and decreased value creation (Dobreva, 2020; Merritt, 2020).

Based on the theories we developed the proposition that the level of existing knowledge about the benefits of disruptive technologies combined with the attitude of firms towards these technologies has an impact on the inequality in knowledge in the agri-food supply network. Follwing that, we created a method to measure the inequality utilizing the Gini coefficient, which has originally been proposed as a means for measuring income inequality (Gini, 1912). Over the past 100 years it has gradually developed as an index to measure inequality in the context of economics including the impact of knowledge in the realm of economics (Chandrasekar and Sharma, 2010). In the food industry it has been used to determine the uniform and non-uniform distribution of turnover in different categories such as dairy and meat (Hajderllari and Karantininis, 2012).

## METHODOLOGY

The research undertaken for this article is based on a two-dimensional cellular automaton (CA). A cellular automaton is a time and space discrete dynamic multi-agent simulation model characterised by a network of discrete, finite units that are called cells. Cellular automata are used in research to simulate the behavior of supply chains (Martínez et al., 2018) or strategic decision rules (Yan and Feng, 2011). Python's Mesa framework was used to simulate the processes about aquiring knowledge. The agents of the CA represent firms that hold and distribute knowledge according to predetermined rules resulting in time-dependent predictions about the development of knowledge. Four classes of agents exist: the focal agent, that coordinates the network, advocates, who actively promote the adoption of disruptive technologies, observers, that have not made a decision yet and that are still collecting data as part of their decision-making process and, and resistors, who exercise an opposition on the adoption. We studied the effects of the varied distribution of advocates, observers, and resistors

have on the development of knowledge inequality. Moore neighborhood was used and the model has been initialized with a constant knowledge level of 1.0 (normalized) for the focal agent and with randomly assigned knowledge levels of each cell which can change over time based on the knowledge of the other agents, their interactions, the influence the other agents have on their neighboring cells, and on the transition rules. During each step of the iteration, the Gini coefficient of the agent population is calculated. A Gini of 1 signifies that the knowledge is held by one firm, a Gini of 0 means that the knowledge is perfectly even distributed among all firms. There is was no knowledge decay factored in.

## RESULTS

The results show that the extent of knowledge inequality as well as the speed of knowledge distribution and consequently of possible technology adoption depend on interrelated factors such as the percentage distribution of the advocate, observer, and resistor agent types in the network, prior knowledge, learning ability and the general attitude of the firm towards innovation. The model has shown that even with an entire advocate population, there is inequality in knowledge, albeit at a low level. The impact of observers is medium but lead to a high level of inequality. An entire population of resistors tends towards an expected Gini coefficient of 1.0 over time. The scatter plots show the development of the Gini coefficient with a growing agent population (Figure 1-3).
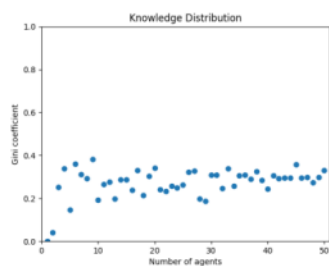


Figure 1: 100% Advocates
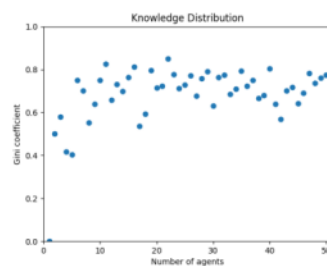


Figure 2: 100% Observers
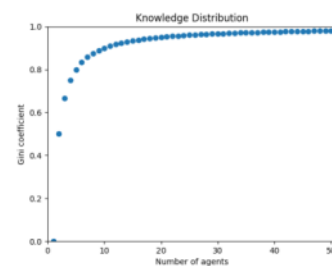


Figure 3: 100% Resistors
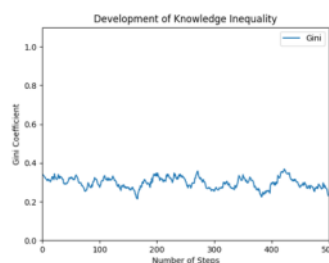


Figure 4: 30% Advocates
70% Observers
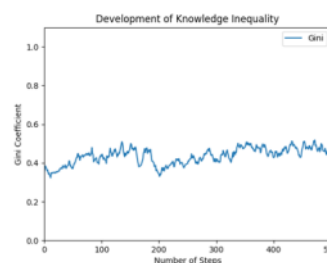


Figure 5: 33% Advocates
34% Observers
33% Resistors
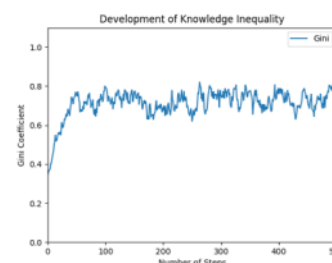


Figure 6: 30% Advocates
70% Resistors

The line charts (Figure 4-6) demonstrate that resistors lead to an increase in inequality of knowledge over time. A Gini coefficient of 0.8 after 500 steps indicates a significant inequality in the distribution

of knowledge, with the minority of agents holding a large part of the knowledge and the majority of agents in the supply networks holding a low knowledge level. In general, a higher Gini coefficient indicates greater inequality. In the context of inter-firm knowledge distribution, high levels of inequality could also have significant implications on the overall efficiency and productivity, which can significantly impact the value creation and competitiveness of the supply network.

The results show that knowledge dissemination should be carried out through an efficient knowledge management system with methods such as training, workshops and face-to-face meetings, where the observing companies are primarily addressed.

*Keywords: inequality, knowledge, dynamic capabilities, blockchain, agricultural supply chain*

## REFERENCES

Chandrasekar, G., Sharma, R.S. (2010). Analysing knowledge disparity and value creation: towards a K-Gini coefficient, Int. J. Knowledge-Based Development, Vol. 1, No. 3, pp.242–262.

Dobreva, J. (2020). THE CHALLENGES OF GLOBAL INEQUALITIES: THE CASE OF EUROPE. Global Inequalities & Polarization, 57.

Gini, C. (1912). Measurement of inequality of incomes. The Economic Journal, Vol. 31, p 124.

Hajderllari, L. Karantininis, K. (2012). The Structural Changes of the Food Industry in the European Union. FOI Working Paper 8, p. 1-15.

Hanf, J.H., Dautzenberg, K. (2006). A theoretical framework of chain management. Journal on Chain and Network Science 6, 79-94.

Martínez, R., Lizárraga, G., Cavazos, L., Salais, T., Saucedo, J. (2018). A New Objective Function to Simulate Supply Chain Performance Under Disruptions with Cellular Automata. In: Torres Guerrero, F., Lozoya-Santos, J., Gonzalez Mendivil, E., Neira-Tovar, L., Ramírez Flores, P., Martin-Gutierrez, J. (eds) Smart Technology. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 213. Springer, Cham. https://doi.org/10.1007/978-3-319-73323-4_3

Merritt, H. (2020). Global Intellectual Property and the uneven distribution of knoledge. Global Inequalities & Polarization, 57.

Teece, D.J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. Research Policy, Vol. 15, pp. 285-305.

Vijayan, G., Kamarulzaman, N. H., Mukherjee, A., & Vaiappuri, S. K. (2016). Strategic Value Creation in a Supply Chain. In B. Christiansen (Ed.), Handbook of Research on Global Supply Chain Management (pp. 186-204). IGI Global. https://doi.org/10.4018/978-1-4666-9639-6.ch011

Yan, W., Feng, X. (2011). Simulation of strategic decision for supply chain on Cellular Automata. International Conference on Computer Science and Service System (CSSS), Nanjing, pp. 731-735, doi: https://doi.org/10.1109/CSSS.2011.5972180

# CONSUMPTION OF ECONOMIC NEWS AND ATTITUDES TOWARD MINORITIES DURING ECONOMIC CRISES

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## ABSTRACT

The mass media, such as television news and social media, are the primary sources of information during a crisis. The purpose of this research was to investigate whether people's exposure to negative or positive news regarding the state of the national or international economy during COVID-19 explained their biases and prejudices. The study examined the links between the intake of economic news and attitudes toward immigrants and ethnic minorities in the midst of the economic crisis brought on by the COVID pandemic. We focused on attitudes toward two different Israeli citizenship minorities: Israeli immigrant citizens from English-speaking countries, a prosperous group that is welcomed by the country's majority population; and Israeli citizens of Palestinian descent, an ethnic low-income ethnic minority, with whom the Jewish Israeli majority is in protracted conflict. This study is based on a survey of 866 Israeli respondents conducted online.

The study revealed that the more frequently respondents were exposed to bad news regarding the economic situation in the national economy, the greater economic threat they perceived. In contrast, when they were exposed to positive news about the national economy, they felt a diminished economic threat. However, no correlation was found between exposure to international economic news and feelings of threat. Consequently, there was no indication of the domestication effect of global economic news on the Israeli media audience.

Since in times of crisis, groups fight for limited resources, a higher economic threat should be correlated with worse relations between ethnic groups, according to the ethnic competition theory. Our findings, however, do not support this claim. First, we revealed that there was no relationship between economic threat and attitudes toward Israeli Palestinian citizens. Second, the level of economic threat reported by respondents was positively correlated with their attitudes toward English-speaking immigrants. Moreover, the more frequently the majority of respondents ingested negative news about the economic condition of Israel's national economy, the more positive attitudes they reported toward both local minorities (immigrant citizens from English-speaking countries and Israeli Palestinian citizens). It seems that, in the presence of a common economic threat, intergroup

conflict recedes into the background, and the sense of belonging to the large group of people who may be harmed by the crisis outweighs any potential harm from intergroup rivalry.

*Keywords: Economic crisis, attitudes toward minorities, immigrants, ethnic group, news consumption, threat, COVID*

# WORK ENGAGEMENT, EMPLOYEE SATISFACTION AND TURNOVER INTENTIONS IN THE CONSTRUCTION INDUSTRY: THE CASE OF THE HIGHWAYS AND TRANSPORTATION DEPARTMENT AT LEEDS CITY COUNCIL, UK.

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## ABSTRACT

The construction industry has long faced challenges in attracting the people needed to meet projected demand and sustain the market (CITB, 2022b). This situation is exacerbated by external factors such as Brexit, the global pandemic, and the demands of the UK government as part of its post-pandemic economic recovery strategy, which has caused increased additional competition with other sectors for resources and skills (CITB, 2022a; CITB, 2022c). Regarding the construction sector's needs, one of the biggest challenges facing UK construction in the next five years is likely to be recruiting enough people to fill the growing number of vacancies (CITB, 2022c; Hughes, 2021a). Indeed, recent reports produced by the Office for National Statistics in the UK (ONS, 2022) stated that 73% of companies operating in the engineering and construction sectors, which accounts for 18% of all UK employment and roughly 21.4% of the UK's GDP, report talent gaps. This aligns with the latest Construction Skills Network (CSN) report (CITB, 2022c), which argues that the construction industry must recruit 266,000 workers over the next five years, over and above the normal flows that have happened to meet projected demand. The report also highlights that "Yorkshire & the Humber is expected to top the growth rankings over the next five years". This means that there will be even more vacancies and intense competition as there will be a need for more workers in the market. This is mainly the case in the construction sector as well as local government Highways and Transportation departments where there is a need for a workforce similar to the construction industry skill sets.

This project focuses on the Highways and Transportation Department (H&T) at Leeds City Council (LCC) in West Yorkshire, UK. Leeds is supported by the largest local authority highway network in England (LCC, 2022b) and is embarking on one of the largest city transport infrastructure investment programme in the UK to fulfil its economic potential and meet the expectations and demands of a wide range of stakeholders (West Yorkshire Combined Authority (WYCA), 2022). The H&T department at LCC is responsible for implementing the programme in the Leeds area, as well as maintaining and improving the existing highway network as a high priority (LCC, 2022b), given its fundamental role in the economy to make Leeds a more attractive place to trade, invest and visit

through transformational investment in key strategic and economic routes (LCC, 2022c). Therefore, this project focuses on the challenges and pressures imposed on the H&T department at LCC, mainly arising from employee turnover and retention issues. This study focuses mainly on resignation (voluntary turnover) to identify key factors contributing to the current situation to address the causes and improve employee retention. The "Met Expectations Model" introduced by Porter and Steers (1973), which was developed based on Vroom's "Expectancy Theory" (1964) (Long et al., 2012; Banks, 2005), was used as a conceptual framework to inform the research design of this study. It was based on the hypothesis that when an employee's perceived expectations are not met, it reflects on their job satisfaction, motivation and engagement. Consequently, their negative feelings, behaviours or actions can impact their intention to leave.

The empirical base of the study was based on primary information sources from the perspective of the Senior Management Team (SMT) of the department focusing on the hypothesis and factors influencing employee job satisfaction, engagement and retention in order to investigate and understand more of the current problems, challenges and needs with the aim of making an informed decision to create an effective people strategy for a sustainable solution. Furthermore, focusing more on the attitudes and experiences of employees working in the H&T department at LCC, this study has used the post-positivist approach through an online questionnaire that has been self-completed by 157 employees at different levels working within the department based on the categories of the turnover model introduced by Porter and Steers aligning with Vroom's theory. Therefore, the key objectives of the survey were to empirically explore the complexity between employees' experiences at the H&T department at LCC and individual needs from one side and the support that the department is willing to offer from the other.

The findings of this study are consistent with the Met Expectations Hypothesis, which predicts that when employees' expectations are not met substantially, their intention to leave the organisation will increase. In line with Vroom's Expectancy theory, the findings also show a direct relationship between satisfaction and motivation. This means that when employees adopt a positive attitude about the working environment and their relationships with peers and the management, their motivation, effort, and performance could result in the best outcome or rewards.

Key recommendations were focusing on the improvement of the level of employee job satisfaction, strengthening employee engagement and reducing the employee turnover rate within the department. This study's contribution is developing a predictive model of employee turnover intentions within the construction sector in the UK. In addition, the study identified critical success factors that can help create a new people strategy and action plan to deal with the skills gap in the sector and to reduce voluntary employee turnover.

*Keywords: Construction Industry, Employee Engagement, Motivation, Turnover Intentions, Retention, Highways and Transportation, City Councils, UK.*

## REFERENCES

Banks, C.H. (2005) "Met Expectations Hypothesis: The Use of Direct Measures to Develop Participant Surveys," United States Department of Education [Preprint]. Available at: https://files.eric.ed.gov/fulltext/ED492442.pdf.

Construction Industrial Training Board (2022a). "The skills construction needs - United Kingdom" Five Year Outlook 2022-2026.

Construction Industry Training Board (2022b). "New perspectives on recruitment to the construction industry". [online] Citb.co.uk. Available at: <https://www.citb.co.uk/media/zktmen43/rethinking-recruitment-constructing-a-more-attractive-industry-full-report-january-2022.pdf> [Accessed 20 April 2023].

Construction Industry Training Board (2022c). "CSN Industry Outlook - 2022-2026". [online] Citb.co.uk. Available at: <https://www.citb.co.uk/about-citb/construction-industry-research-reports/construction-skills-network-csn> [Accessed 25 April 2023].

Construction Leadership Council (2019). "Industry Skills Plan - Industry Skills Plan for the UK Construction Sector 2021 – 2025". 1st ed. Construction Leadership Council.

Hughes, A. (2021a). "The challenge of COVID-19 and highways recruitment". [online] Mymobileworkers.com. Available at: <https://www.mymobileworkers.com/blog/the-challenge-of-covid-19-and-highways-recruitment> [Accessed April 2023].

Hughes, A. (2021b). "The importance of investing in a highways workforce". [online] Mymobileworkers.com. Available at: <https://www.mymobileworkers.com/blog/the-importance-of-investing-in-a-highways-workforce> [Accessed 25 April 2023].

Institution of Engineering and Technology (2021). "IET skills survey 2021". [online] Theiet.org. Available at: <https://www.theiet.org/impact-society/factfiles/innovation-and-skills-factfiles/iet-skills-survey/iet-skills-survey-2021/?utm_source=hootsuite&utm_medium=twitter&utm_term=theiet&utm_content=0b7a47e3-5c9f-4bb5-af00-1cee2edd33e3&utm_campaign=> [Accessed 25 April 2023].

Leeds City Council (2022a). "Leeds City Council, Government Administration", About. [online] LinkedIn. Available at: <https://www.linkedin.com/company/leeds-city-council/about/> [Accessed 25 Apri 2023].

Leeds City Council (2022b). "Leeds City Council, Highways Infrastructure Asset Management Strategy "[online] Leeds.gov.uk. Available at: <https://www.leeds.gov.uk/plans-and-strategies/highways-infrastructure-asset-management-strategy> [Accessed 25 April 2023].

Leeds City Council (2022c). Best Council Plan 2020 – 2025. [online] Leeds.gov.uk. Available at: <https://www.leeds.gov.uk/docs/BCP%202020-2025.PDF> [Accessed 10 July 2022].

Long, Choi Sang, Lee Yean Thean, Wan Khairuzzaman Wan Ismail, and Ahmad Jusoh (2012). "Leadership Styles and Employees Turnover Intention: Exploratory Study of Academic Staff in a Malaysian College." World Applied Sciences Journal. Vol. 19, No. 4, pp:575–81.

Office for National Statistics (2022). "Construction statistics, Great Britain: 2021". Available at: https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/articles/constructionstatistics/2021 [Accessed 03 May 2023].

Porter, L.W. and R.M. Steers, (1973). "Organisational, work, and personal factors in turnover in employee turnover and absenteeism". Psychological Bulletin, Vol. 80, No.2, pp: 151-176

West Yorkshire Combined Authority (2022). Transport strategy. [online] West Yorkshire Combined Authority. Available at: <https://www.westyorks-ca.gov.uk/improving-transport/transport-strategy/> [Accessed 8 July 2022].

Vroom, V. (1964) Work and Motivation. Wiley and Sons, New York.

Vroom, V.; Porter, L. and Lawler, E. (2005). "Expectancy Theories", in Miner, J. Organisational Behaviour 1: Essential Theories of Motivation and Leadership, Routledge. Chapter 7. pp 96-113.

# THE ROLE OF HIGHER EDUCATION INSTITUTIONS IN GREECE IN CRAFTING THE NEW SOCIALLY RESPONSIBLE GENERATION

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## ABSTRACT

Sustainability, ethics, honesty are the main values which purportedly affect the new Generation Z's social and professional lives. Corporate Social Responsibility (CSR) has become the philosophy which encompasses all three of the aforementioned values. It is the mechanism that moves the social marketing strategies on environmental and economic aspects in an attempt to increase the benefits not only for the society, as a whole, but more specifically, for the businesses. Yet, there are many corporations in Greece that have not yet undertaken or considered as salient, policy initiatives related to CSR (Idowu et al., 2015). This is mainly due to the corporate managers' lack of knowledge or due to the inadequate education received by the Higher Education Institutions.

Universities are no different than businesses in terms of their active engagement with their societies. Businesses focus on consumers whereas Universities on students, promoting University Social Responsibility through societal marketing strategies and effective syllabi and practices (Heba, M. A. and Ghada A. Z., Raghda A. and Ahmed Y., 2021). Today, Generation Z holds the keys to $29 billion in purchase power and more than $333 billion in influence (Cinnamon Janzer, 2021). From hiring them to securing them as customers, the bottom line is that being trained effectively on societal marketing and on CSR may be the only viable solution. Generation Z is demanding such a training and Universities quest should be to find a way to meet their expectations. The main question of this study is: How do students perceive the sustainability phenomenon and what should Universities do to properly educate the next societal trail blazers?

In Greece, CSR and social marketing began to gain ground in 2011 when the first companies started implementing their strategies to innovate and penetrate the markets (Skouloudis, 2011). During economic crisis, more than 50 companies in Greece projected their CSR mission to stay in the mind of the consumers that even in a downturn they can sustain and support the economic growth of the country (Metaxas & Tsavdaridou, 2013). Although Greek companies became successful over the years not only by focusing on increasing their sales and profitability, but also by "enhancing and emphasizing their social impact and returning value to society" according to Barlas et al. study (2023), the findings of CSR in Greece are yet limited since there is little understanding of the notion itself and its implementation in society.

Kritas et al. (2020) have argued that in Greece the private sector has shown the willingness and competence to contribute to society and cooperate with the public sector, after the spread of the Covid-19 which brought global institutions, and economies in a critical position. But is sustainability and CSR a priority in Greece? And if not, what should be done to engage generations in fully understanding their benefits? After a prolonged recession, companies in Greece are trying to enforce CSR techniques but there is a great discrepancy between the "walk" (actually doing sustainable actions) and the "talk" (effectively implementing and reporting sustainable projects). Young employees – who mainly belong to generation Z – fail to understand and therefore engage to CSR actions (Papacharalampous et al., 2019).

Many argue about the ineffectiveness of the Greek educational system to prepare the next generation of sustainable thinkers and doers since it is dysfunctional and problematic. The curriculum, the syllabuses and the academic background of the teaching staff is inadequate in promoting sustainability (Giousmpasoglou et al., 2016). It is true that during the last years, Higher Education Institutions (HEIs), have turned their focus on Education for Sustainable Development (ESD), implementing modules in certain scientific departments to promote awareness. Although many articles have been published on the benefits of educating Generation Z for sustainable development, there are only a few that focus on the Greek educational system and support that Higher Education Institutions should equip the students not only with the scientific knowledge regarding their field of expertise but also with the right perception of understanding the world and consequently the market around them. (Leal Filho et al., 2017, 2018; Lozano et al., 2015, 2019, as cited in Sepetis et al., 2020).

Moreover, there are limited findings on whether CSR courses exist in Greek Universities and can thus eventually provide students with the opportunity to have a clear insight of Greek firms promoting CSR successfully and making an impact. Additionally, students' perceptions on corporate social responsibility were investigated only after the economic crisis and on a secondary educational level thus lacking the results of the university or graduates' opinion on the matter (Zaleskiene et al., 2013). What is more, in the years to come entrepreneurs will have to face challenges and follow new trends and innovation. To facilitate their success, HEIs need to take into consideration students' perception of CSR. Further research is needed on private institutions since surveys are solely conducted in public universities. Finally, it is equally important to address the issue to newly graduates that are currently employed and evaluate how the education they received had a positive impact on them and enriched their techniques (Pitotska et al. 2018).

This research aims to shed a glimpse of light on students' perceptions attending Higher Education Institutions in Greece – both private and public – in respect with the dynamic evolution of

sustainability and Corporate Social Responsibility culture phenomena. The research will further attempt to explore the role of all key stakeholders in Higher Education Institutions in effectively educating Generation Z on CSR and in implementing social marketing initiatives. The proposal will set out to prove that through targeted social responsibility strategies, within universities, younger generation will be trained on marketing, economic, environmental, and social aspects thus becoming social – innovators both as consumers and as future marketeers.

The purpose of this study is to explore the above mentioned phenomena through qualitative research and an interpretive approach (Kapoulas & Mitic, 2012). To be more specific and to obtain a better understanding of the question at hand, triangulation is put into effect to gather data from multiple sources so as to uncover participants' perceptions in their social context (Hoque et al. 2013) and increase the credibility of the findings (Xharavina & Kapoulas, 2020). Therefore, in order to investigate the key stakeholders' viewpoints within the Greek HEIs – both private and public – towards CSR the following methods are used:

1. Semi- structured qualitative questionnaires, mainly open-closed, graded from more general (demographics, familiarity with CSR notion) to more specific (understanding of CSR) and addressed to under graduated students in both institutions in Thessaloniki.

2. One focus group with newly graduates that are currently working, not only in Greece but also overseas.

3. Two separate interviews, with the Presidents of the two HEIs (one public and one private) aiming at exploring the efficacy of the educational system in reference to sustainability and uncovering their perceptions in respect with their students' perceptions attending their institutions.

Preliminary pilot findings show that students lack the necessary understanding of how valuable and useful CSR is for their future endeavors (Nikolaidis & Efthymiadis, 2016). The elite experts' responses uncover not only students' apathy to familiarize with the term sustainability but also the ineffectiveness of the Greek educational system to offer relevant courses. According to their opinion: "Students' goal is just to attend 4 years in the university, acquire the necessary hard skills and enter the workforce. They are not interested in any courses offered that focus on sustainability". Additionally, both elite experts support the idea that although public educational institutions are making efforts in promoting CSR both in their syllabuses and the campus management (through campaigns and affiliations with the private sector), aiming to engage students more on sustainability programs, the latter are showing not only apathy but incompetence in understanding such an effort. Some of the answers in the questionnaire - targeting students - prove their belief.

However, it is worth highlighting that sustainability and CSR is part of the educational system when it comes to some private HEIs but still there is space for further improvement. Although both public and

private institutions collaborate with national organisations to strengthen their educational methods, with private institutions showing as mentioned a slight advantage, students are unwilling to participate in any events that offer comprehension on either sustainability or CSR. The need for coevolution though is the key to bring forward the most effective educational system that students understand, appreciate, and take advantage of for the benefit of the society as a whole.

The data collected from this investigation are likely to contribute significantly: Firstly, on an academic level by providing invaluable students' insights in terms of their perceptions about corporate social responsibility. Secondly, on a practitioner level since it gives an insight on how the next societal marketing methods should be crafted based on key stakeholders, students and educational experts.

## REFERENCES

Barlas, A., Valakosta, A., Katsionis, C., Oikonomou, A., & Brinia, V. (2023). The Effect of Corporate Social Responsibility on Customer Trust and Loyalty. Sustainability, 15(2), 1036

Cinnamon, Jansen. (2021) Corporate Social Responsibility and the rise of the Gen Z Worker. Available at: https://www.zenefits.com/workest/corporate-social-responsibility-and-the-rise-of-the-gen-z-worker/ (Accessed: June, 19th 2023)

Heba, M. A. Ghada A. Z., Raghda A. & Ahmed Y. (2021) From university social- responsibility to social-innovation strategy for quality accreditation and sustainable competitive advantage during COVID-19 pandemic. Journal of Humanities and Applied Social Sciences, p.p 10-1108

Hoque, Z., A. Covaleski, M. and N. Gooneratne, T. (2013), Theoretical triangulation and pluralism in research methods in organizational and accounting research, Accounting, Auditing & Accountability Journal, Vol. 26 No. 7, pp. 1170-1198. https://doi.org/10.1108/AAAJ-May-2012-01024

Giousmpasoglou, C., Marinakou, E., & Paliktzoglou, V. (2016). Economic crisis and higher education in Greece. In Impact of economic crisis on education and the next-generation workforce (pp. 120-148). IGI Global

Idowu S.O. and Schmidpeter R. and Fifka M.S. (2015) Corporate Social Responsibility in Europe: United in Sustainable Diversity, Business and Economics

Kapoulas, A., & Mitic, M. (2012). Understanding challenges of qualitative research: Rhetorical issues and reality traps. Qualitative Market Research: An International Journal, 15(4), 354–368. https://doi.org/10.1108/13522751211257051

Kritas, D., Tzagkarakis, S., Atsipoulianaki, Z., & Sidiropoulos, S. (2020). The contribution of CSR during the covid-19 period in Greece: A step forward. HAPSc Policy Briefs Series, 1(1), 238-243

Metaxas, T., & Tsavdaridou, M. (2013). Corporate social responsibility in Greece during the crisis period. Journal of Advanced Research in Management, 4(1 (7)), 20

Nikolaidis, Y, Efthymiadis, G. (2016) Education on Corporate Social Responsibility in Greece. Is there any and does it affect students' perception? Social Responsibility Education Across Europe (pp. 161-184)

Papacharalampous, N., Papadimitriou, D., & Anagnostopoulos, C. (2019). "Walking the talk" in times of recession: the case of corporate social responsibility in Greece. Journal of Global Responsibility, 10(2), 102-118

Pitoska, E., Katarachia, A., & Giannakis, K. (2018). Corporate social responsibility in Greek higher educational institutions. Corporate Governance and Organizational Behavior Review, 2(1), 31-39. http://doi.org/10.22495/cgobr_v2_i1_p3

Sepetis, A and Goula, A and Kyriakidou, N and Rizos, F and Sanida, MG (2020) Education for the Sustainable Development and Corporate Social Responsibility in Higher Education Institutions (HEIs): Evidence from Greece. Journal of Human Resource and Sustainability Studies, 08 (02). pp. 86-106

Skouloudis, A., Evangelinos, K., Nikolaou, I., & Filho, W. L. (2011). An overview of corporate social responsibility in Greece: perceptions, developments, and barriers to overcome. Business Ethics: A European Review, 20(2), 205-226.

Xharavina, N, Kapoulas, A and Miaoulis G. (2020) Netnography as a marketing research tool in the fashion industry in Southeast Europe, International Journal of Market Research, Vol. 62(4) 499–515, DOI:10.1177/1470785319859210

Zaleskiene, I. Vamvakidou, I. Petrucijova, J. (2013) Social Responsibility from the students Perspective: the cases from Greece, Czech Republic, and Lithuania. Socialinis ugdymas, 2013, t. 33, nr. 1, p. 44 -55

# HOW TO INVESTIGATE GREENWASHING BEHAVIOR IN CORPORATE SOCIAL RESPONSIBILITY? A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

The role of business within society has radically changed since the beginning of the third millennium, as corporations are now held responsible for social issues that were previously considered the sole responsibility of States (Gjølberg, 2009). As the landscape of Corporate Social Responsibility (CSR) literature is heterogeneous across disciplinary and theoretical perspectives (Battisti *et al.*, 2023; Battisti *et al.*, 2022, Nirino *et al.*, 2022; Montiel, 2008; Van Gils *et al.*, 2014; Aguinis and Glavas, 2012; Van Marrewijk, 2003), it is arduous to identify an unambiguous definition for CSR (Dahlsrud, 2008). However, the many definitions converge on agreeing on the vast extent to which CSR is related to business' activities and responsibilities towards their stakeholders (Carroll, 2016).

Against the well-known CSR best practices (Yang and Rivers, 2009; Lamberti and Lettieri, 2009), the phenomenon of greenwashing has emerged, along with its variants such as CSR washing and bluewashing (Pope and Wæraas, 2016; Bigge, 2004). As such, CSR can be split into symbolic and substantive CSR (Nardi, 2022; Durand *et al.*, 2019; Marquis and Qian, 2014). Whilst a universally agreed-upon definition of "greenwashing" does not exist among academics (Torelli *et al.*, 2020), it can be broadly defined as "the tactics that mislead consumers regarding the environmental practices of a company or the environmental benefits of a product or service" (Parguel *et al.*, 2011, pp. 15-16). Therefore, greenwashing manifests itself when firms engage in deceptive positive communication about their environmental performance (Delmas and Burbano, 2011), generating an overly positive impression of the company's environmental practices (Lyon and Montgomery, 2015).

Academic attention on greenwashing has increased since the 2000s, raising challenging questions and opportunities for interdisciplinary research (Lyon and Montgomery, 2015). Although some reviews on the topic of greenwashing and CSR can be found in the literature (Santos *et al.*, 2023; Yang et al., 2020; Pope and Wæraas, 2016; Lyon and Montgomery, 2015; Smith and Font, 2014), only the two most recent ones are Systematic Literature Reviews (SLRs), that are "the most useful vehicles for advancing knowledge and furthering research" (Elsbach and Van Knippenberg, 2020, p. 1277). The first focuses on the taxonomy of greenwashing, its causes and consequences (Yang *et al.*, 2020), while the other examines the relationship between greenwashing and stakeholder theory (Santos *et al.*, 2023). Given the relevance of the topic, there is an impelling need for a domain-based review using a hybrid approach that includes both a structured theme-based review and a bibliometric review (Paul *et al.*, 2021). Such a

methodical approach will bring order to the domain by examining the research methodologies applied and the theoretical lens through which researchers have analyzed this phenomenon, with the objective of providing a holistic view of the current research landscape to highlight the most insightful models. To address the existing research gap, the authors of this paper formulated the following research question (RQ1): *How to investigate greenwashing behaviour in the context of Corporate Social Responsibility?* To achieve the research aim, the authors conducted a SLR according to the PRISMA protocol (Page *et al.*, 2021). Notably, no time-related filter was applied, and the cut-off date is end of April 2023. The databases used are Web of Science and Scopus (Zupic and Čater, 2015), using the following search strings: "Greenwash* AND Corporate Social Responsibility", "CSR washing* AND Corporate Social Responsibility", "Bluewash* AND Corporate Social Responsibility". The exclusion-inclusion process was carried out by applying both qualitative and quantitative filters (e.g., ABS ranking, language, field of analysis, type of contributions), resulting in a sample of 49 results.

The results of our research are intended to provide an exhaustive look over the contemporary academic landscape concerning greenwashing and CSR. Our analysis will reveal the dominant use of empirical articles employing quantitative, qualitative, and mixed methods, whilst, in contrast, literature reviews and theoretical papers are expected to account for a smaller portion of the research corpus. In terms of theories, our study anticipates a pronounced usage of the agency theory (Jensen and Meckling, 1976), highlighting its importance in contemporary research. In parallel, we envision moderate applications of the legitimacy theory (Suchman, 1995; Deegan, 2002), the signaling theory (Spence, 1973), the impression management theory (Goffman, 1949; Schlenker, 1980), and the institutional theory (Meyer and Rowan, 1977; DiMaggio and Powell, 1983), which offer unique perspectives on the phenomena under investigation. In addition, we anticipate a diverse range of bibliometric references, including influential authors, prestigious journals, renowned affiliations, citations, as well as an analysis of publication trends.

Through the comprehensive analysis of the existing papers, we will present an integrative framework that outlines the characteristics of greenwashing. With regards to the theoretical contribution, this framework aims to invigorate the academic discourse, facilitating future researchers in applying and developing these influential theories. Moreover, it will provide a pathway for further investigation into the complex topics of greenwashing and corporate social responsibility (CSR) within the realm of high-level academic discourse. Our research also offers practical contributions, specifically, we provide a comprehensive understanding that can inform policymakers, organizations, and stakeholders. This understanding, in turn, can help shape more effective strategies and practices aimed at fighting greenwashing and promoting genuine stewardship.

*Keywords: Greenwashing, Corporate Social Responsibility, CSR washing, Bluewashing, Systematic literature review.*

## REFERENCES

Aguinis, H. and Glavas, A. (2012), "What We Know and Don't Know About Corporate Social Responsibility: A Review and Research Agenda", Journal of Management, Vol. 38 No. 4, pp. 932–968.

Battisti, E., Bresciani, S., Christofi, M. and Vrontis, D. (2022), "Guest editorial: Corporate social responsibility and COVID-19 global crisis: Managerial and financial perspectives in developed and emerging countries", Management Decision, Vol. 60 No. 10, pp. 2637–2641.

Battisti, E., Nirino, N., Leonidou, E. and Salvi, A. (2023), "Corporate social responsibility in family firms: Can corporate communication affect CSR performance?", Journal of Business Research, Vol. 162, pp. 113865.

Bigge, D. M. (2004), "Bring on the bluewash: A social constructivist argument against using Nike v. Kasky to attack the UN Global Compact", International Legal Perspective, Vol. 14, pp. 6-18.

Carroll, A. B. (2016), "Carroll's pyramid of CSR: taking another look", International journal of corporate social responsibility, Vol. 1 No.1, pp. 1-8.

Dahlsrud, A. (2008), "How corporate social responsibility is defined: an analysis of 37 definitions", Corporate social responsibility and environmental management, Vol. 15 No. 1, pp. 1-13.

Deegan, C. (2002), "Introduction: The legitimising effect of social and environmental disclosures - a theoretical foundation", Accounting, auditing & accountability journal, Vol. 15 No. 3, pp. 282-311.

Delmas, M. A. and Burbano, V. C. (2011), "The drivers of greenwashing", California management review, Vol. 54 No. 1, pp. 64-87.

DiMaggio, P. J. and Powell, W. W. (1983), "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields", American sociological review, pp. 147-160.

Durand, R., Hawn, O. and Ioannou, I. (2019), "Willing and able: A general model of organizational responses to normative pressures", Academy of Management Review, Vol. 44 No. 2, pp. 299-320.

Elsbach, K. D. and van Knippenberg, D. (2020), "Creating high-impact literature reviews: An argument for 'integrative reviews'", Journal of Management Studies, Vol. 57 No. 6, pp. 1277-1289.

Gjølberg, M. (2009), "The origin of corporate social responsibility: global forces or national legacies?", Socio-economic review, Vol. 7 No. 4, pp. 605-637.

Goffman, E. (1949), "Presentation of self in everyday life", American Journal of Sociology, Vol. 55, pp. 6-7.

Jensen, M. C. and Meckling, W. H. (1976), "Theory of the firm: Managerial behavior, agency costs and ownership structure", Journal of financial economics, Vol. 3 No. 4, pp. 305-360.

Lamberti, L. and Lettieri, E. (2009), "CSR practices and corporate strategy: Evidence from a longitudinal case study", Journal of Business Ethics, Vol. 87, pp. 153-168.

Lyon, T. P. and Montgomery, A. W. (2015), "The means and end of greenwash", Organization & Environment, Vol. 28 No. 2, pp. 223-249.

Marquis, C. and Qian, C. (2014), "Corporate social responsibility reporting in China: Symbol or substance?", Organization science, Vol. 25 No. 1, pp. 127-148.

Meyer, J. W. and Rowan, B. (1977), "Institutionalized organizations: Formal structure as myth and ceremony", American journal of sociology, Vol. 83 No. 2, pp. 340-363.

Montiel, I. (2008), "Corporate Social Responsibility and Corporate Sustainability: Separate Pasts, Common Futures", Organization & Environment, Vol. 21 No. 3, pp. 245–269.

Nardi, L. (2022), "The corporate social responsibility price premium as an enabler of substantive CSR", Academy of Management Review, Vol. 47 No. 2, pp. 282-308.

Nirino, N., Battisti, E., Ferraris, A., Dell'Atti, S. and Briamonte, M. F. (2022), "How and when corporate social performance reduces firm risk? The moderating role of corporate governance", Corporate Social Responsibility and Environmental Management, Vol. 29 No. 6, pp. 1995–2005.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... and Moher, D. (2021), "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews", International journal of surgery, Vol. 88, pp. 105906.

Parguel, B., Benoît-Moreau, F. and Larceneux, F. (2011), "How sustainability ratings might deter 'greenwashing': A closer look at ethical corporate communication", Journal of business ethics, Vol. 102, pp. 15-28.

Paul, J., Lim, W. M., O'Cass, A., Hao, A. W. and Bresciani, S. (2021), "Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR)", International Journal of Consumer Studies, Vol. 45 No. 4, pp. O1-O16.

Pope, S. and Wæraas, A. (2016), "CSR-washing is rare: A conceptual framework, literature review, and critique", Journal of Business Ethics, Vol. 137, pp. 173-193.

Santos, C., Coelho, A. and Marques, A. (2023), "A systematic literature review on greenwashing and its relationship to stakeholders: state of art and future research agenda", Management Review Quarterly, pp. 1-25.

Schlenker, B. R. (1980), Impression management, Vol. 526, Brooks/Cole, Monterey, CA.

Smith, V. L. and Font, X. (2014), "Volunteer tourism, greenwashing and understanding responsible marketing using market signalling theory", Journal of Sustainable Tourism, Vol. 22 No. 6, pp. 942-963.

Spence, M. (1973), "Job Market Signaling". The Quarterly Journal of Economics, Vol. 87 No. 3, pp. 355-374.

Suchman, M. C. (1995), "Managing legitimacy: Strategic and institutional approaches", Academy of management review, Vol. 20 No. 3, pp. 571-610.

Torelli, R., Balluchi, F. and Lazzini, A. (2020), "Greenwashing and environmental communication: Effects on stakeholders' perceptions", Business strategy and the Environment, Vol. 29 No. 2, pp. 407-421.

Van Gils, A., Dibrell, C., Neubaum, D. O. and Craig, J. B. (2014), "Social Issues in the Family Enterprise", Family Business Review, Vol. 27 No. 3, pp. 193–205.

Van Marrewijk, M. (2003), "Concepts and definitions of CSR and corporate sustainability: Between agency and communion", Journal of Business Ethics, Vol. 44 No. 2-3, pp. 95-105.

Yang, Z., Nguyen, T. T. H., Nguyen, H. N., Nguyen, T. T. N. and Cao, T. T. (2020), "Greenwashing behaviours: Causes, taxonomy and consequences based on a systematic literature review", Journal of Business Economics and Management, Vol. 21 No. 5, pp. 1486-1507.

Yang, X. and Rivers, C. (2009), "Antecedents of CSR practices in MNCs' subsidiaries: A stakeholder and institutional perspective", Journal of Business Ethics, Vol. 86, pp. 155-169.

Zupic, I. and Čater, T. (2015), "Bibliometric methods in management and organization", Organizational research methods, Vol. 18 No. 3, pp. 429-472.

# ORGANIZATIONAL FACTORS DETERMINING FUTURE PERSPECTIVES OF DISABLED EMPLOYEES

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## ABSTRACT

Scholars and political authorities recognize the discrimination faced by people with disabilities in the workplace (Barton, 2013; Oliver and Barnes, 2010; OECD and Union, 2017; Rohmer and Louvet, 2018; Santuzzi *et al.*, 2014) despite the legal recognition (e.g., UN Convention on the Rights of Persons with Disabilities), addressing discrimination and providing career opportunities for disabled employees at the workplace, segregation remains prevalent. According to the United Nations Department of Economic and Social Affairs (2023), unemployment rates for individuals with disabilities are twice as high as their non-disabled counterparts.

Furthermore, current studies of diversity and inclusion in the workplace addressed such questions as the value individuals with diverse characteristics bring (Shore *et al*, 2011), social psychological phenomena that generate and perpetuate exclusionary processes (Bernstein *et al.*, 2020), and people with disabilities engagement, job mapping, accessibility, and targeted recruitment (Ward *et al*, 2012). However, we also know that employees having a disability often lack physical, psychological, social, and financial security (Buciuniene and Kazlauskaite, 2010; Solomon, 2020), and recognition of these challenges by the organization poses a fundamental challenge (Lang, 2009) highlights the importance of overcoming these insecurities to achieve self-fulfillment, creativity, and self-realization (King, 2009). Given the disabling barriers, individuals with disabilities may struggle to focus on their future opportunities, which are important for their successful careers, and instead focus on the obstacles they face (Castillo and Fischer, 2019).

However, organizational factors that create barriers or empower disabled employees to perceive themselves as having the opportunity to build a successful career now and in the future have not been identified, despite that scholars show they are important to investigate to be able to foster diversity and inclusion in organizations (Shier *et al*, 2009; Lindsay, 2011; Vornholt *et al*, 2018).

Therefore, in this study, I aim to address the following question: *What organizational factors affect the future perspectives of disabled employees?* To achieve this, I draw on the Future Time Perspective (FTP) theoretical framework, which suggests that people's perception of the future greatly influences their behavior and choices (Carelli et al., 2015; Schmitt et al., 2013; Seijts, 1998). Although the FTP theoretical framework has historically been used to analyze experiences affected by aging processes from a *cognitive (remaining time)* perspective (Carelli et al., 2015; Laureiro et al., 2017), this study

includes the *affective (remaining opportunities)* FTP dimension, as suggested by Zacher and Frese (2009) and aiming to make a deeper analysis of this socially sensitive issue and to provide scientifically approved recommendations for practice and research.

Through qualitative research – 43 interviews with employees at Lithuanian organizations having mobility or visual disabilities – the study identifies 7 organizational factors that limit the opportunities of individuals with a disability as well as organizational factors that may help individuals with disabilities focus on their future and take advantage of the opportunities presented. The study contributes to *diversity and inclusion in the workplace* search and provides scientifically grounded recommendations for practice and research, specifically in disability employment. This study's novelty lies in its analysis of both opportunities limiting and opportunities opening factors in people with disabilities" experiences in the employment process, including their experiences during the job search and after being employed. Drawing on the Future Time Perspective theoretical framework, this study employed qualitative research to identify such factors. Its contribution to diversity and inclusion and the provision of scientifically grounded recommendations for practice and research, particularly in disability employment, make it a significant addition to the literature.

*Keywords: disability employment, disabled employees, Future time perspective (FTP), affective (remaining opportunities) FTP dimension, diversity employment*

## REFERENCES

Barton, L. (2013), Disability, politics and the struggle for change. Routledge, London. Available at: https://doi.org/10.4324/9781315069517 (Accessed: 27 February 2022)

Bernstein, R.S., Bulger, M., Salipante, P. et al. (2020) "From Diversity to Inclusion to Equity: A Theory of Generative Interactions". Bus Ethics 167, pp. 395–410. Available at: https://doi.org/10.1007/s10551-019-04180-1 (Accessed: 27 February 2022)

Buciuniene, I. and Kazlauskaite, R.U. (2010). "Integrating people with disability into the workforce: the case of a retail chain". Equality, diversity and inclusion: An international journal, 29(5), pp.534-538. Available at: https://doi.org/10.1108/02610151011052816 (Accessed: 27 February 2022)

Carelli, M. G., Wiberg, B., and Åström, E. (2015). "Broadening the TP profile: Future negative time perspective". In M. Stolarski, N. Fieulaine, and W. van Beek (Eds.), Time perspective theory; Review, research and application: Essays in honor of Philip G. Zimbardo (pp. 87–97). Springer International Publishing/Springer Nature. Available at: https://doi.org/10.1007/978-3-319-07368-2_5 (Accessed: 27 February 2022)

Castillo, Y. A. and Fischer, J. M., (2019). "Self-Employment as Career Choice for People with Disabilities: Personal Factors that Predict Entrepreneurial Intentions". Journal of Rehabilitation, 85(1), pp. 35-43. Available at: https://www.researchgate.net/publication/361685435_Resilience_and_entrepreneurial_intentions_of_people_with_disabilities_in_search_of_the_Sustainable_Development_Goals_SDGs (Accessed: 27 February 2022)

King, P. W. (2009). Climbing Maslow"s pyramid. Troubador Publishing Ltd Available at: https://books.google.lt/books/about/Climbing_Maslow_s_Pyramid.html?id=bDJNJ53dFzsCandredir_esc=y (Accessed: 27 February 2022)

Lang, R. (2009). "The United Nations Convention on the right and dignities for persons with disability: A panacea for ending disability discrimination?". Alter, 3(3), pp. 266-285. Available at: https://doi.org/10.1016/j.alter.2009.04.001 (Accessed: 27 February 2022)

Laureiro-Martinez, D., Trujillo, C. A., and Unda, J. (2017). "Time perspective and age: A review of age associated differences". Frontiers in psychology, 8, 101 Available at: https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00101/full (Accessed: 27 February 2022)

Lindsay, S. (2011). "Discrimination and other barriers to employment for teens and young adults with disabilities. Disability and Rehabilitation, 33(15-16), pp.1340-1350 Available at: https://doi.org/10.3109/09638288.2010.531372 (Accessed: 27 February 2022)

Maslow, A. H. (1940). "Dominance-quality and social behavior in infra-human primates". The Journal of Social Psychology, 11(2), pp. 313-324. Available at: https://doi.org/10.1080/00224545.1940.9918752 (Accessed: 27 February 2022)

OECD, and Union, E. (2017). Boosting Social Enterprise Development. Available at: https://doi.org/doi:https://doi.org/10.1787/9789264268500-en (Accessed: 27 February 2022)

Oliver, M., and Barnes, C. (2010). "Disability studies, disabled people and the struggle for inclusion". British Journal of Sociology of Education, 31(5), pp. 547-560. Available at: doi: 10.1080/01425692.2010.500088 (Accessed: 27 February 2022)

Rohmer, O., and Louvet, E. (2018). "Implicit stereotyping against people with disability". Group Processes and Intergroup Relations, 21(1), pp. 127–140. Available at: https://doi.org/10.1177/1368430216638536 (Accessed: 27 February 2022)

Shier, M., Graham, J.R. and Jones, M.E. (2009). "Barriers to employment as experienced by disabled people: A qualitative analysis in Calgary and Regina, Canada". Disability & Society, 24(1), pp.63-75. Available at: https://doi.org/10.1080/09687590802535485 (Accessed: 27 February 2022)

Solomon, C. (2020). "Autism and employment: Implications for employers and adults with ASD". Journal of autism and developmental disorders, 50(11), pp. 4209-4217. Available at: https://doi.org/10.1007/s10803-020-04537-w (Accessed: 27 February 2022)

Shore, L.M., Randel, A.E., Chung, B.G., Dean, M.A., Holcombe Ehrhart, K. and Singh, G. (2011). "Inclusion and diversity in work groups: A review and model for future research". Journal of Management, 37(4), pp. 1262-1289. Available at: https://doi.org/10.1177/0149206310385943 (Accessed: 27 February 2022)

Santuzzi, A. M., Waltz, P. R., Finkelstein, L. M., and Rupp, D. E. (2014). "Invisible disabilities: Unique challenges for employees and organizations". Industrial and Organizational Psychology: Perspectives on Science and Practice, 7(2), pp. 204–219. Available at: https://doi.org/10.1111/iops.12134 (Accessed: 27 February 2022)

Schmitt, A., Zacher, H., and de Lange, A. H. (2013). "Focus on opportunities as a boundary condition of the relationship between job control and work engagement: A multi-sample, multi-method study". European Journal of Work and Organizational Psychology, 22(5), pp. 505–519. Available at: https://doi.org/10.1080/1359432X.2012.698055 (Accessed: 27 February 2022)

Seijts, G. H. (1998). "The importance of future time perspective in theories of work motivation". The Journal of Psychology: Interdisciplinary and Applied, 132(2), pp. 154–168. Available at: https://doi.org/10.1080/00223989809599156 (Accessed: 27 February 2022)

United Nations Department of Economic and Social Affairs (2023). Disability employment. Available at:https://www.un.org/development/desa/disabilities/resources/factsheet-on-persons-with-disabilities/disability-and-employment.html (Accessed: 27 February 2022)

Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Van Ruitenbeek, G., Uitdewilligen, S. and Corbière, M. (2018). "Disability and employment–overview and highlights". European journal of work and organizational psychology, 27(1), pp.40-55. Available at: https://doi.org/10.1080/1359432X.2017.1387536 (Accessed: 27 February 2022)

Ward, A., Moon, N. & Baker, P.M.A (2012). "Functioning, Capability and Freedom: A Framework for Understanding Workplace Disabilities". Employ Respons Rights, 24, pp. 37–53. Available at: https://doi.org/10.1007/s10672-011-9174-2 (Accessed: 27 February 2022)

Zacher, H., and Frese, M. (2009). "Remaining time and opportunities at work: relationships between age, work characteristics, and occupational future time perspective". Psychology and aging, 24(2), pp. 487–493. Available at: https://doi.org/10.1037/a0015425 (Accessed: 27 February 2022)

# EXPLORING HOW TO ENHANCE SMES PRACTICES IN THE TOURISM SECTOR IN TERMS OF SERVICE QUALITY AND SUSTAINABILITY

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## ABSTRACT

This study is part of RESETTING, a European program designed as a tool for "Relaunching European Smart and Sustainable Tourism Models through Digitalization and Innovative Technologies" (RESETITNG, 2022). This project aims to improve the quality of the travel experience, support the decarbonization of the tourism industry and promote more inclusive economic growth - not only for SMEs, but also for local people in the destination - by testing and integrating cutting-edge, digitally driven solutions that reduce burdensome requirements and facilitate the transition to more resilient, circular and sustainable operating models for European tourism businesses. The project will involve 60 SMEs from five countries (Portugal, Spain, Italy, Greece, and Albania). The contribution of managers with different experiences will allow them to evaluate and find solutions that can be helpful and relevant in very specific tourism contexts. This work will help to identify, propose, and validate measurement scales for a web platform developed to help SMEs evaluate their execution of different concepts. The main objective is to use a systematic literature approach to identify and analyze two core constructs: Service Quality and Sustainability. In addition, we also intend to understand how these constructs are measured in the tourism sector, especially regarding small and medium enterprises, to then propose our own measurement scales. The systematic literature review followed several criteria of quality, the scope of the study, and the use of quality ranking of journals where studies are published.

## INTRODUCTION

Sustainability is part of our daily lives and is one of the areas that businesses must focus on in order to develop. Sustainable tourism has been promoted since the early 1990s, when the UNWTO began promoting indicators "as essential tools for policy-making, planning and management processes in destinations" (United Nations World Tourism Organization [UNWTO], 2004). Later, UNWTO launched the Statistical Framework for Measuring the Sustainability of Tourism, which aims to develop an international statistical framework for measuring the role of tourism in sustainable development, including its economic, environmental, and social dimensions, and to support universal, cross-sectoral, and sustainable tourism policies and practices that operate from an integrated, coherent, and robust information base (De Marchi et al., 2022). With this type of framework, tourism

managers will be able to keep an eye on the level of sustainability and eventually identify the actions needed to raise the level in all aspects of tourism, as it has been recognized that defining a set of indicators that are internationally comparable will allow the assessment of sustainability and the improvements needed in tourism destinations (Lozano-Oyola et al., 2012). The European Commission also developed its own model in 2016, called the "European Tourism Indicators System" (ETIS). The ETIS has the explicit aim of contributing to the improvement of sustainable destination management. It aims to assist destinations and stakeholders in measuring their sustainability management procedures so that they can track their success and progress over time (European Commission [EC], 2016). According to the WTO, sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and an appropriate balance between these three dimensions must be established to ensure its long-term sustainability. Mackenzie and Gannon (2019) show different conceptualizations of sustainability based on historical cases, where the government's perspective on sustainability in the 1960s was economic, with environmental concerns either secondary or completely ignored. The focus on environmental sustainability came from entrepreneurs and the private sector, where both prominent figures developed sustainable initiatives (Mackenzie and Gannon, 2019). Today, the WTO believes that the "informed participation of all relevant stakeholders, as well as strong political leadership" is needed to achieve sustainable tourism development. In the SME sector, sustainability is crucial, but it needs to be addressed differently from the rest of the tourism sector. Coles et al (2014) argue that policy interventions could not only focus on most of the tourism sector, as the policies may then be irrelevant to SMEs. Furthermore, the authors note that businesses that are interested in sustainable development could contribute even more if they are properly supported. This is important because SMEs in the hospitality sector may be under less pressure to adopt sustainability practices than large hotel chains, operators, or franchises, as they do not receive the same attention or criticism as large industry players (Mohammed, 2022). Service quality (SQ) and customer satisfaction (CS) are two of the most studied and dominant concepts in the tourism industry. They have enabled tourism managers to provide consumers with memorable experiences by understanding what consumers value and how they like to be treated and remain a "significant source of competitive advantage for tourism and hospitality businesses" (Shyju et al., 2021, p. 30). Since the quality of tourism and hospitality experiences is related to perceived value, satisfaction, and behavioral intentions (Shyju et al, 2021), it is important for tourism businesses to understand how to differentiate themselves in an experience-dominated market such as the hospitality industry (Cetin et al., 2014). Therefore, measuring service quality and tourist satisfaction is crucial for companies to understand if their service is creating value for them or if it is possible to do better. The first models to measure service quality were developed in the 1980s by several authors,

such as Christian Grönroos, Richard L. Oliver, and A. Parasuraman (1985) in the 1980s. On the other hand, industry researchers also introduced scientific methods to measure customer satisfaction, such as the holiday happiness curve, tourist satisfaction index, e-service quality (E-S-QUAL), Resort Hotel Service Performance (RESERV), DINESERV, Ruralqual (Loureiro and Miranda, 2009; Loureiro, 2014; Loureiro and Kastenholz, 2011), and Muslim Customer Perceived Value (MCPV) (Shyju et al, 2021).

## METHODOLOGY

In order to develop a scale that can be used to measure sustainability, service quality, and customer satisfaction, it is necessary to understand which items need to be assessed and what is relevant to customers regarding the concepts, so it is necessary to search for the relevant literature to acknowledge. A collection of publications on the concepts and the industry was gathered from the online libraries of Web of Science and Scopus to select the most relevant material for this review and to identify the topics discussed. As the concepts changed from service quality and customer satisfaction to sustainability, two sets of queries were created. The first focused on service quality and customer satisfaction and the other on terms related to sustainability, corporate social responsibility, and sustainability. Table 1 shows the query terms used in each of the groups. VOSviewer was the software used to analyze the database resulting from the search and selection of articles. It is a free software that allows the creation of different map texts based on network data, bibliographic data, and text data.

Table 1 - Queries to select relevant papers

| Group 1 | ("Service Quality" OR "Customer Satisfaction") AND Tourism |
| | ("Service Quality" OR "Customer Satisfaction") AND SME |
| Group 2 | ("Corporate Social Responsibility" OR Sustainability) AND Tourism |
| | ("Corporate Social Responsibility" OR Sustainability) AND SME |

For **group 1**, a total of 2,617 results were obtained from Web of Science and 2,912 from the Scopus database. Looking at the results, it was possible to see some distribution of the papers in terms of different topics, so the query was restricted to business-related papers only. To further limit the scope of the research, the query was even more restricted: publication years of the papers, since 2019 in the first query and 2017 in the second query; articles were the only document type selected and no language other than English was accepted. With these selection criteria, the final number of articles was 104 from Web of Science and 78 from Scopus. The two databases were merged, and duplicates

were removed, resulting in a total of 153 results (Figure 1).



## RESULTS

The preliminary results for each group as follows. For **Group 1** it was created a term co-occurrence map based on text data with minimum co-occurrence number of seven times (Figure 2).

It is possible to observe five groups of colors and terms, even though they are all connected between them. Quality is a central figure in this map, being connected to all the other terms, which shows the importance of the concept in the literature. It is possible to observe other terms that, besides not having as many occurrences as Quality, are at the heart of the map, such as Originality Value, Difference, and Value, which is in line with the literature recommending that tourism companies must focus on the experience and how to differentiate themselves. The scale has a strong relationship with Performance, Level, Quality, and Dimension, showing their relevance in evaluating the performance of companies.

In this **Group 1** dataset, 2019 is the year with more publications (55), followed by 2020 (47). The papers published in 2017 and 2018 are related to the second query used in this group, as the publication years were extended to collect more relevant articles. It is possible to observe a decreasing number of publications over the years, perhaps considering that concepts such as customer satisfaction and service quality are already widely discussed in the literature. In terms of the number of journal articles, the International Journal of Contemporary Hospitality Management (37), Tourism Management (36), and International Journal of Hospitality Management (34) were the most representative of this group.

**Group 2** initially presented a larger number of papers: 21,082 papers from Web of Science and 32,642 from the Scopus online database. The query was narrowed using the same criteria as in Group 1. In the end, 462 articles from Web of Science and 599 from Scopus were combined, resulting in a total of 1058 articles, which, after removing the duplicates, resulted in 806 results (Figure 3).

```
┌─────────────────────┐         ┌─────────────────────┐
│      Query: WOS      │         │     Query: Scopus    │
│   n = 18 267 results │         │   n = 24 681 results │
│      2 815 results   │         │       7 961 results  │
└─────────┬───────────┘         └──────────┬──────────┘
          │                                 │
┌─────────▼───────────┐         ┌──────────▼──────────┐
│  Selection criteria: │         │  Selection criteria: │
│  Topics; Publication │         │  Topics; Publication │
│  Years; Document     │         │  Years; Document     │
│  Type; Language;     │         │  Type; Language;     │
│  Publication Titles  │         │  Publication Titles  │
│                      │         │                      │
│   n = 417 results    │         │   n = 466 results    │
│      45 results      │         │      133 results     │
└─────────┬───────────┘         └──────────┬──────────┘
          │                                 │
          │       ┌──────────────┐          │
          └──────►│   TOTAL G2:   │◄─────────┘
                  │ n = 1058      │
                  │   results     │
                  └──────┬───────┘
                         │
                  ┌──────▼───────┐
                  │ Selection    │
                  │ criteria:    │
                  │ Remove       │
                  │ Duplicates   │
                  │ n = 806      │
                  │   results    │
                  └──────────────┘
```

For Group 2, it was created a term co-occurrence map based on text data with a minimum co-occurrence number of ten times (Figure 4).
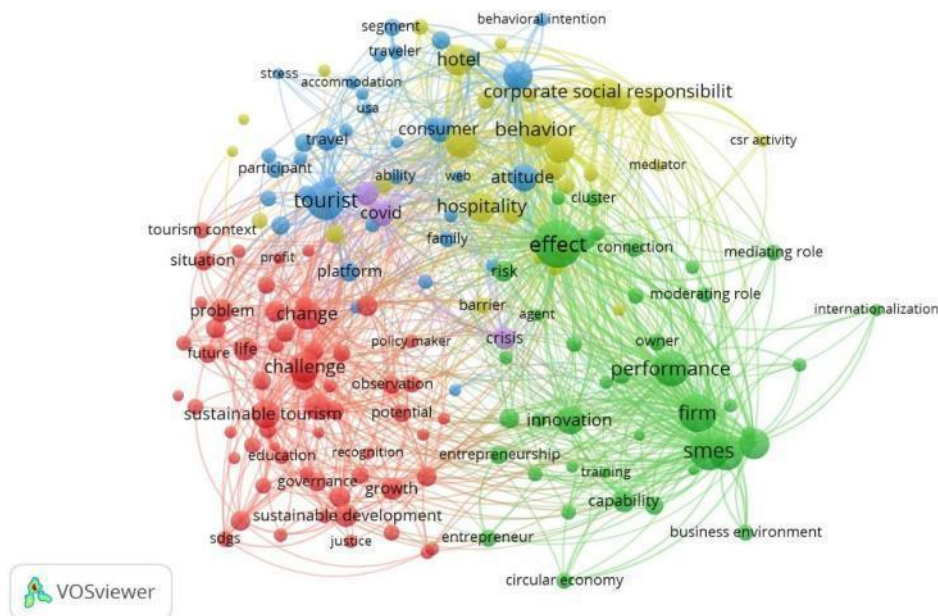
Figure 4 - Co-occurrence map text Group 2

Contrary to what was observed in Group 1, there is no clear separation between the concept groups, except for the red and green groups, all other concepts are correlated with each other. Terms such as effect, performance, company, and SME present a high number of occurrences, in line with the keywords used in the research and with the sustainability effect in the performance of companies. Indeed, according to what was presented before, the relationship between terms such as challenge, change, policymakers, sustainable tourism, education, governance, and sustainable development, shows the importance of policymakers for SMEs to make progress in sustainable development. Researchers focusing on concepts such as consumer and behavior show that the relevance of sustainability does not end in the environmental or financial area, but that today is highly considered in the decision-making process of customers.

In this **Group 2** dataset, 2022 is the year with the most publications (202), followed by 2021 (183). Since 2019, there have been more than 150 articles published each year that were found to be relevant to this database. It is noteworthy that the number of publications has increased in recent years, showing the growing importance of sustainability in the literature. Relative to the number of articles by journal, the Journal of Sustainable Tourism (294) is undoubtedly the journal with the most articles, followed by Tourism Management (90) and the International Journal of Contemporary Hospitality Management (76). Hospitality Management (76).

## CONCLUSIONS AND IMPLICATIONS

This preliminary study gave us the tools to continue to pursue the major objectives, that is, to create a scale to measure service quality adapted to SMEs of the service tourism and above all to propose a scale to measure the self-diagnostic of sustainability for SMEs of the service tourism.

This research can provide substantial contributions to both academics and practitioners. Academic because the scales can add to the theory of quality and sustainability, particularly the last one, since as far as we know there is any comprehensive scale published. Regarding the practical implications, the scales will be used first by the SMEs involved in the European Project and then open to other SMEs.

Next step, we are going to conduct interviews and focus groups with SMEs to create the pool of items based on literature and on the findings of the qualitative step (interviews and focus group). After that the process of refining and validating the scales

## REFERENCES

Cetin, G., Akova, O., and Kaya, F. (2014). "Components of experiential value: Case of hospitality industry". Procedia-Social and Behavioral Sciences, Vol. 150, pp.1040-1049.

Coles, T., Zschiegner, A. K., and Dinan, C. (2014). "A cluster analysis of climate change mitigation behaviours among SMTEs". Tourism Geographies, Vol.16 No.3, pp.382-399.

European Comission (2016). The European Tourism Indicator System: ETIS toolkit for sustainable destination management. https://ec.europa.eu/docsroom/documents/21749

Hillary, R. (Ed.). (2017). Small and medium-sized enterprises and the environment: business imperatives. Routledge.

Loureiro, S.M.C. (2014). "The role of the rural tourism experience economy in place attachment and behavioral intentions". International Journal of Hospitality Management, Vol.40 No.5, pp.1-9. doi: 10.1016/j.ijhm.2014.02.010

Loureiro, S.M.C., and Kastenholz, E. (2011). "Corporate reputation, satisfaction, delight, and loyalty towards rural lodging units in Portugal". International Journal of Hospitality Management, Vol.30 No.3, pp.575–583. doi: 10.1016/j.ijhm.2010.10.007

Loureiro, S., and Miranda G., F. J. (2009). "Perceived Quality in Rural Lodgings of Spain and Portugal: RURALQUAL Scale". The European Journal of Management Studies, Vol.14 No.1, pp. 33-52.

Lozano-Oyola, M., Blancas, F. J., González, M., and Caballero, R. (2012). "Sustainable tourism indicators as planning tools in cultural destinations". Ecological indicators, Vol.18, pp.659-675.

MacKenzie, N., & Gannon, M. J. (2019). Exploring the antecedents of sustainable tourism development.International Journal of Contemporary Hospitality Management, Vol. 31 No. 6, pp. 2411-2427. https://doi.org/10.1108/IJCHM-05-2018-0384

Mohammed, A. H. A. (2022). "SMEs' Sustainable Development Challenges Post-COVID-19: The Tourism Sector". World Journal of Entrepreneurship, Management and Sustainable Development, Vol.18 No.3, pp. 407-424

Moscardo, G. (2015). Tourism and Sustainability: Challenges, Conflict and Core Knowledge. In CSR, Sustainability, Ethics and Governance (pp. 25–43). Springer Nature. https://doi.org/10.1007/978-3-662- 47470-9_2

Shyju, P.J.., Singh, K., Kokkranikal, J., Bharadwaj, R., Rai, S., & Antony, J. (2021). "Service quality and customer satisfaction in hospitality, leisure, sport and tourism: an assessment of research in Web of Science". Journal of Quality Assurance in Hospitality & Tourism, Vol. 24 No. 1, pp. 24-50. doi: 10.1080/1528008X.2021.2012735

RESETTING (october, 2022). About RESETTING. https://www.resetting.eu/about-resetting/ UNTWO World Tourism Organization. (October, 2022). https://www.unwto.org/

WTO (2004). Indicators of Sustainable Development for Tourism Destinations A Guidebook. https://www.e-unwto.org/doi/book/10.18111/9789284407262

# NECESSARY AND SUFFICIENT CONDITIONS FOR IMPLEMENTING HUMAN RESOURCE ANALYTICS IN ORGANIZATIONS

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## ABSTRACT

Researchers predict that by 2025, human resource (HR) analytics will have a strong influence on operational and strategic decision-making and thus a proven impact on business outcomes (Van der Heuvel and Bandarouk, 2017), however, in practice organizations still limit the analysis of HR data to metrics and operational reporting. Applying HR analytics goes beyond using HR metrics that merely describe personnel-related characteristics of an organization in numbers, whereas HR analytics goes one step further by trying to understand relations and interactions between personnel-related characteristics of an organization (Fitz-enz and Mattox, 2014). Human resource analytics is defined as the application of analytic logic for the HRM function (Bhattacharyya, 2017), or as the application of a methodology and integrated process for improving the quality of people-related decisions to improve individual and/or organizational performance (Bassi, 2011). Minbaeva (2017) defines it as an organizational capability that is rooted in three micro-level categories (individuals, processes, and structure) and comprises three dimensions (data quality, analytical competencies, and strategic ability to act). Despite the potential value and interest in HR analytics, organizations still struggle to move from operational reporting to predictive analytics (Minbaeva, 2017). To effectively implement HR analytics in organizations, managers need a better understanding of the conditions necessary for the implementation and those that can be considered sufficient.

The *purpose* of this study is to measure the level of human resource analytics and to identify and distinguish between the conditions that are necessary and sufficient for the implementation of human resource analytics in an organization. The theoretical foundation of this research is based on the micro-foundations view and organizational capabilities perspective, as well as work by Dana Minbaeva (2017) who argues that the development of human resource analytics within an organization requires working in three levels (individuals, processes, and structure) and is related to three dimensions: data quality, analytical competencies of people, and strategic ability to act.

This quantitative study uses a survey method and data consists of subjectively reported experiences from over 204 organizations – a survey of human resource managers representing public and private organizations in Latvia. A complementary approach to data analysis is used – a combination of partial least square structural equation modelling (PLS-SEM) and necessary condition analysis (NCA) (Dul,

2016; Dul *et al.,* 2020)) to examine which dimensions (data, metrics, technologies, people, and change management) are sufficient, and what degree of satisfaction with these attributes is necessary for high overall HR analytics.

The findings show that the overall level of HR analytics in Latvian organizations is quite low, only 20% use predictive analytics and are at 4th maturity level. According to PLS-SEM analysis, data (paths coefficient .23***), metrics (paths coefficient .29***), people capabilities (paths coefficient .25***), and organizations` change readiness (paths coefficient.20***) have a significant impact on the level of maturity of HR analytics in the organization, whereas the availability of technologies and management support appears to be not significant. Still, NCA shows that for the high level of HR analytics (at Level 4, 90% maturity), a minimum level of technologies equal to 77% and management support equal to 88% is necessary. Moreover, until level 4, management support is not necessary, and this is in line with the PLS-SEM result. The results of NCA are presented in the bottleneck table 1 below.

Table 1. Bottleneck table in percentiles

| Maturity level of HR Analytics (level/percents) | | Analytics | Change | Data | Management Support | Metrics | People | Technologies |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00% | -1.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 10.00% | -1.39 | 0.00 | 6.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 20.00% | -1.03 | 5.94 | 8.91 | 0.00 | 0.00 | 2.97 | 4.95 |
| 2 | 30.00% | -0.66 | 5.94 | 14.85 | 0.00 | 0.00 | 4.95 | 4.95 |
| 2 | 40.00% | -0.30 | 9.90 | 15.84 | 0.00 | 15.84 | 4.95 | 4.95 |
| 3 | 50.00% | 0.07 | 9.90 | 15.84 | 0.00 | 15.84 | 4.95 | 9.90 |
| 3 | 60.00% | 0.44 | 17.82 | 15.84 | 0.00 | 15.84 | 20.79 | 9.90 |
| 3 | 70.00% | 0.80 | 17.82 | 18.81 | 0.00 | 15.84 | 29.70 | 23.76 |
| 4 | 80.00% | 1.17 | 39.60 | 25.74 | 46.54 | 58.42 | 45.55 | 32.67 |
| 4 | 90.00% | 1.53 | 61.39 | 74.26 | 88.12 | 58.42 | 92.08 | 77.23 |
| 4 | 100.00% | 1.90 | 93.07 | 85.15 | 95.05 | 58.42 | 98.02 | 77.23 |

We conclude that if an organization wants to go above operational reporting and descriptive analytics to predictive HR analytics, data, metrics, people, and change readiness is not sufficient. For harnessing the full power of HR analytics, the presence of adequate technologies and top management support is necessary. Overall human resource analytics can serve as an organizational capability leading to competitive advantage if an organization is ready for change, collects data on people, and has employees with analytical skills, as well as technologies and management, that support an analytical approach.

Combining different methods of data analysis (PLS-SEM and NCA) provides valuable insights that can be used in future work on implementing HR analytics. We contribute to the academic discourse about

human resource analytics by identifying organizational micro-foundation-related factors that are necessary and sufficient for its introduction. Further research is needed to understand what skills and competencies are required to handle analytics, what might be ethical issues that may come occur, and how those issues should be addressed.

*Keywords: human resource analytics, necessary condition analysis, PLS-SEM*

## REFERENCES

Bassi, L. (2011), Raging debates in HR analytics. People and Strategy, 34(2), pp. 14-18.

Bhattacharyya, D. K. (2017), HR Analytics: Understanding Theories and Applications. International ed: SAGE.

Dul, J. (2016). Necessary Condition Analysis (NCA): Logic and methodology of "necessary but not sufficient" causality. Organizational Research Methods 19(1), 10-52.

Dul, J., van der Laan, E. and Kuik, R. (2020). A statistical significance test for Necessary Condition Analysis. Organizational Research Methods 23(2) 385-395

Fitz-enz, J. and Mattox, J. (2014), Predictive analytics for human resources. Hoboken NJ: John Willey & Sons.

Minbaeva, D. B. (2017), Building credible human capital analytics for organizational competitive advantage. Human Resource Management.

Van der Heuvel, S. and Bandarouk, T. (2017), The rise and fall of HR analytics; A study into future application, value, structure, and system support. Journal of Organizational Effectiveness: People and Performance, 4(2), 157-178.

# IS YOUR BOAT IN STORM CONDITIONS? NEED FOR ORGANIZATIONAL AGILITY IN THE PUBLIC SECTOR DURING CRISIS

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## ABSTRACT

The world is facing considerable changes which enforce leaders to adopt a more resilient and agile way of working to generate positive organizational performance. Thus, organizational agility becomes imperative for survival rather than a choice (Harraf, et al, 2015). Organizational agility, a combination of flexibility, nimbleness, and speed, is increasingly regarded as a source of competitive advantage, however, is rarely associated with public sector organizations (Dowdy, et al., 2017). While the importance of organizational agility is commonly recognized, there are limited studies that interpret agility in the context of the public sector. In public sector bureaucracy-type organizations traditional strategic planning performed well in a stable environment (Hamalainen, et al., 2012), but currently, they are facing increasing problems in a context that calls for rapid adaptation to environmental changes. While the body of research concerning strategic organizational agility is growing, its value and application in the public sector are under-researched, especially during times of crisis.

This *paper aims to* explore the role of strategic agility in public sector organizations in times of crisis and how perceived organizational agility contributes to employee intention to stay. In formulating the theoretical framework, we apply the Job Demands-Resources Theory (JD-R) (Bakker & Demerouti, 2018). We suggest that while job resources are needed for organizations to be agile, perceived organizational agility also will serve as a psychological safety net thus providing specific job resources in times of crises when the stability of jobs might be threatened and thus have a positive impact on employee level outcomes. Based on theoretical considerations, we formulate the following hypothesis: *Perceived organizational agility positively mediates the relationship between organizational resources and employee intentions to stay in times of crisis.*

We empirically analyze the impact of perceived organizational agility on intentions to stay using longitudinal study and panel data collected in public sector organizations in 2019 (T1 before the crisis), in 2020 (T2 during the third wave of COVID-19 after a strict lockdown), and in and 2022 (T3), the total number of respondents 13737 from 58 organizations. We performed a hierarchical panel regression analysis. Table 3 shows the results of hierarchical regression analysis on employee intentions to stay. In Model 1, we entered dummies created for the control variables (organizations (n=58)), the main effects (job resources and demands) in Model 2, and perceived organizational agility in Model 3. Panel regression shows that perceived organizational agility accounts for a significant

increase in the predicting power of the model ($\Delta R^2=0.025^{***}$), thus Hypothesis was supported (see Table 1). Results of this research suggest that when employees perceive their organizations as being strategically agile, they are more willing to stay.

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| Predictor | B | t | B | t | B | t |
| Intercept [a] | 3.247 | 21.278*** | 0.796 | 0.840 | 0.337 | 0.383 |
| | (0.153) | | (0.948) | | (0.879) | |
| Organization dummies | Included | | Included | | Included | |
| Exhaustion | | | -0.407 | -2.877** | -0.289 | -2.181* |
| | | | (0.141) | | (0.133) | |
| Management support | | | 0.024 | 0.250 | -0.040 | -0.445 |
| | | | (0.095) | | (0.089) | |
| Job meaningfulness | | | 0.671 | 3.650*** | 0.559 | 3.266** |
| | | | (0.184) | | (0.171) | |
| Leadership | | | 0.281 | 2.361* | 0.089 | 0.760 |
| | | | (0.119) | | (0.117) | |
| Aim clarity | | | 0.086 | 0.594 | -0.052 | -0.380 |
| | | | 0.145 | | (0.137) | |
| Organizational agility | | | | | 0.541 | 4.592*** |
| | | | | | (0.118) | |
| $R^2$ | 0.608 | | 0.844 | | 0.869 | |
| $\Delta R^2$ | | | 0.236 | | 0.025 | |
| F | | | 34.3 | | 21.1 | |
| p | | | < .001 | | < .001 | |

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; Standard errors are given in parentheses under the coefficients

Table 1. *Results of hierarchical regression analysis on employee intentions to stay*

The empirical contribution of the present study refers to the employee level of perceived organizational agility. Our results indicate that being agile has a positive impact not only on organizational-level outcomes (e.g., survival and competitiveness) but also inside the organization – it increases employee intentions to stay. Thus, we contribute to the JD-R theory by identifying that strategic agility can be considered as a resource positively contributing to employee outcomes. Indeed, if employees believe that their organizations are agile in times of crisis, they will be willing to stay, as they know that the organization is managed well enough and will survive and stay efficient despite external turbulence.

Currently, societies are experiencing several crises simultaneously - climate change, the energy crisis, the danger of stagflation, and Russia's invasion of Ukraine. All these crises pose urgent questions of organizational resilience and agility since they are unlikely to be the last global crises (Phan & Wood, 2020). Hurricanes are going to show up every year, like it or not, and captains and their teams must be

ready to secure the boat. Returning to the boat metaphor, our research shows that if the boat (organization) is hurricane ready, the team (employees) feel safer and their intentions to stay are higher.

*Keywords: strategic agility, public sector, intentions to stay, personnel management.*

## REFERENCES

Bakker, A. B. and Demerouti, E. (2018), "Multiple levels in job demands-resources theory: implications for employee well-being and performance", in E. Diener, S. Oishi and L. Tay, Handbook of Wellbeing, Salt Lake City, DEF Publishers.

Dowdy, J., Maxwell, J. R. and Rieckhoff, K. (2017), "Organizational agility in the public sector: How to be agile in beyond time of crisis", McKinsey & Company.

Hamalainen, T., Kosonen, M. and Doz, Y. L. (2012), "Strategic Agility in Public Management", available at: http://dx.doi.org/10.2139/ssrn.2020436 (accessed 10 November 2022).

Harraf, A., Wanasika, I., Tate, K. and Taldof, K. (2015), "Organizatoional Agility", Journal of Applied Business Research (JABR), Vol. 31 No. 2, pp. 675-686

Nsour, J. A. (2021), "Investigating the impact of organizational agility on the competitive advantage", Journal of Governance & Regulation, Vol. 10 No. 1, pp. 153-157.

Phan, P. H. and Wood, G. (2020), "Doomsday Scenarios (or the Black Swan Excuse for Unpreparedness)", Academy of Management Perspectives, Vol. 34 No. 4, pp. 425-433.

# GROWTH HACKING IMPLEMENTATION. AN OVERVIEW OF BENEFITS AND CHALLENGES

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## ABSTRACT

Over the past decade, the competitive digital landscape in which many successful businesses have emerged has attracted the interest of many scholars (Bresciani et al., 2021). The spreading and combination of new technologies, such as artificial intelligence and big data, has accelerated and shifted the approach to business growth strategies (Santoro et al., 2019). Among these, Growth Hacking (GH) has recently attracted the attention of management scholars (Bargoni et al., 2023). According to Ellis (2010), GH is defined as "that process of rapid experimentation that links marketing and information and communications technology (ICT) to identify the most effective and efficient ways to grow a business".

In the current scenario, the GH approach has been analyzed mainly by professionals and practitioners in books, blogs and online articles, explaining its meaning, methods of utilization and potentials (Ellis, 2014; Holiday, 2014, 2012). Managers are aware of the importance of GH strategies to improve their business growth and scalability (Ellis and Brown, 2017; Ries, 2011). For example, Ryan Holiday (2014), a media strategist and prominent writer on strategy and business, in his bestselling book "Growth hacker marketing revised & expanded" articulates how the way of marketing has undergone a profound change in mindset over time, arguing that the new marketing mindset for growth can be represented by 4 steps of GH, respectively called product-market fit, hack, going viral, and retention and optimization. From a scientific point of view, however, just a few research papers on GH have been published so far. Bohnsack and Liesner (2019) have analyzed GH along the customer lifecycle by applying a taxonomy to provide a solution to different problems that may arise. Troisi et al. (2020) have shown that the application of GH to B2B marketing strategies can benefit from a data-oriented mind-set to generate economic, knowledge-based and marketing advantages throughout the entire supply chain and in the enhancement of relationships with customers. In addition to confirming the relevance and importance of the GH mind-set and process, Conway and Hemphill (2019) also emphasize how it is most effective when it is implemented by a multi-disciplined team of marketers, data analysts, coders/developers and people who use and understand technology. Finally, the recent study proposed by Bargoni et al. (2023) has contributed to the theoretical advancement on GH by presenting multiple research propositions related to the capabilities and routines developed by companies to deal with international markets and for international expansion.

Summing up, current studies on GH are more widely covered by entrepreneurs and managers in books, blogs, corporate testimonials or web articles, leaving a huge gap in scientific and academic journals. To the best of our knowledge, there are no specific empirical studies explaining what benefits and risks are associated with GH implementation in organizational settings. The lack of in-depth coverage on GH contributes to diminishing not only the importance but also the theoretical advancement on the topic. Therefore, the GH literature should be strengthened and supported to enable the theoretical and practical development of this novel approach even from a scientific perspective.

This research aims to contribute to the limited literature on GH by providing new insights on the benefits and challenges that companies encounter while implementing GH, leveraging the perspectives of CEOs and Growth Managers who are presently involved in the growth process of their respective companies.

In line with the above, this paper aims to address the following research question:

RQ. What are the benefits and the challenges of GH implementation?

This research leverages an inductive qualitative research design approach focused on multiple case studies (Eisenhardt and Graebner, 2007) of micro enterprises, consulting agencies and professional (GH) consultants. More specifically, this study undertakes an investigation of innovative companies across diverse business domains, such as gaming, fitness, travel, and accounting services. Our primary objective was to analyze their business development and growth plans, especially their employment of innovative approaches in such plans. The inclusion of perspectives from various sources, such as firms, consultants, and startuppers, has provided a comprehensive and diverse analysis, thereby enhancing the overall value and credibility of our research. To collect the necessary data, the authors conducted semi-structured interviews with CEOs, managers and consultants of micro and small enterprises. To facilitate qualitative data analysis, the interviews were fully recorded, transcribed and analyzed manually. Specifically, qualitative data were analyzed according to the Gioia (2013) methodology to preserve the rigor of qualitative research.

Our results observe that GH has the potential to generate numerous benefits that can facilitate the adoption of this approach when implemented in companies (i.e. scalability of strategies and data-driven culture; learning from failures; more leaner, efficient and ordered processes; readiness to respond to change). The findings also reveal interesting insights about the challenges of GH implementation in companies, including entry barriers, lack of time, budget and resources, and propensity for risk, failure, and patience.

This research contributes to the theoretical advancement on GH as follows: first, we fill a gap in the GH literature by examining the effects of its implementation in management and marketing; second,

we provide empirical evidences into the benefits that companies gain due to GH implementation; third, the study provides evidences of the challenges that companies face during GH implementation. Meanwhile, from a more practical perspective, we gather empirical evidence to investigate the impact that GH implementation has had on companies and the benefits and challenges that have arisen. By doing so, companies and their managers should proactively leverage GH implementation and make greater use of it, given the positive benefits. However, managers need to be aware of the challenges of GH implementation and use it carefully due to the presence of entry barriers and possible lack of resources or propensity for risk.

*Keywords: Growth Hacking, Big data, Digital transformation, Experimentation process, Test, Growth strategies, Business growth.*

## REFERENCES

Bargoni, A., Jabeen, F., Santoro, G., Ferraris, A., 2023. Growth hacking and international dynamic marketing capabilities: a conceptual framework and research propositions. Int. Mark. Rev. https://doi.org/10.1108/IMR-07-2022-0156

Bohnsack, R., Liesner, M.M., 2019. What the hack? A growth hacking taxonomy and practical applications for firms. Bus. Horiz. 62, 799–818. https://doi.org/10.1016/j.bushor.2019.09.001

Bresciani, S., Ferraris, A., Romano, M., Santoro, G., 2021a. Building a Digital Transformation Strategy, in: Digital Transformation Management for Agile Organizations: A Compass to Sail the Digital World. Emerald Publishing Limited, pp. 5–27. https://doi.org/10.1108/978-1-80043-171-320211002

Conway, T., Hemphill, T., 2019. Growth hacking as an approach to producing growth amongst UK technology start-ups: an evaluation. J. Res. Mark. Entrep. 21, 163–179. https://doi.org/10.1108/JRME-12-2018-0065

Eisenhardt, K.M., Graebner, M.E., 2007. Theory building from cases: Opportunities and challenges. Acad. Manage. J. 50, 25–32. https://doi.org/10.5465/AMJ.2007.24160888

Ellis, S., 2014. Sean Ellis: The Rise of the Growth Hacker. Wall Str. J.

Ellis, S., 2010. Find a Growth Hacker for Your Startup [WWW Document]. URL https://www.startup-marketing.com/where-are-all-the-growth-hackers/ (accessed 5.12.22).

Ellis, S., Brown, M., 2017. Hacking Growth: How Today's Fastest-Growing Companies Drive Breakout Success. Crown.

Gioia, D.A., Corley, K.G., Hamilton, A.L., 2013. Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. Organ. Res. Methods 16, 15–31. https://doi.org/10.1177/1094428112452151

Holiday, R., 2014. Growth Hacker Marketing: A Primer on the Future of PR, Marketing, and Advertising. Penguin.

Holiday, R., 2012. Everything Is Marketing: How Growth Hackers Redefine The Game [WWW Document]. Fast Co. URL https://www.fastcompany.com/3003888/everything-marketing-how-growth-hackers-redefine-game (accessed 5.17.22).

Ries, E., 2011. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses, 1° edizione. ed. Currency.

Santoro, G., Fiano, F., Bertoldi, B., Ciampi, F., 2019. Big data for business management in the retail industry. Manag. Decis. 57, 1980–1992. https://doi.org/10.1108/MD-07-2018-0829

Troisi, O., Maione, G., Grimaldi, M., Loia, F., 2020. Growth hacking: Insights on data-driven decision-making from three firms. Ind. Mark. Manag. 90, 538–557. https://doi.org/10.1016/j.indmarman.2019.08.005

# ATTENUATING HEALTH ISSUES RELATED TO THE AGING POPULATION THROUGH STRATIFIED MEDICINE WITH RESPECT TO DEP TECHNIQUE

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## ABSTRACT

The health systems of many countries are facing serious challenges concerning current and expected demographic trends that can surpass their infrastructure and financial resources. The United Nations has reported that the world's population will continue to age, reaching 9 billion by 2050, and in the developed countries, the number of people over 60 years of age is expected to almost double, from 245 million in 2005 to 406 million in 2050. Related to this phenomenon of aging populations are increasing rates of chronic illnesses such as heart failure, hypertension, chronic respiratory diseases, and diabetes, some of the factors that are driving the need to review how care is organized and the need to propose new interventions. For instance, the Health Council of Canada has estimated that chronic illnesses are associated with 70% of Canadian hospital stays. Additionally, a shortage of health professionals has become a problem around the world, which also imposes certain constraints in almost all countries. According to World Health Organization estimates, 57 countries are experiencing serious shortages of health professionals. Such challenges require an innovative approach in order to reduce the burden added to health care systems. Health care systems would benefit from recent technologies that can contribute to this cause.

Stratified medicine offers an option that could help attenuate some of the problems associated with aging populations, rates of chronic illness, and shortages of health professionals and financial resources and, at the same time, facilitate service reorganization. It also offers an option with many of the benefits without the associated costs, allowing treatments to be selected from an appropriate panel, and avoiding the common "trial and error" approach of replacing a therapy only once it is demonstrated to be ineffective in the patient.

One of the most innovative and affordable techniques introduced recently to medicine is dielectrophoresis (DEP). This technique has been proven to be effective in various applications in cancer research throughout the last two decades. DEP holds immense promise for the future of stratified medicine due to its simplicity, fast and non-invasive approach. This is because the technique allows for the isolation and identification of cancerous cells' physiological properties at very early stage of various cancers such as oral and oval cancer. Furthermore, dielectrophoresis has numerous

potential applications in personalized medicine, as it can be used to detect the cells' response to specific drugs when being administered solo or in combination with another drug or radiotherapy. DEP can potentially reduce unneccessory cost added to health care systems when it comes to treatment of cancers efficiently.

Unlike other complicated techniques such as protein analysis and QPCR that require sophisticated crew and costly equiments, this method merely involves taking samples like blood or mucos from the patient, inserting them to an affordable chip and finding out whether cells are responding to a specific treatment or not through a user-friendly software linked to DEP machine. The entire process generally does not exceed more than an hour, and can be performed by any practitioner without lengthy training.

*Keywords: Health care system, stratified medicine, personalised medicine, Health care challenges, DEP, innovative technologies, low cost techniques, aging population.*

## REFERENCES

1. United Nations. Economic and Social Affairs. 2007. World Population Prospects: The 2006 Revision URL: http://www. un.org/esa/population/publications/wpp2006/WPP2006_Highlights_rev.pdf[WebCite Cache ID 5q7ZuxjHy]

2. ; World Health Organization. Department of Chronic Diseases and Health Promotion. 2005. Preventing chronic diseases:                  a                  vital                  investment                  URL: http://www.who.int/chp/chronic_disease_report/contents/foreword.pdf[WebCite Cache ID 5q7dfMMe6]

3. Health Council of Canada. 2007. Population patterns of chronic health conditions in Canada: A data supplement to: Why health care renewal matters: learning from Canadians with chronic health conditions URL: http://www.healthcouncilcanada.ca/
docs/rpts/2007/outcomes2/Outcomes2PopulationPatternsFINAL.pdf[WebCite Cache ID 5q7fhLkCe]

4. World Health Organization. 2006. The global shortage of health workers and its impact. Fact sheet N° 302 URL: http:/ /www.who.int/mediacentre/factsheets/fs302/en/[WebCite Cache ID 5q7gG9uvO]

5. Tremblay M. École nationale d'administration publique. 2008. Analyse des impacts de la mondialisation sur la santé au Québec. Rapport 5: Enjeux et défis de la pénurie des professionnels de la santé URL: http://archives.enap.ca/bibliotheques/ 2008/05/030032714.pdf[WebCite Cache ID 5q7gnoMo3]

6. Mahabadi, S. (2020). The investigation of cancer treatments effects on electrophysiological properties of cells by DEP with respect to personalised and stratified medicine (Doctoral dissertation, University of Surrey)

7. Broche, L. M., Bhadal, N., Lewis, M. P., Porter, S., Hughes, M. P., & Labeed, F. H. (2007). Early detection of oral cancer–Is dielectrophoresis the answer?. Oral oncology, 43(2), 199-203.

# RELATIONAL CONFLICT WITHIN FAMILY FIRMS: A CASE STUDY OF AN ITALIAN SME

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## ABSTRACT

This research project employs a qualitative methodology to study an innovation process initiated within the family sphere through the development of a new Business Model. The study uses the lens of the Paradox theory and focuses on the context of Family Firms. Specifically, the research is set in the literature of family involvement, with a particular emphasis on conflictual forms within the economic activity domain and their potential to generate positive value. The aim of this research is to gain a deeper understanding of these phenomena. A single case study approach is adopted. The findings shed light on the dynamics of relational conflict among family members within an established family firm. The evidence suggests that effective management of conflict, achieved through targeted isolation and resolution of specific conflict areas, can serve as a catalyst for the development of a new business model.

| Respondents/ Interviewees | 1° turn | minute | 2° turn | minute |
|---|---|---|---|---|
| Members of the Board of Directors | 3 | 275 | 3 | 260 |
| Managers in charge of company divisions | 2 | 155 | 2 | 125 |
| Employees | 7 | 370 | 0 | 0 |
| Relatives and related not in the company | 5 | 410 | 1 | 90 |
| Commercial agents | 2 | 100 | 0 | 0 |
| Totals | 19 | 1310 | 6 | 475 |
| Total hours of interviews | 29,75 h | | | |
| Total number of interviews | 25 | | | |

Table 1: Interview schedule done inside the case study firm. Specification of numbers, minutes.

| 1° Step | 2° Step | 3° Step |
|---|---|---|
| Data collection trough: | Aggregation of collected data through the: | Data Elaboration trough the: |
| a) Interviews; | a) determination of the 12 Thematic Nodes; | a) comparison of the evidence got with the aid of logical, documental confirmation and with the aid of respondents final confrontation. |
| b) Observations; | b) determination of the 7 Secondary or Final Thematic Nodes; | b) determination of the evidence in the form of 3 propositions. |
| c) Triangulation of information; | c) organization of a conceptual graphic framework. | |
| d) Internal/external documents; | | |
| e) comparisons made possible. | | |
| The data has undergone a thematic encoding process in 3 areas: BMI, conflict themes e specific aspects relating to the FF topic. | The data have been aggregated until the determination of 7 stand-alone topics. These are reorganized inside a graphic illustration of the framework. | Completion of the data analysis and results verification through various type of confirmations. Illustrations of the results of the scientific discussion. |

Table 2: Data Analysis Processes from data collection to data elaboration.
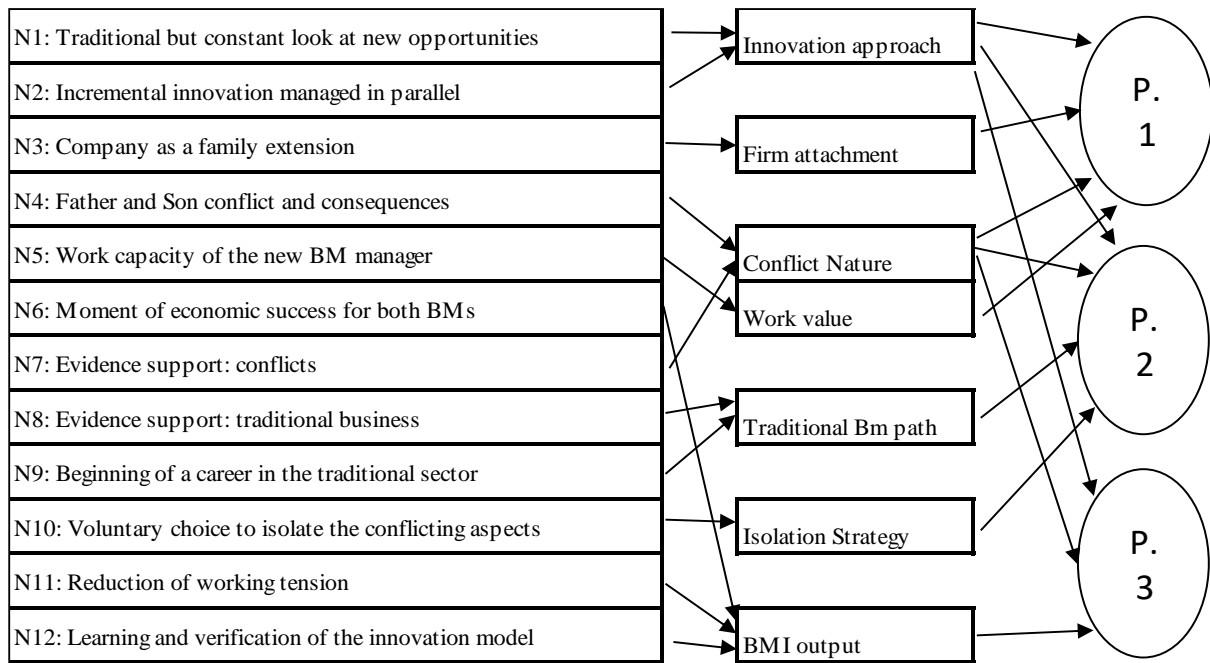
Table 3: Data aggregations process. Determination of 3 propositions trough 12 thematic nodes.
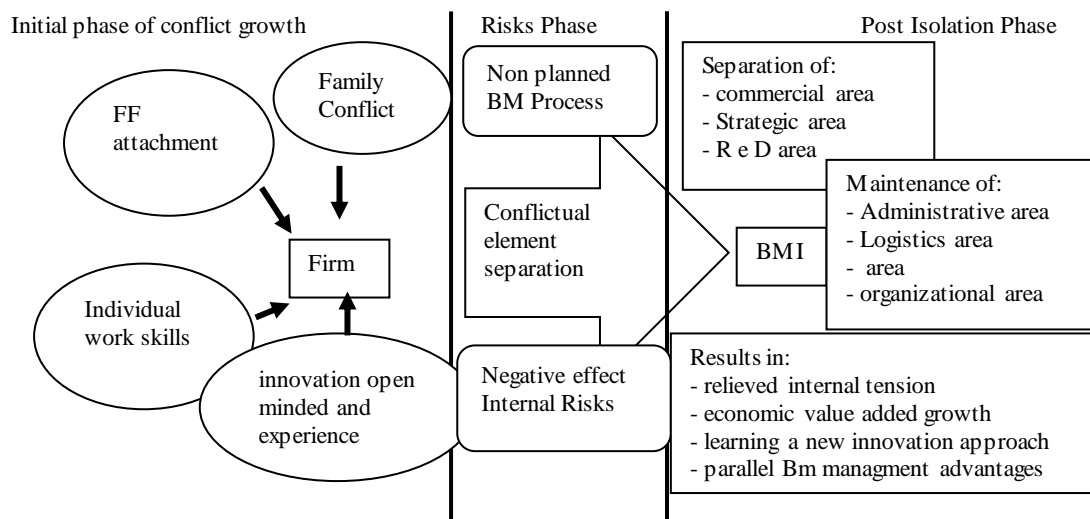


Table 4: Graphic framework of the

*Keywords: family firms, conflicts, Business Model Innovation, Parallel BMI, Incremental Innovation, family involvment, Paradox theory, Paradoxical Thinking, Qualitative approach, new profit solutions.*

## REFERENCES

Andreini D. et all., (2022), Business model innovation: a review of the process-based literature, Journal of Management and Governance, Vol. 26, p. 1089–1121;

Arzubiaga U. et all., (2018), Entrepreneurial orientation and innovation in family SMEs: unveiling the (actual) impact of the Board of Directors, Journal of Business Venturing, Vol. 33, p. 455–469;

Berends H. et all., (2016), Learning while (re)configuring: Business model innovation processes in established firms, Vol. 14, p. 181-219;

Barret M. A. and Moores K., (2019), The what and how of Family business paradox: Literature inspired distillations and directions, International small business journal: researching entrepreneurship, Vol. 38, p. 154-183;

Brenk S.,et all., (2019), Learning from failures in business model innovation: solving decision-making logic conflicts through intrapreneurial effectuation, Journal of business economics, Vol. 89, p.1097-1147;

Calabrò A. et all., (2018), Innovation in family firms: a systematic literature review and guidance for future research, International Journal of Management Reviews, Vol. 0, p. 1-39;

De Massis A. et all., (2015), The impact of family involvement on SMEs' performance: Theory and evidence. Journal of Small Business Management, Vol. 53, p. 924-948;

De Massis A. et all., (2015), Family-Driven Innovation: resolving the paradox in family firms, California management review, Vol. 58, p. 5-19;

Erdogan I. et all., (2019), Managing the tradition and innovation paradox in family firms: A family imprinting Perspective, Entrepreneurship theory and practice, Vol. 44, p. 20-54;

Hacklin F. et all., (2018), Strategies for business model innovation: how firms reel in migrating value, Long Range Plan, Vol. 51, p. 82–110;

Ingram A. E. et all., (2016), Paradoxes and innovation in family firms: the role of paradoxical thinking, Entrepreneurship theory and practice, Vol. 40, p. 161-176;

Kellermanns F. W. et all., (2012), Innovativeness in family firms: A family influence perspective, Small Business Economics, Vol. 38, p. 85–101;

Kim S. and Min S., (2015), Business model innovation performance:When does adding a new business model benefit an incumbent?, Strategic Entrepreneurship Journal, Vol. 9, p.34-57;

Kubicek A. and Machek O., (2020), Intrafamily Conflicts in Family Businesses: A Systematic Review of the Literature and Agenda for Future Research, Family Business Review, Vol. 33, p. 194-227;

Laasch O. (2018), Beyond the purely commercial business model: organizational value logics and the heterogeneity of sustainability business models, Long Range Plan, Vol. 51, p. 158–183;

Pina e Cunha M. and Putnam L. L., (2017), Paradox theory and the paradox of success, Strategic Organization, Vol. 17, p. 95-106,;

Qiu H. and Freel M., (2019), Managing family-related conflicts in family business: A review and research agenda, Family Business Review, Vol. 33, p. 90-113;

Tse T., (2013), Paradox resolution: A means to achieve strategic innovation, European Management Journal, Vol. 31, p. 682–696.

# GENERATIVE ARTIFICIAL INTELLIGENCE AND INNOVATION MANAGEMENT: CONCEPTUAL FOUNDATIONS

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## ABSTRACT

**Purpose** – This work defines Generative Artificial Intelligence (Gen-AI) and discusses its conceptual foundations for research in innovation management research. It also sketches research themes and propositions that contribute to a promising research agenda.

**Design/methodology/approach** – The study consists of a conceptual reflection on academic and non-academic research articles that deal with forms of Generative Artificial Intelligence.

**Findings** – This work generates several findings. First, defining Generative Artificial Intelligence (Gen-AI) in innovation, is a complicated task, one that has to rely on multiple disciplines that construe similar terms and concepts in a different way. As such, our definition is one that considers innovation outcomes such as product, process, and business model innovation, as they represent the most relevant outcomes of innovation in the business and management literature dealing with AI (Mariani, 2020; Mariani et al., 2022, 2023). Second, such a definition has to take into account: (1) the macro environment including the political, economic, social, technological, ecological and legal environment; (2) the industry encompassing organizations/firms, their suppliers, customers, competitors, complementors and potential entrants. This implies that different levels of analysis should be adopted: the macro level (e.g., technological environment), meso level (e.g., technological resources, capabilities, culture at the firm level) and micro level (e.g., individual consumers' and users' attitudes and preferences). Third, when conceptualizing the relationship between Gen-AI and innovation management, an established reference framework helping to identify benefits and critical challenges of Generative AI for innovation management is missing. Fourth, as Gen-AI will originally complement (instead of replacing) human-led innovation in line with the idea of augmented intelligence (La Roche, 2017), important issues to address are: (1) how humans – be them innovation managers, customers and new product testers – and Gen-AI will interact for product, process, and business model innovation; (2) if and how new products/services and processes generated by AI will be patented; (3) if and how intellectual property generated by AI will be protected; (4) who will retain intellectual property for new business ideas, patents, as well new products and processes stemming from Gen-AI; (5) if and how innovation managers will make sure that the use of Gen-AI will be ethical and moral given the ongoing relevant debate around the morality of AI (Floridi & Sanders, 2004); (6) who will

control if new products/services and processes stemming from Gen-AI are authentic, do not infringe others' IP and comply with laws and regulations; (7) if and to what extent Gen-AI brings about incremental rather than radical innovation; (8) how long it will take for Gen-AI to lead to breakthrough innovation; (9) how shall business models be modified to support Gen-AI; (10) how organization boundaries should be modified to accommodate Gen-AI; (11) if a Gen-AI department or office should be created along the R&D one.

**Research limitations/implications** – This work critically discusses academic and non-academic research on generative AI thus contributing to the nascent debate revolving around AI in innovation management (Cockburn et al., 2019; Mariani, 2020; Mariani *et al*., 2022). Policy and managerial implications for innovation managers and entrepreneurs are put forward. Some of them enrich recent empirical and anecdotal evidence on the use of AI for tasks such as writing articles (GPT-3, 2020; Floridi & Chiriatti, 2020), developing deepfakes (Floridi, 2021) and developing a range of other "new" products (Marr, 2022; Sparkes, 2022).

Our conceptual development seems to suggest that Gen-AI can at best help innovation managers to: (1) identify the best among different solutions to a customer problem; (2) identify the best among different customer problems. However, and consistently with extant critical perspectives on AI vs. intelligence (Floridi, 2017), Gen-AI's ability to solve problems in the innovation domain more effectively than humans should not be confused with intelligent ways through which Gen-AI, by itself, can generate new products/services and processes.

**Originality/value** – This study contributes to define and conceptualize Generative Artificial Intelligence (Gen-AI) in relation to innovation management and discusses its conceptual developments in management research. It also sketches research propositions that contribute to build a promising research agenda.

*Keywords: generative Artificial Intelligence; generativity; innovation management.*

# REFERENCES

Cockburn, I. M., Henderson, R. and Stern, S. (2019), "The impact of artificial intelligence on innovation: An exploratory analysis". In Agrawal, A., Gans, J. and Goldfarb, A. (Eds.), The economics of artificial intelligence: An agenda, University of Chicago Press, Chicago, IL, pp. 115-146.
Floridi, L. (2021), "Artificial Intelligence, Deepfakes and a Future of Ectypes", in Ethics, Governance, and Policies in Artificial Intelligence, Springer, Cham, pp. 307-312.
Floridi, L. and Chiriatti, M. (2020), "GPT-3: Its nature, scope, limits, and consequences", Minds and Machines, Vol. 30 No. 4, pp. 681-694.
Floridi, L. (2017), "Digital's cleaving power and its consequences", Philosophy & Technology, Vol. 30 No. 2, pp. 123–129.
Floridi, L. and Sanders, J.W. (2004), "On the morality of artificial agents", Minds and machines, Vol. 14 No. 3, pp. 349-379.
GPT-3 (2020), "A robot wrote this entire article. Are you scared yet, human?", available at:

https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3 (Accessed 23 October 2020).

Mariani, M.M., Machado, I. and Nambisan, S. (2023), "Types of innovation and artificial intelligence: A systematic quantitative literature review and research agenda", Journal of Business Research, Vol. 155, 113364.

Mariani, M. M., Machado, I., Magrelli, V. and Dwivedi, Y. K. (2022), "Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions", Technovation, 102623.

Mariani, M. M. (2020), "Generative Artificial Intelligence in business and management: conceptual foundations, opportunities, challenges, and developments", working paper, Henley Business School, University of Reading, Reading, UK, 25 October.

Marr, B. (2022), "Synthetic Video And The Future Of Deep Fakes For Business", available at: https://www.forbes.com/sites/bernardmarr/2022/02/25/synthetic-video-and-the-future-of-deep-fakes-for-business/?sh=5af8c670e747 (accessed 21 April 2022).

Raisch, S. and Krakowski, S. (2021), "Artificial intelligence and management: The automation–augmentation paradox", Academy of Management Review, Vol. 46 No. 1, pp.192-210.

Sparkes, M. (2022), "Meta is using AI to create low-carbon concrete for its data centres", available at: https://www.newscientist.com/article/2317122-meta-is-using-ai-to-create-low-carbon-concrete-for-its-data-centres/  (accessed 27 April 2022).

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Cockburn, I. M., Henderson, R. and Stern, S. (2019), "The impact of artificial intelligence on innovation: An exploratory analysis". In Agrawal, A., Gans, J. and Goldfarb, A. (Eds.), The economics of artificial intelligence: An agenda, University of Chicago Press, Chicago, IL, pp. 115-146.
Floridi, L. (2021), "Artificial Intelligence, Deepfakes and a Future of Ectypes", in Ethics, Governance, and Policies in Artificial Intelligence, Springer, Cham, pp. 307-312.
Floridi, L. and Chiriatti, M. (2020), "GPT-3: Its nature, scope, limits, and consequences", Minds and Machines, Vol. 30 No. 4, pp. 681-694.
Floridi, L. (2017), "Digital's cleaving power and its consequences", Philosophy & Technology, Vol. 30 No. 2, pp. 123–129.
Floridi, L. and Sanders, J.W. (2004), "On the morality of artificial agents", Minds and machines, Vol. 14 No. 3, pp. 349-379.
GPT-3 (2020), "A robot wrote this entire article. Are you scared yet, human?", available at:

https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3
(Accessed 23 October 2020).

La Roche, J. (2017). IBM's Rometty: The skills gap for tech jobs is "the essence of divide." Yahoo Finance.
https://finance.yahoo.com/news/ibms-rometty-skills-gap-tech-jobs-essence-divide-175847484.html.        Accessed
September 23, 2022.

Mariani, M.M., Machado, I. and Nambisan, S. (2023), "Types of innovation and artificial intelligence: A systematic
quantitative literature review and research agenda", Journal of Business Research, Vol. 155, 113364.

Mariani, M. M., Machado, I., Magrelli, V. and Dwivedi, Y. K. (2022), "Artificial intelligence in innovation research:
A systematic review, conceptual framework, and future research directions", Technovation, 102623.

Mariani, M. M. (2020), "Generative Artificial Intelligence in business and management: conceptual foundations,
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Marr, B. (2022), "Synthetic Video And The Future Of Deep Fakes For Business", available at:
https://www.forbes.com/sites/bernardmarr/2022/02/25/synthetic-video-and-the-future-of-deep-fakes-for-
business/?sh=5af8c670e747 (accessed 21 April 2022).

Raisch, S. and Krakowski, S. (2021), "Artificial intelligence and management: The automation–augmentation
paradox", Academy of Management Review, Vol. 46 No. 1, pp.192-210.

Sparkes, M. (2022), "Meta is using AI to create low-carbon concrete for its data centres", available at:
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# TERRITORIAL GOVERNANCE, VALUE CREATION, AND LOCAL DEVELOPMENT. THE CASE OF THE PROTECTION CONSORTIA IN THE ITALIAN WINE SECTOR: AN ANALYSIS ACCORDING TO THE SITUATIONIST VIEW OF THE ORGANIZATIONS (SVO)

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## ABSTRACT

The Italian industrial system is based on small and medium-sized enterprises and on family business model. The structural and cultural characteristics of this model, as highlighted by the wide economic and managerial literature, have been correlated with a series of weaknesses that hinder companies in seizing the emerging national and international growth opportunities.

These weaknesses act both in the perspective of the development of the single firm and when the different lenses of the development of a certain territory are adopted. Concerning these issues, the management literature widely shows an approach of mutual dependence, sometimes virtuous, sometimes vicious, between development-decline of a firm and development-decline of a territory. The theory describes a co-evolutionary process in which firms and territories mutually are presented as resources one for the competitiveness of the other (Valdani and Ancarani, 2000). There is also a strong convergence on thinking that the sources of competitiveness and value creation, both for firms and for territories, are progressively and irreversibly shifted from tangible to intangible factors. The concepts of 'territorial vocation' and 'territorial governance' are focal in the literature of territorial marketing and local development (Calabrese et al., 2016). The territory, therefore, obtains and maintains a competitive advantage through the improvement of its resources and distinctive competencies. The territorial vocation, according to the Resource Based View (Wernerfelt, 1984, Barney, 1991, 2001; Grant, 1991), it is a very solid concept: unique synthesis of strategic resources of the territory. Resources that are characterized by: high value, scarceness, distinctiveness, and specific organization. The competitive advantage of the territory is sustainable if it meets the expectations of several local stakeholders (individuals and/or organizations) directly or indirectly involved into the process of value creation. The strategic plan of territorial development must be able to co-align all the forces on the basis of a shared vision for present and future identity of the territory: "*E pluribus unum, from many voices one vision*" (Schillaci and Gatti, 2011, p. 24).

This paper aims at contributing to the debate on the territorial vocation and territorial governance processes through a different lens, to understand the value creation and value distribution processes

into this field. A Situationist View of the Organizations (SVO) is adopted, and it is compared to the prevailing one, defined as 'systemic'.

In the traditional paradigm the territory is represented as a System. Inside two main strands can be found: on the one hand, the territorial governance looks like the work of a 'board of designers' capable of correctly interpreting the 'territorial vocation' and to design a vector of rational strategies for economic, social, and cultural sustainable development. This *top-down perspective* focuses on the regulator of the territory (mono or multi-level, single or multi-agent) that plays the function of governance (Pernice, 1999) directing the actions of local actors. For example, the presence of a regulator and a central planning, carried out by public institutions or by large companies, characterizes the technology clusters in industry with high investment in research and innovation (Bottinelli, Pavione, 2010; Velo, 2011). Putting on these lenses, local development is explained as the result of rational design that begins with a clear vision of the future. The design explains everything in a formal territorial strategic development plan (or similar labels): strategic and operative goals, organizational structure (macro and micro) and processes, specific components, levels of differentiation and integration mechanisms.

On the other hand, in a *bottom-up perspective*, the territory is interpreted as a reified collective entity, with its own identity and a strategic thinking with emerging processes of self-organization and self-government in a bottom-up logic able to generate order, harmony, and integration. This *territorialist view* qualifies the territory as a living system, which identity is built around a specific "consciousness of place". The territory "*is not the geographical space (…) but a highly complex living system, the result of co-evolutionary processes between human settlement (organized on a cultural basis) and the environment (organized on a geological and biological basis)*" (Magnaghi, 2006, p. 1). The territory, through homeostatic processes of self-regulation, evolves without converging towards a state of complete order and, at the same time, not rushing towards disorder and chaos. In both these perspectives the territory is pre-determined with respect to the local actors and coalitions. In this epistemological framework, the 'territorial vocation' appears as an objective character, self-evident, expression and synthesis of the potential of resources, skills, and capabilities of a territory, resulting from its past and constraints for its future, to be implemented in a sort of implicit and always winning strategy of differentiation in the competition between territories.

Moving away from the two systemic views mentioned above, in a 'situationist' view territory is a concrete system built by the actors. This different paradigm, a synthesis between the political (Crozier and Friedberg, 1977; Pfeffer, 1981; Friedberg, 1994) and the neo-institutional (Meyer and Rowan, 1977; Zucker, 1977; DiMaggio and Powell, 1983; Greenwood et al., 2008) perspective, qualifies the territory as a space of games, a place of different interests and different strategies, a place of interaction, negotiation

and conflict among actors and their coalitions. SVO is focused on the continuous work of two processes: action and institutionalization, that build, break, and rebuild social reality (Mastroberardino and Calabrese, 2022). Through this point of view some topics – institutional processes, coalitional games, power dynamics, and institutional logics (Beckert, 1999; Thornton and Ocasio, 1999, 2008; Furnari, 2014; Adler, 2021; Christmann et al., 2020; Chatzichristos and Nagopoulos, 2021) – suggest different considerations about the processes of governance and power.

The territorial vocation becomes a rationalized myth, an intersubjective construct not assisted by an aura of objectivity and functionality to the interests of the territory. It is the result, influenced by unintended effects, of the strategic action of a pro-tempore dominant coalition. Through these lenses, the territorial vocation is thus interpreted as a pressure, as a material and symbolic constraint that induces beliefs, practices, and patterns of behaviour in the actors of that territory. In some cases, this pressure could suggest to the actors to adopt a decoupling strategy (Jain, 2017; García-Sánchez et al., 2021) in their conduct. Similarly, the territorial governance becomes a result of a power game based on continuous individual and coalitional strategies. The situationist perspective into the territorial governance processes is far from simplistic predictive models. It also debunks models of strategic management and place marketing and proposes the winding road of exploration of the strategies - cooperative and conflictual - enacted by actors and / or local coalitions to pursue their interests. Consequently, local development cannot be explained (in an ex-ante perspective) neither in a bottom-up nor in a top-down logic. Instead, it can be understood concretely in an ex-post perspective. It is not the effect of a specific cause; it does not arise from regulations and cannot be planned in a general and abstract way. On the contrary, it is the effect – only partly intentional – of a negotiation process between actors with different (and often divergent) interests, who operate strategically to obtain resources asymmetrically, within the limits set for them, pro tempore, by a certain institutional framework.

From an empirical point of view, the paper focuses on the Italian wine sector and analyzes the case of protection consortia regulated by art. 41 of the Law no. 238 of 2016 (TESTO UNICO DEL VINO ITALIANO). As per the methodological aspect, for the case of protection consortia, this first work has the main objective of reconstructing the pro tempore institutional framework and for this purpose we are mainly using documentary sources. Particularly, attention is first focused on the institutional characteristics of these territorial governance organizations, as required by current legislation. Subsequently, some specific territorial experiences are explored.

*Keywords: territorial vocation, territorial governance, action, institutionalization, power, coalition, institutional logics, Situationist View of the Organizations (SVO), wine business, Protection Consortium.*

## REFERENCES

Adler, L. (2021), "Framing disruption: How a regulatory capture frame legitimized the deregulation of Boston's ride-for-hire industry", Socio-Economic Review, Vol. 19, n. 4.

Barney, J.B. (1991), "Firm Resources and Sustained Competitive Advantage", Journal of Management, vol. 17, n. 1.

Barney, J.B. (2001), "Resource-Based Theories of Competitive Advantage: A Ten Year Retrospective on the Resource-Based View", Journal of Management, vol. 27, n. 6.

Beckert, J. (1999), "Agency, entrepreneurs, and institutional change. The role of strategic choice and institutionalized practices in organizations", Organization Studies, Vol. 20, N. 5.

Bottinelli, L. and Pavione, E. (2010), Distretti industriali e cluster tecnologici: strategie emergenti di valorizzazione della ricerca e dell'innovazione, Giuffré, Milano.

Calabrese, G., Cortese, F., Mastroberardino, P. (2016), "Cultural Heritage, Development, Employment: Territorial Vocation as a Rationalized Myth", in Alvarez M.D., Go F.M. and Yüksel A. (Eds.), Heritage Tourism Destinations: Preservation, Communication and Development, pp. 122-142, CABI (Centre for Agriculture and Biosciences International), Wallingford.

Christmann, G.B., Ibert, O., Jessen, J. and Walther, U.J. (2020), "Innovations in spatial planning as a social process –phases, actors, conflicts", European Planning Studies, Vol. 28, N. 3.

Chatzichristos, G. and Nagopoulos, N. (2021), "Social entrepreneurs as institutional entrepreneurs: evidence from a comparative case study", Social Enterprise Journal, Vol. 17, N. 4.

Crozier, M. and Friedberg, E. (1978), Attore sociale e sistema, Etas Libri, Milano.

DiMaggio P.J. and Powell W.W., (1983), "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields", in W.W. Powell, P.J. and DiMaggio (Eds.), (1991), The New Institutionalism in Organizational Analysis, The University of Chicago Press, Chicago.

Friedberg, E. (1994), Il potere e la regola. Dinamiche dell'azione organizzata, Etas Libri, Milano.

Furnari, S. (2014), "Interstitial spaces: microinteraction settings and the genesis of new practices between institutional fields", Academy of Management Review, Vol. 39, N. 4.

García-Sánchez, I.M., Hussain, N., Khan, S.A. and Martínez-Ferrero, J. (2021), "Do Markets Punish or Reward Corporate Social Responsibility Decoupling?", Business & Society, vol. 60, n. 6.

Grant, R.M. (1991), "The Resource-Based Theory of Competitive Advantage", California Management Review, vol. 3, n. 33.

Greenwood, R., Oliver, C., Suddaby, R. and Sahlin, K. (Eds), (2008), The SAGE Handbook of Organizational Institutionalism, Sage Publications Ltd, London.

Jain, T. (2017), "Decoupling Corporate Social Orientations: A Cross-National Analysis", Business & Society, vol. 56, n. 7.

Magnaghi, A. (2006), "Il territorio come soggetto di sviluppo delle società locali", Lo sviluppo in questione: le forme umane della trasformazione, Falconara Marittima, pp. 1-13.

Mastroberardino, P. and Calabrese, G. (2022), Comprendere l'impresa. Per una teoria della pratica manageriale, Seconda Edizione, McGraw-Hill, Milano.

Meyer, J.W. and Rowan, B. (1977), "Institutionalized Organizations: Formal Structure as Myth and Ceremony", in W.W. Powell and P.J. DiMaggio (Eds.) (1991), The New Institutionalism in Organizational Analysis, The University of Chicago Press, Chicago.

Pernice, I. (1999), "Multilivel Constitutionalism and the Treaty of Amsterdam: European Constitution Making Revisited", Common Market Law Review, n. 36.

Pfeffer, J. (1981), Power in organizations, Ballinger Publishing Company, Cambridge.

Rullani, E. (1999), "L'impresa e il suo territorio: strategie di globalizzazione e radicamento territoriale", Sinergie, 49, pp. 25-31.

Schillaci, C.E., Gatti, C. (2011), "E pluribus unum: intenzionalità collettiva e governo dei sistemi territoriali", Sinergie, n. 84.

Shilo, H., Voronov, M. and Hinings, C.R. (2013), "Putting new wine in old bottles: utilizing rhetorical history to overcome stigma associated with a previously dominant logic", Research in the Sociology of Organizations, vol. 39B.

Thornton, P.H. and Ocasio, W. (1999), "Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958-1990", American Journal of Sociology, Vol. 105, n. 3.

Thornton, P.H. and Ocasio, W. (2008). "Institutional Logics", in Greenwood, R., Oliver, C., Sahlin, K. and Suddaby, R. (eds), The SAGE Handbook of Organizational Institutionalism, Sage Publications, London.

Valdani, E. and Ancarani, F. (Eds.), (2000), Strategie di marketing del territorio. Generare valore per le imprese e i territori nell'economia della conoscenza, Egea Editore, Milano.

Velo, D. (2011), "La varietà dei sistemi locali per l'innovazione emergenti in Europa", Sinergie, n. 84.

Zucker, L.G. (1977), "The Role of Institutionalization in Cultural Persistence", in W.W. Powell and P.J. DiMaggio (Eds.), (1991), The New Institutionalism in Organizational Analysis, The University of Chicago Press, Chicago.

# CURRENT STATUS OF METAVERSE RESEARCH

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## ABSTRACT

## RESEARCH GAP AND STUDY AIM

Green cosmetics are becoming increasingly popular among consumers and their market it is expected to reach a value of $ 54.5 billion in 2027 (Sadiq et al., 2021), thanks to the growing consumers' interest towards healthy and environmentally friendly products (Mansoor et al., 2022; Kumar et al., 2021). However, despite this growing interest, most consumers continue to prefer conventional cosmetics, in fact, green cosmetics, according to the latest available data, accounted for only 15% of the overall cosmetic market value (Sadiq et al., 2021). To date, it is not clear why there is this discrepancy between growing interest and low market share. It is assumed that there are several inhibitors that work as a deterrent to the purchase of green cosmetics. Previous studies on consumers' intention to purchase green cosmetics have mainly focused on facilitators of the decision-making process, while little is known about the barriers (inhibitors) that inhibit the intention to purchase green cosmetics (Sadiq et al., 2021). Therefore, this study aims to bridge this gap, trying to better explain the factors affecting purchase intention towards green cosmetics of a probabilistic sample of Italian consumers. To reach this aim the stimulus-organism-response (SOR) paradigm was chosen as a theoretical framework (Mehrabian and Russell, 1974). The SOR paradigm allows us to understand the interconnection among environmental stimuli (S), such as health consciousness and environmental concern and the organism (O), consisting of a set of facilitators (attitudes and social norms) and a set of inhibitors (value and risk barriers). Finally, the influence of both facilitators and inhibitors on the purchase intention (R) has been evaluated, also considering the product knowledge as potential moderator for the proposed associations.

## MATERIALS AND METHODS

Data were collected by a professional marketing agency through an online survey conducted in Italy in October 2022 on a probabilistic sample of 1008 Italian consumers of cosmetics. The mean age of respondents is 49.72 (SD= 15.25) years and 76% are female. To analyse and verify the relationships proposed in the conceptual model, the partial least square-structural equation modelling (PLS-SEM) method has been adopted (Hair et al., 2019). To measure the constructs, the following pre-validated

scales have been utilized: health consciousness with nine-item scale from Gould (1988); environmental concern with six-item scale from Knight (2008); attitudes and social norms with five-item and three-item scales both from Ghazali et al. (2017); value barrier with three-item scale from Sadiq et al. (2021); risk barrier with three-item scale from Sadiq et al. (2021) and Tandon et al. (2021). Each utilized item has been measured on a 5-point Likert scale ranging from 'Totally disagree' to 'Totally agree'. Finally, purchase intention has been generated with the respondents' probability to buy a green cosmetic in the future, resulting in a score ranging from zero to ten.

## RESULTS AND DISCUSSION

As regards the measurement model, all values of composite reliability (CR), rho_A and Cronbach's alpha ($\alpha$) are above 0.7 values showing a constructs' reliability, while items with weak factor loadings have been eliminated (Hair et al., 2019). Moreover, since the average variance extraction (AVE) is over the threshold value of 0.5, and square root of each construct's AVE is greater than the inter-structural correlation, the convergent and discriminant validity of model are confirmed (Hair et al., 2019). Finally, since all constructs have a variance inflation factor (VIF) value below 3.3 there is no critical level of multicollinearity concern as well as the Harman one-factor test has shown the absence of a common bias (Gallagher et al., 2022). The results of structural model show that external stimuli positively influence attitudes and above all social norms, highlighting that health and environment are key stimuli for consumers of green cosmetics (Kumar et al., 2021; Ghazali et al., 2017). Surprisingly, a greater healthy and environmentally awareness negatively affects value barrier, while risk barrier is weakly influenced only by environmental concern. This is because the more consumers are aware, the more they have no doubts about the real benefits of green cosmetics compared to conventional ones, because they most likely have more knowledge of the product (Kumar et al., 2021a). However, value barrier has the stronger inhibitory force on purchase intention than risk barrier, highlighting that firstly consumers are aware that in the current market there are several not clear products and, subsequently they do not recognize a price premium for these products that are considered also greenwashed (Sadiq et al., 2021). Conversely, findings show that even if both facilitators are two important drivers in decision-making process of green cosmetics (Ali et al., 2022), consumers attribute increasingly importance to other people choices rather than their individual feelings (Mansoor et al., 2022). Finally, results show that product knowledge moderates the relationships between social norms, value barrier and purchase intention, confirming that it plays a key role in green cosmetic consumers (Ghazali et al., 2017).

## CONCLUSIONS

The establishment of a specific regulation framework could increase purchase intention towards green cosmetics especially in less healthy and environmental conscious consumers, reducing their confusion and perceiving them as added value products. In this context, since the product knowledge moderates effects of the most significant facilitators and inhibitors (i.e., social norms and value barrier), it appears evident that the adoption of effective firms' advertisements involving celebrities or influencers as well as specific education campaigns could improve purchase intention towards these more sustainable products.

*Keywords: Metaverse; Systematic Literature Review; Bibliometric Analysis*

## REFERENCES

Ali, S., Usama Javed, H.M., Ali, W. and Zahid, H. (2022), "Decoding men's behavioral responses toward green cosmetics: an investigation based on the belief decomposition approach", Journal of Environmental Planning and Management, 1-28.

Gallagher, R., Raimondo, M. and Caracciolo, F. (2022), "Eating the "inedible": How to improve the consumption of the perceived inedible parts of fruits and vegetables in Ireland and Italy?", Food Quality and Preference, 99, 104548.

Ghazali, E., Soon, P.C., Mutum, D.S. and Nguyen, B. (2017), "Health and cosmetics: Investigating consumers' values for buying organic personal care products", Journal of Retailing and Consumer Services, 39, 154-163.

Gould, S.J. (1988), "Consumer attitudes toward health and health care: a differential perspective", J. Consum. Aff. Vol. 22 No. 1, pp. 96–118.

Hair, J. F., Risher, J. J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", European Business Review, Vol. 31 No. 1, pp. 2–24.

Knight, A. J. (2008). "Bats, snakes and spiders, Oh my! How aesthetic and negativistic attitudes, and other concepts predict support for species protection". Journal of Environmental Psychology, Vol. 28 No. 1, pp. 94-103.

Kumar, S., Dhir, A., Talwar, S., Chakraborty, D. and Kaur, P. (2021), "What drives brand love for natural products? The moderating role of household size", Journal of Retailing and Consumer Services, 58, 102329.

Mansoor, M., Saeed, A., Rustandi Kartawinata, B. and Naqi Khan, M.K. (2022), "Derivers of green buying behavior for organic skincare products through an interplay of green brand evaluation and green advertisement", Journal of Global Fashion Marketing, Vol. 13 No. 4, pp. 328-343.

Mehrabian, A. and Russell, J.A. (1974), An Approach to Environmental Psychology, The MIT Press.

Sadiq, M., Adil, M. and Paul, J. (2021), "An innovation resistance theory perspective on purchase of eco-friendly cosmetics", Journal of Retailing and Consumer Services, 59, 102369.

Tandon, A., Jabeen, F., Talwar, S., Sakashita, M. and Dhir, A. (2021), "Facilitators and inhibitors of organic food buying behavior", Food Quality and Preference, 88, 104077.

# INTEGRATED QUALITY MANAGEMENT FOR HEALTH

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## ABSTRACT

A new concept of *integrated quality management* is introduced by the present paper to provide innovative tools for upgrading standards based on improvement recommendations from evaluated services and processes to increase administrative and medical competencies, efficiency, quality and profits, for all operational actors involved in the medical activities, at all levels.

## INTRODUCTION

In the modern society dominated by artificial intelligence hefting more the credits than resiliency, quality dwells as the main constant of sustainable development. Applied to each cell of the logistics chain in the health system, it defines competences, establishes correspondences between the route and the considered destination [Mihoreanu. 2020a]. In this way, the activity of each operator metamorphoses and identifies with the real needs, within the legislative framework, only when specific regulations of the field are considered and, above all, with the intention of using each resource according to the purposes proposed [Mihoreanu. 2020b]. Therefore the reformed quality concept is analysed in its entirety and represents the 'suitability of appropriate use' and the real value generated by spending a certain amount of resources, permanently, to satisfy all the needs of the medical, administrative and human logistics chain involved in each specific process.

## THEORETHICAL BACKGROUND

In the current conjuncture, when the patient is at the centre of involvement, more and more disharmonies and imbalances come to the surface, accentuated by political, social and economic distortions:

- cascading consequences of systemic crises through which the dynamics of societal evolution are reformulated - (economy, environment, health and care, institutions and operators (including patients);

- misunderstanding of society principles and its correct mechanisms for development and implicitly, the waste of funds and resources through their improper use;

- shortage in satisfaction at all levels and an obvious waste of resources;

- absence of involvement and assumed responsibility of both operators and patients;

- existence of a uni-vector quality management system that does not take into account the nonconformities of the blockchain management;

- carrying out activities based on archaic standards and/or evaluations built inaccurately on criteria that do not respect either the needs or the true possibilities [Mihoreanu. 2020b].

In the central and local public health administration, the notion of quality refers passively only to products, equipment, investments and institutional units past activities keeping the patient, alone in the core of a static system. Thus, it ignore, knowingly, the dynamics influence of each systemic component, including that of relationships developed between establishments and patients, between medical and social policies inside the consolidated human system (the entire operational flow (non)medical, administrative and of patients together with its members), between the material, operational and human resources, between the educational policy and the administrative-medical policy [Mihoreanu, 2022]. The approach of the present paper brings to light here, for the first time, the hidden opportunities for to be used to: increase efficiency and profit, improve activities through qualitative relations, augment satisfaction and avoid the waste of funds, no matter their provenience.


## METHODOLOGY

Starting from a) Deming's methodology of universal improvement by reducing the differences between customer requirements and performance [Deming 1950] and b) in the absence of a systematic methodology for understanding satisfaction, the current research explains, on the basis of statistical data reported by the public institutions of health of Romania (taken randomly and anonymously on outpatient clinics, hospital units and, respectively, non/medical staffs and patients) and elucidates the relationship between costs, time and the level of satisfaction as a continuous feedback monitoring vector setting forth to creating a new indicator (*integrated quality management*) on the basis of which the evaluation should emphasise the dynamics of both components of • the total quality standards and • their impact on the health system. As the actual quality management current reports are in a high need for improvement in the field of the medical administration considering their inaccuracy, incompleteness and deficiency, their distortion, recurrence and archaic approach, they easily lead to major mistakes in interpretation and use of all resources [Kainer *et al*, 2022].

The data obtained through the current research show the possibility of filling the performance space [Pruitt, 2020; Mihoreanu *et al*, 2015] and complete satisfaction of needs through investigation-acceptance-assurance-standardized control-evaluation through permanent monitoring, through the continuous use of information generated by the processes of updating the standards used, of the

appropriate evaluation of all operational subsystems and accepting criticism through the internal improvement of all processes and flows.

## ORIGINAL RESULTS

The novelty of the work consists in the introduction of a new concept of *integrated quality management* in the context of the sustained erosion of the health system in almost every country in the world [Mihoreanu, 2019 a, b]. The integrated quality analysis must be made aware and assumed responsibility, starting from the correct definition and the extended logistic institutionalization of the institution-patient binomial as the core, so that the monitoring control of behaviours and their effects generates rapid operational and flow corrections taking into account a continuous process of feed-backs monitoring and their evaluations.

*Keywords: innovation, quality, management, health and care sector, performance, process.*

## REFERENCES

Deming, W.E. 1950. Elementary Principles of the Statistical Control of Quality, JUSE

Hartmut, K; Linke, K; Omondi, S & Schwendener, T. 2022. Quality Management quo Vadis: A Snapshot of the German Quality Management Environment International, Journal of Management Science and Business Administration, vol. 8, no. 6, Sept. 2022, pp 44-53 DOI: 10.18775/ijmsba.1849-5664-5419.2014.86.1005URL: https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.86.1005.

Mihoreanu, L. 2020a. Empowering the Health Care Reform, Ed PRO Universitaria, Bucharest, ISBN: 978-606-26-1183-5, http://www.prouniversitaria.ro/carte/empowering-the-health-care-reform.

Mihoreanu, L. 2020b. The Medical Clinic of Proximity: Business Controversies and Medical Challenges. In: Thrassou A. Vrontis D. Weber Y. Shams S.M.R. Tsoukatos E. (Eds) The Changing Role of SMEs in Global Business. Palgrave Studies in Cross-disciplinary Business Research in association with EuroMed Academy of Business. Palgrave Macmillan. Cham. https://doi.org/10.1007/978-3-030-45831-7_3. https://link.springer.com/chapter/10.1007/978-3-030-45831-7_3. DOI: 10.1007/978-3-030-45831-7_3.

Mihoreanu, L. 2022. How technologies assessment conceptualization and their certification can help the medical business boosting performances in Alkis Thrassou; Demetris Vrontis; Leonidas Efthymiou, Yaakov Weber, S.M.Riad Shams & Evangelos Tsoukatos (eds). 2022. Business Advancement through Technology. Published by Palgrave Macmillan pp:.181-200.

Mihoreanu, L. 2019a. A Retrospective and Prospective Analysis in the Health Management Through Applied Innovation. in Weber. Y. Vrontis. D. Tsoukatos. E.& Shams. S.M.R. (Eds). The Cross-Disciplinary Perspectives of Management: Challenges and Opportunities Cross-Disciplinary Management Perspectives. Emerald Publishing Limited. Bingley. pp. 181-202. https://doi.org/10.1108/978-1-83867-249-220191014.

Mihoreanu, L. 2019b. The Innovative Partnering – The Key for a Healthy Society in S.M.Riad Shams. Demetris Vrontis & Yaakov Weber. Evangelos Tsoukatos. Antonino Galati (Eds). 2019. Stakeholder Engagement and Sustainability. The Annals of Business Research Routledge Taylor & Francis Group Vol.3. https://www.taylorfrancis.com/books/e/9780429265518/chapters/10.4324/9780429265518-12.

Mihoreanu, L.; Pamfilie, R. & Angheluta A.C. 2015. Engineering an Innovative Management System: Accomplishments and Challenges in D.Vrontis. E.Tsoukatos. A.Maissa (Eds). Innovative Management Perspectives on Confronting Contemporary Challenges. Cambridge Press London. pp: 82-101. ISBN:1-4438-7245-8 13: 978-1-4438-7245-4. https://books.google.ro/books?id=-prWCgAAQBAJ&pg=PA82&lpg=PA82&dq=Engineering+an+Innovative+Management+System:+Accomplishments+and+Challenges%E2%80%9C&source=bl&ots=36g_WP2rJL&sig=ACfU3U1N0mS6OuQBs7apSg_uj8iLTb4T7w&hl=en&sa=X&ved=2ahUKEwjQotbghpb2AhVBQvEDHXOLCiUQ6AF6BAglEAM#v=onepage&q=Engineering%20

an%20Innovative%20Management%20System%3A%20Accomplishments%20and%20Challenges%E2%80%9C&f=f
alse.

Pruitt, Zachary, Smith, Candace S & Pérez-Ruberté, Eddie. 2020. Healthcare Quality Management A Case Study Approach. ISBN: 978-0-8261-4513-0 (Print). 978-0-8261-4514-7. (eBook). DOI: 10.1891/9780826145147. Springer.

# SUSTAINABILITY AS AN ATTRIBUTE OF HOTEL CHOICE

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## ABSTRACT

## INTRODUCTION

The attention on sustainability has been increasingly influencing the development of the tourism sector and of the destination competitiveness (Bohdanowicz, 2005). Especially the hospitality industry has generally a heavy and negative economic, environmental, and socio-cultural impact on the destination (e.g. consumption of energy, water, food) (Crouch, 2007; Mazanec et al. 2007; Font and McCabe, 2017). For these reasons hotels have to face hard pressure by international and national stakeholders (Dasanayaka et al. 2022; Buffa et al. 2015). From the one hand, new regulations (e.g. waste management) affect daily procedures and operations. On the other hand, a growing segment of customers is willing to pay a premium price to stay in a "green hotel" (Chang et al., 2015). Therefore, it is really important for hotels to understand how sustainability is perceived by customers and its role as a hotel attribute during the hotel choice process. The paper examines the importance of sustainability as an attribute that determines the hotel choice. The paper wants to contribute to existent literature about sustainability in hospitality, investigating the concept of sustainability as multidimensional (environmental, economic and social). Therefore, the study has the purpose to investigate the importance that hotel consumers give to sustainable practices among other hotel attributes, considering the various dimensions. Moreover, the study analyses the motivations and factors that influence guests' hotel choice (Xu and Gursoy, 2015; Han, 2021; Gerdt et al., 2019).

The research questions the study investigates could be summarized as follows: RQ1: Which is the importance of sustainability for hotel guests among various hotel attributes? RQ2: Which are the most important dimensions of sustainability (environmental, economic, and social) for hotel guests?

## THE ATTRIBUTES OF HOTEL CHOICE AND SUSTAINABILITY

The attributes that lead travellers to choose one hotel over others was a topic already studied in previous literature. Dolnicar and Otter (2003) found that cleanliness and location were the most important attributes for travellers. Other studies pointed out that price (Ananth et al., 1992; Lockyer, 2005) and value of money (Caber and Albayrak, 2014) were important features considered during the hotel choice. Most recent studies underline the importance of natural environment and sustainability practices in determining hotels choice (Bohdanowicz 2005; Lee et al. 2010; Han et al. 2011; Millar and

Baloglu 2011). The study of Verma and Chandra (2018) reveals the prominent role of sustainability practices followed by price, location, value for money, brand awareness and food & service quality. In this case the concept of sustainability is strongly associated with energy conservation practices, recycling and greenscaping. Indeed, previous literature considers the concept of sustainability mainly for the environmental dimension (Franco et al. 2021). However, it is impossible to analyse the relationship between tourism and sustainability without considering the social and economic dimensions (Tölkes, 2018, Franco et. al. 2021), for example local products and craft, tangible and intangible attractions (Noonan and Rizzo, 2017).

## RESEARCH METHODOLOGY

An exploratory survey was conducted to reply to RQs. Data for the study were collected in the period November 2019-January 2022 through self-administered questionnaires. The questionnaire is divided in 3 parts. The first part investigates socio-demographic features of respondents (i.e., age, gender, profession). The second part concerns some behavioural variables (i.e., the purchase channels, the frequency of bookings, the reasons for travel). The third part of the questionnaire analyses the attributes used by travellers for hotel selection. A special focus is given to examine the importance travellers assign to sustainability (in all its dimensions) and the expectations about sustainable practices adopted by hotels. The hotel attributes were identified based on a review of relevant literature illustrated in the previous paragraph and adapted for the purpose of the study. The questionnaire was initially tested and after minor reviews it was delivered online to more than 1.100 travellers. For data analysis, both descriptive and inferential statistics techniques were used. Descriptive statistics were used to summarize and describe the main features of the dataset, while inferential statistics were used to make inferences and draw conclusions about the population based on the sample data. One specific inferential statistical technique that was utilized is the Mann-Whitney U test (for further details see Hart, 2001).

## RESULTS AND DISCUSSION

The sample is composed by 676 women, 407 men and 13 respondents who did not declare their gender. Furthermore, 43% of the sample declared to have a job and 42% to be a student. Considering the rest of the respondents, it is made up of retirees and people without a job. Focusing on instruction, 234 respondents declared that they have a university degree and 683 a high school diploma. Focusing on age and generation, 42% of the respondents belong to Generation Z, 25% to Generation Y and the rest to previous generations. The following analysis are based on a self-evaluation based on the concept of "being a sustainable tourist" and, considering the propensity for sustainability, using this data, gender

and educational level are not relevant variables. To frame any differences between the choices of accommodation between the two categories of respondents, it is important to verify that there are no significant differences in the choice of accommodation facility (as in Figure 1). In fact, the two groups select hospitality structures for their holiday with very similar percentages.

Figure 1 Accommodation Choice
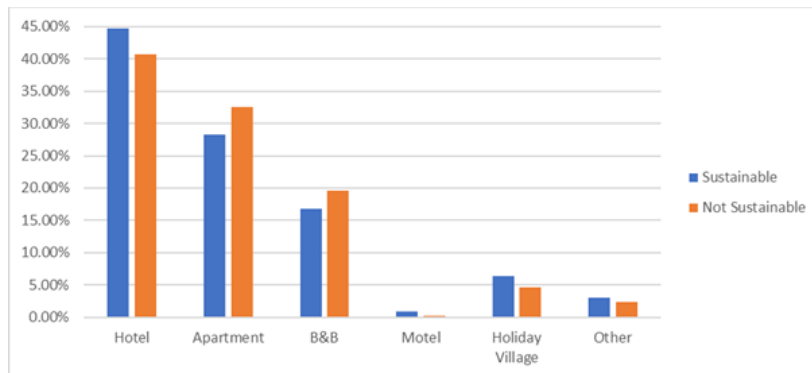


Considering hotel attributes the travellers take into account during the hotel choice, from Figure 2 emerges that the two groups have similar ranks but, considering the assigned evaluation (Likert from 1 to 7), there are several distances between sustainable tourists and not sustainable tourists, especially in the context of the sustainable activities promoted by the hotel. These results confirm previous studies that stated that cleanliness, price and location are the most important attributes for hotel guests (Ananth et al., 1992; Lockyer, 2005; Dolnicar and Otter, 2003). The role of sustainability is not considered one of the top attribute also by tourists that affirm to be "sustainable" (RQ1). Finally, the analysis provided to answer on RQ2, are based on a Mann–Whitney U test and the 3 dimensions of sustainability were compared. The three tests carried out for the three dimensions of sustainability are statistically significant (P-Value <0.001) and, consequently, it is possible to state that the perception of the three dimensions of sustainability is very different among the two categories of respondents (i.e. The greatest significance is for the environmental dimension). Therefore, environmental dimension is confirmed to be the most considered by sustainable tourists. Concluding, the future analysis will try to understand the distances, in terms of sustainability, between the two categories of tourists.

Figure 2 Ranking according to the self-evaluation "being a sustainable tourist" (Yes/No)
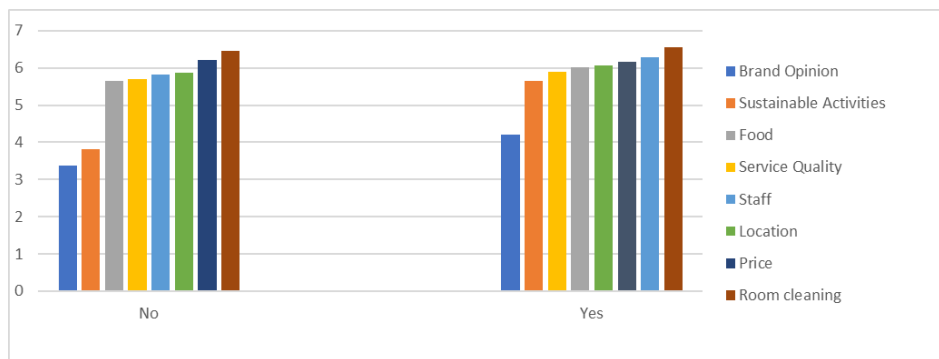


## THEORETICAL AND MANAGERIAL IMPLICATIONS

The present study offers a theorical contribution to existing literature about sustainability and tourism considering the concept of sustainability as multidimensional (environmental, social and economic dimensions). Moreover, the study enriches the literature about the attributes that influence customers' hotel choice with a particular focus on sustainability affecting consumer behaviour. At the same time, the findings offer interesting managerial implications for hotel managers to develop innovative strategies and business models in order to minimize their negative impacts and to satisfy the customers' needs. A deep knowledge about customers' preferences becomes crucial in determining corporate strategies. The studies demonstrate the importance of some more traditional attributes (price, location) but underlines the increasing importance of sustainability, in all its dimensions. Therefore, hotels should consider how sustainability influences guests' choices in defining their management and communication strategies. The study offers interesting insight also for the other stakeholder of the destination (transportation, attractions, restaurants, etc.), being tourism an overall and integrated experience that involve all the services of a destination.

## LIMITATIONS AND FURTHER DEVELOPMENTS

The present study presents some limitations. First, the concept of sustainability is complex with different interpretations. Second the analysis is focused on the hotel business. For the future the study could be extended from the point of view of the respondents (more categories of tourists) and from the point of view of the sectors analysed (i.e., restaurants, transportation, and attractions). A new survey's wave could offer data to compare three different periods: pre-Covid 19, the pandemic period, post-Covid 19. The comparison of data from different periods could provide valuable insights into the changes in consumer behavior and attitudes towards sustainability in the wake of the pandemic.

*Keywords: Sustainability, hotel attributes, hotel choice, services, hospitality, tourism*

# REFERENCES

Ananth, M., DeMicco, F.J., Moreo, P.J., and Howey, R.M. (1992), "Marketplace lodging needs of mature travelers", The Cornell Hotel and Restaurant Administration Quarterly Vol.33 No.4, pp. 12–24.

Bohdanowicz, P. (2005), "European hoteliers' environmental attitudes. Greening the Business", Cornell Hotel Restaurant and Administration Quarterly, vol. 46 No.2, pp. 188-204.

Buffa, F., Franch, M., Martini, U., and Tamanini, A. (2018), "Hotel Profiles Based on Environmental Management Practices: Evidence from a Study at an Alpine Destination", Sustainability, vol. 10 No. 12, p. 4531.

Caber, M., and Albayrak, T. (2014), "Does the importance of hotel attributes differ for senior tourists? A comparison of three markets", International Journal of Contemporary Hospitality Management, Vol. 26 No. 4, pp. 610–628.

Chang L.H., Hsiao Y.C., Nuryyev G., and Huang M.L. (2015), "People's motivation, constraints and willingness to pay for green hotels", European Journal of Tourism Research, Vol. 9, pp. 67-7.

Crouch, G.I. (2007), "Modelling destination competitiveness: A survey and analysis of the impact of competitiveness", Report of the Cooperative Research, Centre for Sustainable Tourism.

Dolnicar, S. & Otter, T. (2003), Which hotel attributes matter? A review of previous and a framework for future research, In: Proceedings of the 9th Annual Conference of the Asia Pacific Tourism Association (APTA), (pp. 176–188).

Font X., Mccabe S. (2017), "Sustainability and marketing in tourism: its contexts, paradoxes, approaches, challenges and potential", Journal of Sustainable Tourism, vol. 25, n. 7, pp. 869-883.

Franco, S., Caroli, M., & Del Chiappa, G. (2021), "The impact of hotel sustainability practices on tourist intentions to book hotel rooms", Sinergie Italian Journal of Management, Vol. 39 No. 1, pp. 21-35.

Gerdt, S. O., Wagner, E., & Schewe, G. (2019), "The relationship between sustainability and customer satisfaction in hospitality: An explorative investigation using eWOM as a data source", Tourism Management, Vol. 74, pp. 155-172.

Han, H. (2021), "Consumer behavior and environmental sustainability in tourism and hospitality: A review of theories, concepts, and latest research", Journal of Sustainable Tourism, Vol. 29, n. 7, pp. 1021-1042.

Han, H., Hsu, L. T. J., Lee, J. S., and Sheu, C. (2011), "Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions", International Journal of Hospitality Management, Vol. 30 No. 2, pp. 345–355.

Hart, A. (2001). "Mann-Whitney test is not just a test of medians: differences in spread can be important", Bmj, Vol. 323, No. 7309, pp. 391-393.

Lee, J., Hsu, L., Han, H., and Kim, Y. (2010), "Understanding how customers view green hotels: How a hotel's green image can influence behavioral intentions", Journal of Sustainable Tourism, Vol. 18 No. 7, pp. 901–914.

Lockyer, T. (2005). The perceived importance of price as one hotel selection dimension. Tourism Management, 26, 529–537.

Mazanec, J.A., Woeber, K., Zins, A.H. (2007), "Tourism destination competitiveness: From definition to explanation?", Journal of Travel Research, vol. 46, n. 1, pp. 86-95.

Millar, M., and Baloglu, S. (2011), "Hotel guests' preferences for green guest room attributes", Cornell Hospitality Quarterly, Vol. 52, pp. 302–311.

Noonan, D. S., and Rizzo, I. (2017). "Economics of cultural tourism: issues and perspectives", Journal of Cultural Economics, Vol. 41, pp. 95-107.

Tölkes, C. (2018). "Sustainability communication in tourism–A literature review", Tourism Management Perspectives, Vol. 27, pp. 10-21.

Verma, V.K., and Chandra, B. (2018), "Sustainability and customers' hotel choice behavior: A choice-based conjoint analysis approach", Environment, development and sustainability, Vol. 20, pp. 1347-1363.

Xu, X., & Gursoy, D. (2015), "Influence of sustainable hospitality supply chain management on customers' attitudes and behaviors", International journal of hospitality management, Vol. 49, pp. 105-116.

# DECENT WORK IN AGRICULTURE: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

## 1. INTRODUCTION

Promoting decent work is a key element in achieving fair globalization and sustainable development. Within the 2030 Agenda, the social dimension of sustainability finds a place across several goals, but most closely coherently in SDG 8, aimed at "*achieving full and productive employment and decent work for all women and men*". Over the last few decades numerous literature reviews have been published in the field of agricultural labor markets (Jansen, 2000; Kissi and Herzig, 2020; Lerche, 2007; Rye and Scott, 2018) that, as in Malanski and colleagues (2022) have highlighted the main areas of research, such as labor governance in agri-food value chains through standards, gender issues, employment dynamics and impact on socioeconomic conditions in rural areas, and labor and upgrading in global agri-food value chains. However, what does not find enough space in these studies is a specific focus on issues of forced and precarious work. Thus, referring to the broad meaning of decent work as defined by the ILO (2008), the aim of the present study is to explore current research trends in agricultural labor economics with a focus on precarious, forced, informal labor of agricultural workers and the phenomena of exploitation and caporalato (or gangmastering) in order to gather knowledge on how scholars have addressed the questions of labor market in the agricultural sector to study the causes and magnitude of the phenomenon, and to search for analytical tools capable of analysing strategies to contrast it.

## 2. METHODS

This study performs a systematic literature review according to the PRISMA guideline (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). An important step is to precisely define the topic under investigation to identify, as the quality of a systematic review will depend on how effectively and in an unbiased manner it focuses on published evidence on a topic (Linnenluecke et al., 2020). Due to its relevance (Caracciolo et al., 2013), the AGROVOC Thesaurus was used to identify keywords in order to search for synonyms of decent work, informal, agriculture and supply chain. Two widely employed digital databases, like Scopus and Web of Science, were identified and used to select appropriate studies based on the keywords described in Table 1. The search for documents in the aforementioned databases was conducted on March 31, 2023, so, the

search range includes all articles published up to this date. To achieve the aim of this study, in the first step of screening, only articles and reviews published in peer-reviewed journals were considered. In addition, papers that were not in English were excluded. In the second stage, the off-topic articles were excluded as described in Figure 2. At the end of the screening process, the database consisted of 367 documents. Prior to content analysis, the study develops a descriptive analysis of bibliographic data regarding the most cited authors and papers, the journals and countries of publication, and the distribution of papers over the years.

Subsequently, content analysis develops a data collected classification by analysing each full text according to the following criteria: kind of study (empirical or theoretical); research instruments (case studies, survey research, mathematical modelling, literature review); geographic characteristics of the study (scale, country, continent), and others eventually rising during the literature review.

**Table 1**

| Database | Search string | Numbers of articles | Total relevant |
|---|---|---|---|
| Scopus | ( TITLE-ABS-KEY ( "forced labour" ) OR TITLE-ABS-KEY ( "forced labor" ) OR TITLE-ABS-KEY ( caporalato ) OR TITLE-ABS-KEY ( gangmaste* ) OR TITLE-ABS-KEY ( "labour exploitation" ) OR TITLE-ABS-KEY ( "labor exploitation" ) OR TITLE-ABS-KEY ( "migrant labour" ) OR TITLE-ABS-KEY ( "migrant labor" ) OR TITLE-ABS-KEY ( "modern slavery" ) OR TITLE-ABS-KEY ( "unfree labor" ) OR TITLE-ABS-KEY ( "unfree labour" ) OR TITLE-ABS-KEY ( "informal labor" ) OR TITLE-ABS-KEY ( "informal labour" ) OR TITLE-ABS-KEY ( "precarious work" ) OR TITLE-ABS-KEY ( "SDG 8" ) OR TITLE-ABS-KEY ( "decent work" ) AND TITLE-ABS-KEY ( "supply chain" ) OR TITLE-ABS-KEY ( agri* ) ) | 933 | 174 |
| Web of Science | ALL=(("forced labour" OR "forced labor" OR "modern slavery" OR "unfree labour" OR "unfree labor" OR "informal labour" OR "informal labor" OR "precarious work" OR "decent work" OR "SDG 8" OR caporalato OR gangmaste* OR "labour exploitation" OR "labor exploitation" OR "migrant labour" OR "migrant labor") AND (farm OR "supply chain" OR agri*)) | 832 | 193 |

**Figure 2**



Identification

Query delimitation:
– Keywords identification AGROVOC Thesaurus ('decent work' + 'gangmaster' + 'informal labour' + 'agriculture')
– Language: English
– Publication type: articles, reviews
Records identified from:
– Web of Science (n = 832)
– Scopus (n =933)
Total (n = 1766)

Screening

Duplicate records removed:
(n = 480)

Records excluded according to the document criteria:
(n = 351)

Removed by language criterion:
(n =116)
Removed by publication type criterion:
(n =235)

Records removed due to off topic papers:
(n =568)

Historical, geographical, anthropological papers; documents related to migration studies, law, labor productivity; labour exploitation in not-agriculture fields.

Analysis

Records selected to the bibliometric analysis:
(n =367)

## 3. EXPECTED RESULTS

Given the large sample size, it will be possible to differentiate the topics. The study aims to offer a description of the methodologies adopted in research to analyse the different topics included in this review, summarizing their pros and cons.

In studying decent work, a description of the analytical tools used to quantify the phenomenon of forced labor and evaluate the counteracting strategies promoted at the enterprise and supply chain management levels will be offered.

About informal labor, given its nature and the difficulty of monitoring such a phenomenon, assessment methodologies currently employed to quantify the phenomenon will be researched.

*Keywords: precarious work; forced labour; SDG 8; informal economy; caporalato; gangmastering; systematic review; bibliometric analysis;*

# REFERENCES

Caracciolo, C., Stellato, A., Morshed, A., Johannsen, G., Rajbhandari, S., Jaques, Y., Keizer, J., 2013. The AGROVOC Linked Dataset. Semant Web 4, 341–348. https://doi.org/10.3233/SW-130106

ILO, 2008. Toolkit for Mainstreaming Employment and Decent Work: Country Level Application. ILO, Geneva.

Jansen, K., 2000. Labour, Livelihoods and the Quality of Life in Organic Agriculture in Europe. Biological Agriculture & Horticulture 17, 247–278. https://doi.org/10.1080/01448765.2000.9754845

Kissi, E.A., Herzig, C., 2020. Methodologies and Perspectives in Research on Labour Relations in Global Agricultural Production Networks: A Review. J Dev Stud 56, 1615–1637. https://doi.org/10.1080/00220388.2019.1696956

Lerche, J., 2007. A Global Alliance against Forced Labour? Unfree Labour, Neo-Liberal Globalization and the International Labour Organization. Journal of Agrarian Change 7, 425–452. https://doi.org/10.1111/j.1471-0366.2007.00152.x

Linnenluecke, M.K., Marrone, M., Singh, A.K., 2020. Conducting systematic literature reviews and bibliometric analyses. Australian Journal of Management 45, 175–194. https://doi.org/10.1177/0312896219877678

Malanski, P.D., Schiavi, S.M. de A., Dedieu, B., Damansceno, J.C., 2022. International research on labor in agri-food value chains: A bibliometric review from web of science. Front Sustain Food Syst 6. https://doi.org/10.3389/fsufs.2022.852178

Rye, J.F., Scott, S., 2018. International Labour Migration and Food Production in Rural Europe: A Review of the Evidence. Sociol Ruralis 58, 928–952. https://doi.org/10.1111/soru.12208

# IS EUROPEAN UNION CONVERGING ON ALL FRONTS? EVIDENCE FROM THE SHADOW ECONOMY IN AGRICULTURE

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## ABSTRACT

## INTRODUCTION

No unified approach for measuring informal economy within the EU exists. Such a situation precludes further research into this direction, as not having a unified methodological approach for measuring the level of informal economy within the EU, no meaningful comparisons between the countries' performance in eradicating informality in agriculture can be conducted. The inability to compare states' performance in tackling the informal economy within the EU Member States hinders the dissemination of the best practices (as there is no possibility to judge, if these practices are really working) among the EU Member States, impedes the construction of a unified EU policy aimed towards tackling of the informal economy in its constituent Member States (Williams & Horodnic, 2018). One of the CAP goals is the promotion of convergence within the EU in its agriculture although there is evidence about the opposite trend in the EU (Morkunas & Volkov, 2023) To answer both these theoretically and practically important questions we address to structural equation modelling technique and propose a new MIMIC model, which allows to derive plausible and comparable results for 24 EU Member States. Later we investigate the existence of sigma convergence within the EU-24 agriculture.

## LITERATURE REVIEW

*Convergence process in EU agriculture*

The convergence process in agriculture is ongoing in a whole World, and only 3 countries (Malta, Lebanon, New Zealand) show a divergent path (Gong, 2020). Europe is not an exemption and convergence in European agriculture has been observed (Hartell & Swinnen, 2017; Jankowska, 2021). It is even considered to be one of the main objectives of the whole Common Agricultural Policy (Greer, 2017). Stilianos & Alexandros (2008) found conditional and club convergence in labour productivity in EU-26 agriculture. Feher et al. (2017) show, that if maintaining the current growth rate, the development level of Eastern EuroPean agricultural sectors may not only reach the average level of Western European countries, but even catch up with such countries as France or Germany.

Hamulczuk (2015) finds a convergence in agricultural total factor productivity in all EU and in particular in its New MS. Barath and Fertho (2017) point at a very big differences in total factor productivity between Old and New EU MS, also acknowledging an ongoing convergence process in total factor productivity in EU agriculture. This is supported by Csaki & Jambor (2019) who point out at the speed at which productivity growth in Central and Eastern European Countries (CEE) helps to converge with the EU-15. Garrone et al. (2018) confirming the convergence in labour productivity in EU associate it with decoupled subsidies under the CAP. The importance of direct payments in assuring convergence in EU-28 agriculture is confirmed by Volkov et al. (2019). Ahmad et al. (2019) propose an imposed structural change process as a main determinant for convergence in EU agriculture. The presence of sigma and beta convergence in labour productivity in EU-28 agriculture was also confirmed by Golas (2019). Beta convergence in the whole EU in value added per worker in agriculture was found by Spirkova et al. (2017). Kijek et al. (2019) confirms the convergence process in agricultural sectors of all EU-25 except UK and Belgium. Some differing results were reported by Kijek et al. (2020), who investigating EU-28 agricultural sectors found a club convergence in labour productivity in agriculture among groups of EU countries with low and medium productivity, but a divergence in countries displaying high labour productivity. It is worth mentioning, that contrary to some above mentioned theoretical sprout in overall EU convergence process research which is suggesting a North-South divide in EU development, the clear East-West partition between Old and New EU MS can be drawn in researching agricultural performance indicators (Reif et al., 2018).

## MATERIALS AND METHODS

*Description of the data*

Twenty – four EU Member States, namely: Finland, Sweden, Denmark, Estonia, Latvia, Lithuania, Poland, Germany, Spain, Portugal, France, Belgium, Netherlands, Luxembourg, Austria, Italy, Greece, Slovakia, Czech Republic, Hungary, Slovenia, Cyprus, Malta and Ireland were selected for the research. We did not include United Kingdom as it is no longer part of the EU. Croatia, Bulgaria and Romania were left outside the scope of our research, because they have joined the EU relatively recently (2013 and 2007), thus the reliable and unified data for these countries exists only from their accession to the EU. As MIMIC approach requires a quite long data series to acquire robust results (Medina, L., & Schneider, 2018) we decided to limit our research to countries, which ascended to the EU in 2004 and earlier. The selected time period covers years 2004-2021, i.e. data series covers 18 years. Due to large differences in sizes of the agricultural sectors of the investigated countries (i.e. France vs Luxembourg) all data were standardized before the structural equation modelling technique – MIMIC method could be applied. Data for the research was obtained from the Eurostat (Economic Accounts

for Agriculture and National Accounts (ESA)) DB, trust in government was obtained from the OECD data and global innovation index was retrieved from the globalinnovationindex.org. Due to the fact, wat trust in government data was available only from 2010 and global innovation index only from 2007, the missing data was back extrapolated till 2004.

## RESULTS:

We report some club convergence (North European agriculture vs South European agriculture) in shadow economy in EU-24 agriculture. No expected convergence between Old and New EU MS is reported. We also find, that although shadow economy in EU agriculture tend to decrease over the researched period, it remains higher than shadow economy in the whole country in each of the EU-24 countries. We also find, that with some exemptions (Austria and Cyprus) typically shadow economy in agriculture is about 7-10 percent higher in agriculture compared to the shadow economy in the whole country during the researched period. This may by attributed not only to prevalence of seasonal workers, internal consumption, but also to part-time agriculture unpaid (family) work and even to deficiencies in tax codes in some of the EU-24 Member States.

*Keywords: shadow economy, agriculture, European Union, informal economy, sigma-convergence*

## REFERENCES

Williams, C. C., & Horodnic, A. (2018). Tackling undeclared work in the agricultural sector. European Platform Undeclared Work.

Morkunas, M., & Volkov, A. (2023). The Progress of the Development of a Climate-smart Agriculture in Europe: Is there Cohesion in the European Union?. Environmental Management, 1-17.

Gong, B. (2020). Agricultural productivity convergence in China. China Economic Review, 60, 101423.

Hartell, J. G., & Swinnen, J. F. (Eds.). (2017). Agriculture and East-West European Integration. Routledge.

Feher, A., Goșa, V., Raicov, M., Haranguș, D., & Condea, B. V. (2017). Convergence of Romanian and Europe Union agriculture–evolution and prospective assessment. Land use policy, 67, 670-678.

Hamulczuk, M. (2015). Total factor productivity convergence in the EU agriculture. Competitiveness of Agro-Food and Environmental Economy, Faculty of Agro-Food and Environmental Economics-Bucharest University of Economic Studies, Bucharest, 34-43.

Baráth, L., & Fertő, I. (2017). Productivity and convergence in European agriculture. Journal of Agricultural Economics, 68(1), 228-248.

Csaki, C., & Jambor, A. (2019). Convergence or divergence–Transition in agriculture of Central and Eastern Europe and Commonwealth of Independent States revisited. Agricultural Economics, 65(4), 160-174.

Ahmad, N., Naveed, A., & Naz, A. (2019). A hierarchical analysis of structural change and labour productivity convergence across regions, countries and industries within the EU. Labour & Industry: a journal of the social and economic relations of work, 29(2), 181-198.

Greer, A. (2017). Post-exceptional politics in agriculture: an examination of the 2013 CAP reform. Journal of European Public Policy, 24(11), 1585-1603.

# QUALITY MANAGEMENT AND CERTIFICATION SYSTEMS FOR SUSTAINABLE MARINA MANAGEMENT

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## ABSTRACT

The importance of sustainable management has increased in response to the world's environmental issues and global climate change. For sustainable development, the UN has established 17 objectives. In this context, sustainable management is critical in marinas. This demonstrates the significance of the issue on an international level. Environmental and sustainability standards draw a significant part of the quality, certification, and accreditation systems used by marinas operating in the World. From the lowest rank worker in the marina to the top manager worker units, a sustainable marina approach to management is system required. Marinas have established management practices in the technical, administrative, and social responsibility dimensions. There are sustainability criteria in all marina quality certification systems. The demand for environmentally friendly marinas is increasing all over the world. One of the primary responsibilities of marina operators is to prevent seawater pollution, air pollution, and noise pollution. Customers have a high level of environmental sensitivity. Because customer of marinas prefer environmentally friendly marinas. They are aware that they benefit from the sea and are conscious of the principles of sustainability. Marinas many yachts and provide a place to stay maintenance, repair, and other services such as painting and waste water disposal. It also harms the environment while providing these services. The most sensitive area to manage today is, of course, energy efficiency and zero carbon efficiency. The marina's liquid, solid, and gas waste management continues to be under development.  Routine activities such as boat repair and painting, engine maintenance, and fuel filling pollute the environment. Toxic wastes produced by these activities include chemical wastes, paints, petroleum, oil, and other wastes. all of this for these reasons, marinas design their quality systems with an understanding of long-term management in mind. However, there has been a need in this regard to register marinas' commitment to ecology with independent organizations. For these reasons, global certification systems have been developed. In marinas, these certification systems ensure customer satisfaction. The current research investigated to sustainable marina management practices within marina certification systems.

*Keywords:* Management , Organisation, Sustainable Management, Quality Management, Marin Tourism, Maritime, Yachting, Nautical Tourism, Marinas

# IP ATTRIBUTES OF PRIVATE ACCOMODATION DETERMINING THE ASSESSMENT OF CONSUMER (DIS)SATISFACTION

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## ABSTRACT

## BACKGROUND

Considering the number of tourists organizing their own trip and checking online reviews before buying, to properly manage the content of those reviews is essential to improve services of tourist accommodation and to obtain competitive advantage (Mariani & Borghi, 2018; Mariño-Mesías et al., 2019). Reviews became crucial for business success since rating scores and text reviews enable providers to better understand the perception of customer (dis)satisfaction and subsequently to design/improve the service (Mariño-Mesías et al., 2019).

As reviews provide information for customer decision-making and reveal what customers enjoyed the most and what they didn't like, enabling providers to increase the perceived quality from services (Schuckert et al., 2015; Ye et al., 2011), Thomsen and Jeong (2021) stated as critical an exploratory analysis using various methods to study the relationship between the experience of Airbnb guests and the themes extracted from their reviews and Li et al. (2019) pointed the lack of empirical data on measurement of Airbnb customer experience, while Ju et al. (2019) revealed there was little research on the asymmetric effect of service quality attributes over customer satisfaction.

## PURPOSE

Most of the studies focused on positive attributes as satisfaction promoters and neglected negative attributes considered as dissatisfaction promoters. Assuming the existence of asymmetric impact from service attributes on consumer (dis)satisfaction, to find out and classify attributes with positive and/or negative connotations enabled a more in-depth analysis revealing some clues about reviews leading to a better understanding on how customer (dis)satisfaction is perceived in the context of private accommodation. Thus, the objective of this study is to identify attributes determining the assessment of satisfaction and dissatisfaction of private accommodation (PA) consumers, assuming this asymmetry.

## METHODOLOGY

The detection of attributes determining consumers satisfaction/dissatisfaction was based on the rating scores and text reviews published by guests on Airbnb about PA from Porto (Portugal) through content analysis of text reviews from the highest and lowest rated reviews, supported by the QSR NVivo to identify terms and reports related to customer (dis)satisfaction under abductive approach. At the same time, a descriptive analysis and hypothesis tests (*t*-test and ANOVA) were carried out using IBM SPSS Statistics over the rating score of 229 240 Airbnb reviews. Then, each attribute was matched with rating score and text review about the presence/absence of each attribute during the service delivery considering the frequency of adjectives and adverbs used for each attribute, to check the intensity and recognise attributes with positive/negative and high/low meaning on the customer perception over service performance.

## FINDINGS

Text reviews tend to point out dissatisfaction factors through reviews rated up to 3.5 and attributes are firstly related to host followed by establishment, tourist destination, service and type of travelling, despite most text reviews are related to location and cleanliness, followed by host interaction, amenities, and most references to service attributes are firstly related to establishment, host interaction, tourist destination and the type of travelling.

The highest rated reviews reveal location (54%), cleanliness (68%) and comfort (40%), host interaction (60%), amenities (59%), city centre (52%), tourist activities and other services (64%), access and public transport (88%) as attributes determining satisfaction, while low rated text reviews point out to shared rooms (100%), extra fees (100%) and inaccessibility (75%) as attributes determining dissatisfaction, while tourist attractions are not mentioned, meaning there is no connection to the service. And the lowest rated text reviews tend to be more detailed (55%) revealing guests advise other guests for service failures, while highest rated reveal guests suggest to other guests (57%) and high rated and detailed reviews (45%) reveal guests recommend service recovery to the hosts and most of the recommendations (70%) are as advice, mostly (57%) addressed to other guests; while the vast majority (93%) of the recommendations from lower rated reviews are addressed to hosts as suggestion for service improvement.

## DISCUSSION AND IMPLICATIONS

Assuming there are attributes attracting and attributes repelling consumers with different intensity according to their presence/absence during the service delivery, working as promoters of satisfaction

(essential for consumers to be satisfied) and as inhibitors of dissatisfaction (needed for consumers not to be dissatisfied) for instance, assuming the impact of both over the consumer's perception is asymmetric ("opposite attribute" must be considered when its absence does not correspond to other's presence or when its absence may not be proportional to others' presence) to better understand the asymmetry of PA attributes the Inhibitor-Promoter of Satisfaction-Dissatisfaction (IPSI) analysis is suggested to place attributes according to each attribute score on importance and performance (Figure 1).

Figure 1: IPSI matrix

| | *Inhibitor* | | *Promoter* | |
|---|---|---|---|---|
| | **IS** | | **PS** | |
| *Satisfaction* | present | absent | absent | present |
| | -0,50 | -0,25 | 0,75 | 1 |
| *Dissatisfaction* | **II** present | absent | **PI** absent | present |
| | 0,50 | 0,25 | -0,75 | -1 |

IPSI analysis evaluates the importance for each attribute based on -1 irrelevant | -0.75 very little relevant | 0.5 little relevant | -0.25 less relevant | 0.25 more relevant | 0.50 relevant | 0.75 very relevant| 1 extremely relevant and evaluates the perceived performance for each attribute based on -1 extremely dissatisfactory | -0.75 very dissatisfactory | -0.50 dissatisfactory | -0.25 little dissatisfactory | 0.25 little satisfactory | 0.50 satisfactory | 0.75 very satisfactory | 1 extremely satisfactory, according to the presence or absence of each attribute during the service delivery.

## ACKNOWLEDGEMENTS

*Keywords: Private accommodation, Service attributes, Customer satisfaction, Online reviews, Consumer to Consumer, Airbnb, IPSI Analysis.*

## REFERENCES

Ju, Y., Back, K.-J., Choi, Y., & Lee, J.-S. (2019). Exploring Airbnb service quality attributes and their asymmetric effects on customer satisfaction. International Journal of Hospitality Management, 77, 342-352.

Li, J., Hudson, S., & So, K. K. F. (2019). Exploring the customer experience with Airbnb. International Journal of Culture, Tourism and Hospitality Research, 13(4), 410-429.

Mariani, M. M., & Borghi, M. (2018). Effects of the Booking.com rating system: Bringing hotel class into the picture. Tourism Management, 66, 47-52.

Mariño-Mesías, R., Sabrià-Bernadó, A., Fortó-Areny, J., & Dorca-Josa A. (2019). Study of Customer Satisfaction with The Hotel Sector of The Principality of Andorra Based on the Reviews on Booking. In Centre for Tourism Research, Development, and Innovation. The Image and Sustainability of Tourism Destinations (Proceedings Book). Funchal, Portugal, pp. 281-290,

Schuckert, M., Liu, X., & Law, R. (2015). Hospitality and tourism online reviews: Recent trends and future directions. Journal of Travel & Tourism Marketing, 32(5), 608-621.

Thomsen, C., & Jeong, M. (2021). An analysis of Airbnb online reviews: user experience in 16 U.S. cities. Journal of Hospitality and Tourism Technology, 12(1), 97-111.

Ye, Q., Law, R., Gu, B. & Chen, W. (2011). The influence of user-generated content on traveller behaviour: an empirical investigation on the effects of e-word-of-mouth to hotel online bookings. Computers in Human Behaviour, Vol. 27 (2), 634-639.

# AMBIDEXTROUS LEADERSHIP: ENABLING PUBLIC SECTOR MANAGERS

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## ABSTRACT

There is a growing demand for initiating structural policies aimed at streamlining the public sector and increasing its efficiency and effectiveness, the structure, size and performance (Ayubayeva et al, 2022). The public sector organisations must also adapt and become agile to cope with challenges brought by innovation to stay relevant (Notario & Couto, 2022). The public sector is thus facing with paradoxical choices of balancing exploitation and exploration activities with a focus and growing expectations on leadership to become ambidextrous. Those ambidextrous leaders are best equipped to concentrate their efforts to deal with tensions associated with different kind of strategies and innovation (Probst, Raisch, and Tushman, 2011) and drive organizations' success. To enable ambidextrous leadership, several behavioural perspectives have been highlighted in the literature, knowing that traditional leadership approaches often lack precision and action orientation (Kassotaki, 2019). One proposition is to combine the contradictory but complementing transformational and transactional leadership styles to be able to deal with exploration and exploitation activities. Another proposition emphasizes the role of the opening and closing behaviours (Rosing et al, 2011) where leaders should smoothly switch between the two behaviours to deal with the complexity and changing needs of innovation (Lien, 2020). However, dedicated studies on the role of ambidextrous leadership only surfaced in the past two decades with the rise of the concept of transformational leadership (Tushman and O'Reilly, 2016). Furthermore, this recent interest in ambidextrous leadership is scarce about how leadership support organizational ambidexterity, especially in the public sector. This lack of practical insights from empirical studies regarding the role of ambidextrous leadership is maybe one reason why few public organizations are successful in both efficiency and innovation. It should also be noted that, while ambidexterity leadership has been discussed in the context of private sector organizations, more research is needed to generalize the current findings into the unique context of public management (Kobarg, et al., 2017). The blind transfer of concepts from the private to the public sector is seen as inappropriate due to the important differences in the respective purpose and mission (Rainey, H. G., 2009). The present study has two main research questions: (a) how is ambidextrous leadership enabled in the public sector? And (b) how are particularities of the public sector affecting ambidextrous leadership? As leadership is a multi-dimensional concept, we take a holistic view and examine the different angles of leadership, including the leader (here the public leader), the follower (here employees of the public sector), the context (here the public sector) and

their dynamic interaction. Data was collected using structured survey questionnaire from a European agency of 800 employees. The results of this research reveal that both leadership styles of open and closed behaviours (Rosing et al, 2011) are present at the senior management level. Top management however mostly uses transactional leadership or close behaviour in part due to structural and environmental constraints while also limited but rising form of transformational leadership style. This study concludes that in this particular cluster of organisations of the public sector, ambidextrous leaders are primarily focused on exploitative activities, while a limited but growing amount of their time is being allocated to exploration activities. Regarding theoretical implications, this study reveals and emphasizes the ambivalent use of leadership styles by public leaders in the ambidextrous leadership theory. Furthermore, this study also contributes to the literature on ambidexterity by explaining how public leaders' ambidexterity capabilities relate to successful implementation and adaptability of governance mechanisms. In terms of managerial implication, this study highlights the crucial point for ambidextrous leaders to balance effectively antagonistic behaviours to foster innovation from followers. This is particularly challenging in the public sector as it has structural disadvantages such as multi-levels of hierarchical chain of command, is less subject to competition and possesses limited incentives to recruit innovative human capital. It also needs to react to changes of a very dynamic environment by promoting innovative work behaviour (Gökhan et al, 2022). Results also provides with practical insights on how to onboard lessons to becoming an ambidextrous leader in the public sector by for example suggesting that public leaders should develop an ambidextrous leadership style that balance both directive and participative approaches fitting to their followers' capabilities while challenging the status quo. It also    explains the potential transaction and socialising role of ambidextrous leadership in the successful implementation of governance mechanisms.

*Keywords: Leadership, Ambidexterity, Public Sector.*

## REFERENCES

Ayubayeva, S.; Tynyshbayeva, A; Kussainova, L. (2022), "Public Service Efficiency: An Innovative Method for Assessing Public Sector Reputation", Innovation Journal, Vol. 27 Issue 3, pp. 2-20.

Gökhan, A.; Luffihak, A.; Bora, Y. ; Gaye, K. (2022), « The link between ambidextrous leadership and innovative work behavior in a military organisation: the moderating role of climate for innovation", sustainability Journal, Vol. 14, Issue 15315, pp. 1-19.

Natário, M. M.; Couto, J. (2022), "Drivers, Enablers, and Conditions for Public Sector Innovation in European Countries", Innovar: Revista de ciencias administrativas y sociales. Vol. 32, Issue 83, pp. 5-16

Probst, G., Raisch, S. & Tushman, L. (2011), "Ambidextrous leadership: emerging challenges for business and HR leaders", Organizational Dynamics, pp. 326-334.

Rosing, K., Frese, M., and Bausch, A. (2011), "Explaining the heterogeneity of leadership-innovation leadership: ambidextrous leadership", The Leadership Quarterly, pp. 956-974

Windrum, P. and Kock, P. (2008), Innovation in public sector services: entrepreneurship, creativity and management, Edward Elgar, Cheltenham.

# THE ROLE OF COMMUNICATION MODES IN BUSINESS-TO-BUSINESS (B2B) RELATIONSHIPS: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

Technological advancement and the ongoing emergence of new technologies create conditions for increased interaction in technology-mediated environments (Bharadwaj and Shipley, 2020). Buyer-seller relationships are especially important in business-to-business marketing due to the nature of industrial marketing as an interactive process between buyer and seller (Ballantyne *et al.*, 2011) that leads to commitment and interdependence (Cropanzano *et al.*, 2017). Moreover, relational norms and interdependence within relationships may decrease the need for more formal and costly contractual norms to prevent losses associated with misconduct (Lambe et al., 2001). Thus, reciprocal communicative interaction is crucial in B2B relationships.

Communication is essential to create and sustain B2B relationships. Effective communication contributes to relational outcomes in B2B relationships. Here, communication mode refers to the means of interpersonal communication in B2B relationships. Choice of the communication mode could affect communication effectiveness and alter B2B relationships. Existing scholarly approaches to communication mode in the B2B context highlight face-to-face interaction as prevailing due to the small number of key customers, lengthy purchasing process, and need to provide detailed information to the customers (Setkute and Dibb, 2022). However, the development of new technologies and digital communication tools expands and transforms B2B marketing, and the increasing amount of business exchanges are carried out in a technology-mediated environment (Bharadwaj and Shipley, 2020). Furthermore, recent disruptive events in the form of compulsory social distancing measures worldwide triggered a sudden shift from face-to-face communication supported by digital to completely digital interaction in buyer-seller relationships. It remains unclear whether digital communication usage as a substitute for the face-to-face communication persists after external factors that made digital communication the only possible mode of communication (Setkute and Dibb, 2022). Thus, discrepancies between what can be observed and what the literature indicates emerged.

This paper examines the role of communication mode in the context of B2B relationships and the increasing role of technology-mediated communication to provide foundations for building research upon previous findings. The guiding research questions of the study is: *How does communication mode affect buyer-seller relationships?*

The importance of deeper scholarly investigation of communication in the B2B context became evident when disruptive changes highlighted the need to address issues that emerge. In light of this, there is a need to systematically review and assess the body of research on communication in buyer-seller relationships. A systematic literature review is conducted to analyse how the role of communication in business relationships is investigated in journals that focus on B2B marketing, paying attention to tendencies of changes in views of scholars and theoretical debate about the influence of communication mode on B2B relationships. The need to address the increasingly complex combination of technology-mediated and face-to-face interactions increases the relevance of the review and synthesis of studies focused on communication in business relationships. This literature review explores and systematizes key constructs, perspectives and empirical settings that have been studied so far on communication in dyadic B2B relationships in the leading journals in the field of B2B marketing.

The process for the present review included three stages: journal identification, article identification and article analysis. The search in ABS Academic Journal Guide list and matching with the aim and scope of journals yielded three major journals in the field of B2B marketing: *Industrial Marketing Management, Journal of Business & Industrial Marketing* and *Journal of Business-to-Business Marketing*. Screening of articles published in *Industrial Marketing Management* in 1971-2022 (since the foundation) for inclusion by reading abstracts was performed on the first round of search. This round of search yielded 904 articles. In order to pinpoint all relevant articles, studies that deal with any type of relationship and/or communication were chosen by manually reviewing every title and abstract. Afterwards, the search results were refined according to inclusion and exclusion criteria, and 52 articles were chosen for full-text review. The inclusion criteria is  communication in dyadic B2B relationships is the central issues examined in the article. As argued by Kenny *et al.* (2020), dyad is a fundamental unit of interpersonal interaction and relationships, so we suggest to consider the influence of communication mode on B2B relationships on this level. Only results in English language were included. Empirical and conceptual articles as well as literature reviews were included. The choice of *Industrial Marketing Management* as a source for sample on initial stage of work for this review is based on the results of bibliometric analysis by Kumar *et al.* (2020) that identified *Industrial Marketing Management* as the most important journal in the field of digital mediation in B2B marketing. This is a work-in-progress, and screening of *Journal of Business & Industrial Marketing* and *Journal of Business-to-Business Marketing* for relevant articles will be performed later. We proceed with content analysis of selected articles. In doing so, we have designed a coding scheme and extracted data about: definition or description of communication, theory, method, findings, suggested future research, communication modes discussed, considerations regarding communication mode and relationships, approach to face-

to-face communication compared to technology-mediated communication in relationships, keywords, variables used.

Communication between buyers and sellers increasingly occurs in technology-mediated environments (Bharadwaj and Shipley, 2020), but the research on the role of communication mode in B2B relationships is fragmented (Murphy and Sashi, 2018). The findings of this study can provide an informative framework for research on communication context of B2B relationships for academics and practitioners.

This paper contributes to relationship marketing research by tracking the changes in focus of studies on communication relationships in chronological order and understanding the influence of different technologies. Another contribution is advancing relationship marketing theory development by providing improved conceptualization of the influence of communication mode on B2B relationships by highlighting how previous literature addresses disruptive changes. This study is set out to suggest gaps in the knowledge and research agenda for communication in B2B relationships. The preliminary findings of the study confirm that different communication modes might be used in B2B relationships depending on the stage of relationships, industry, cultural differences.

This study has several limitations. First, this is a work-in-progress and further analysis may yield more coherent findings. Second, on this stage sample includes only articles published in *Industrial Marketing Management,* that could create bias by excluding certain types of studies not included in the scope of this journal. Furthermore, even though we intend to expand search to *Journal of Business & Industrial Marketing* and *Journal of Business-to-Business Marketing,* some relevant articles in other journals may be overlooked. The systematic review methodology informs the need to plan literature review and reduce flexibility to ensure rigorousness and relevance of the research.

*Keywords: communication, buyer-seller relationships, business-to-business marketing, technology-mediated environments.*

## REFERENCES

Ballantyne, D., Frow, P., Varey, R. J., & Payne, A. (2011). "Value propositions as communication practice: Taking a wider view", Industrial Marketing Management, Vol. 40, No 2, pp. 202-210.
Bharadwaj, N., & Shipley, G. M. (2020). "Salesperson communication effectiveness in a digital sales interaction", Industrial Marketing Management, Vol. 90, pp. 106-112.
Cropanzano, R., Anthony, E. L., Daniels, S. R., & Hall, A. V. (2017). "Social exchange theory: A critical review with theoretical remedies", Academy of management annals, Vol. 11, No 1, pp. 479-516.
Fraccastoro, S., Gabrielsson, M., & Pullins, E. B. (2021). "The integrated use of social media, digital, and traditional communication tools in the B2B sales process of international SMEs ", International Business Review, Vol. 30, No 4, 101776, pp. 1-15.
Kenny, D. A., Kashy, D. A., & Cook, W. L. (2020). "Dyadic data analysis", Guilford Publications, New York, NY.
Kumar, B., Sharma, A., Vatavwala, S., & Kumar, P. (2020). "Digital mediation in business-to-business marketing: A bibliometric analysis", Industrial Marketing Management, Vol. 85, pp. 126-140.

Lambe, C. J., Wittmann, C. M., & Spekman, R. E. (2001). "Social exchange theory and research on business-to-business relational exchange", Journal of business-to-business marketing, Vol. 8, No. 3, pp. 1-36.

Murphy, M., & Sashi, C. M. (2018). "Communication, interactivity, and satisfaction in B2B relationships", Industrial Marketing Management, Vol. 68, pp. 1-12.

Setkute, J., & Dibb, S. (2022). " "Old boys' club": Barriers to digital marketing in small B2B firms", Industrial Marketing Management, Vol. 102, pp. 266-279.

Tranfield, D., Denyer, D. and Smart, P. (2003). "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", British journal of management, Vol.14, No 3, pp. 207-222.

# THE ROLE OF COMMUNICATION MODES IN BUSINESS-TO-BUSINESS (B2B) RELATIONSHIPS: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

The importance of deeper scholarly investigation of communication in B2B context became evident when disruptive changes highlighted the need to address issues that emerge. In light of this, there is a need to systematically review and assess the body of research on communication in buyer-seller relationships. The systematic literature review is conducted to analyse how the role of communication in business relationships is investigated focusing on B2B marketing, paying attention to tendencies of changes in views of scholars and theoretical debate about the influence of communication mode on B2B relationships. The need to address the increasingly complex combination of technology-mediated and face-to-face interactions increases the relevance of the review and synthesis of studies focused on communication in business relationships. In this research, we argue that some areas would benefit from further research, for example, related to communication mode selection as a catalyst for changes in dyadic relationships. The guiding research question of the study is: How does the digitalization of communication mode affect buyer-seller relationships?

The process for the present review included three stages: planning, conducting, and presenting the review. In stage one, we identified the need for the review by reading the recent literature reviews related to communication in B2B relationships and indicating fragmentation in the field. We carried out a five-phase scoping review: in the first phase, we identified the major journal in the field of industrial marketing (*Industrial Marketing Management*), and in the second phase we read abstracts of all the issues published in this journal and manually extracted articles that deal with relationships and/or communication. Then we developed a review protocol with inclusion and exclusion criteria. We identified articles for the full-text review. We used the coding scheme to extract the data about the definition or description of communication, theory, method, findings, suggested future research, communication modes discussed, considerations regarding communication mode and relationships, approach to face-to-face communication compared to technology-mediated communication in relationships, keywords, variables used to identify and draw search terms to use at stage two from the keywords and content of these articles. At stage two, we conducted the review. We searched for the keywords in databases The search is limited to only journals included in the ABS list with levels 4 to 2 as well as those included in the ABDC list with levels A and B to ensure high quality. We use the Web

of Science, ProQuest, and Scopus databases to perform the search. Duplications were eliminated if the same articles were found in different databases. Then we read the abstracts of the studies that the database search yielded and selected research items for further full-text inspection. We used the coding scheme described above. Then, we categorized the papers according to the thematic topic to condense categories. At stage three, we report findings and present avenues for future research.

This paper contributes to relationship marketing research by tracking the changes in the focus of studies on communication relationships in chronological order and understanding of the influence of different technologies. Another contribution is advancing relationship marketing theory development by providing an improved conceptualization of the influence of communication mode on B2B relationships by highlighting how previous literature addresses disruptive changes. This study set out to suggest gaps and potentially fruitful research areas on communication in B2B relationships. Based on the analysis of the influence of disruptive changes, we develop a coherent agenda for future research directions. The preliminary findings of the study confirm that different communication modes might be used in B2B relationships depending on the stage of relationships, industry, and cultural differences.

*Keywords: business-to-business marketing, buyer-seller relationships, technology-mediated environments, communication.*

# CORPORATE CLIMATE CHANGE STRATEGY: A MANAGEMENT CONTROL SYSTEM PERSPECTIVE

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## ABSTRACT

Climate change is right in front of us for all the world to see, but are companies developing appropriate transition plans? Climate change is now widely recognized as one of the most urgent grand challenges with severe impacts on humanity (Waddock and Kuenkel, 2019; WEF, 2022). It has commonly been referred to as a "wicked problem" due to its complex and interconnected nature (Waddock *et al.*, 2015; Bertello *et al.*, 2022). The issue cannot be effectively solved or even diagnosed in isolation because it involves a series of interrelated problems that must be addressed together. This problem has become a non-negligible phenomenon with relevant implications for our environment, economies, and societies, making it a challenge that must be considered by all stakeholders, including businesses. The latest report of the IPCC (IPCC, 2022) points out that global anthropogenic GHG emissions in 2019 increased by 12% with respect to 2010, and were 54% higher than in 1990. Despite the urgency to take action, global GHG emissions kept growing along with investments in carbon-intensive activities, making it harder to reach the targets of the Paris Agreement. This would indeed require a rapid and transformative change of our socio-ecological system (Forliano *et al.*, 2020; Giupponi *et al.*, 2022). In this vein, companies have the responsibility to strategically run their race toward transformative systems, but still, they regard climate change mostly as a threat, while this issue is actually becoming strategic in its nature (Bresciani and Oliveira, 2007; Roman Pais Seles *et al.*, 2018). In their aim of generating long lasting value, adopting a strategy to manage sustainability and climate change is now becoming an essential element to improve company resilience (van Zanten and van Tulder, 2021; Bresciani *et al.*, 2023; Forliano *et al.*, 2023), while meeting stakeholder expectations and market requirements. To this aim, businesses can mobilize a variety of Management Control Systems (MCS) in order to promote strategic renewal and initiate organizational change while attaining a wider agenda of societal and sustainability goals  (Schneider *et al.*, 2017). In line with this, Schaltegger *et al.* (2017) suggests that the sustainability transition of organizations can be enabled by MCS.

Earlier research has already explored the emerging field of corporate responses to climate change; Kolk and Pinkse (2007) explored the relationship between key stakeholders and climate strategy; Slawinski and Bansal (2012) studied some of the company's characteristics influencing the climate strategy (like size, sector and temporal perspective); Bui (2019) took into account policies and

regulations in shaping different strategies as responses to climate change, while Bui *et al.* (2020; 2022) explored the drivers of carbon control and its moderating effect on carbon performance. However, no researchers have yet analysed the role of climate change as a key element in defining strategies, goals, operative programs and the overall corporate MCS (Glienke and Guenther, 2016).

To fill this gap, this paper performs an exploratory field study (Yin, 2017) drawing on Simons, (1995) Levers Of Control (LOC) framework, which classifies MCS in four key components: diagnostic control systems, belief systems, boundary systems, and interactive control systems. These four levers of control are functional to align organization's actions with its strategic goals, while also fostering innovation and flexibility. Past studies have already embraced Simon's framework to theorize about the integration of MCS with sustainability and environmental risks (Gond *et al.*, 2012; Journeault *et al.*, 2016; Bui and de Villiers, 2017; Semenova, 2021). While, in this paper the authors examine these aspects in the more specific context of corporate climate change management. Given this background, the aim of this paper is that of studying how and at what point control mechanisms are a reflection of the corporate climate strategy. The questions that this research wants to answer are RQ1*: How do companies translate their corporate climate strategy into formal and informal procedures?* RQ2: *At what level is the company's climate strategy embedded into the corporate Management Control System?*

For this research we collected data from three Italian companies belonging to different sectors. The three selected organizations were chosen for their experience in climate change reporting, as this helps in studying how the climate change strategy is translated into managerial and operative systems. So, semi-structured interviews were performed with key informants, which were selected through purposive sampling technique, and we picked only those organizational members involved in climate change management (e.g. CSOs, CFOs, CEOs). Interviews were then triangulated with secondary data sourced from reports, web sites and other documents, to increase the validity.

The results are based on the transcribed interviews and available documentation iteratively linking them with the existing literature. This process allowed the authors to grasp the connection between the corporate climate change strategy and the MCS in use. To achieve our aim, the data obtained from the interviews is primarily used to define if and how climate change management is part of the companies' strategy, highlighting the distinction between the various types of MCS identified by Simons (1995). Data analysis theoretically adopted the work by (Gond *et al.*, 2012) to classify each one of the interviewed organizations according to a specific configuration that explains the level of integration between the various MCS dedicated to climate change management and the overall MCS. This allowed us to illustrate the intrinsic relationship between climate change MCS and the company's strategy.

The paper has solid theoretical implications as, first of all, it contributes to the literature on MCS and strategy, shedding light on their interconnection. In particular, this study moves forward the research on company climate change management from the perspective of MCS, advancing this emerging stream. In addition to that, we consolidated the literature around Simons' LOC framework. From a practical point of view, the paper describes a field-level application of Gond et al. (2012) framework, which helps to identify possible venues of integration between the climate strategy and MCS. Further, the research displays examples of real-world case studies concerning the use of MCS to manage climate change; thus, this work represents a reference point for managers approaching the field of climate change management and might provide insights on how to structure control systems to advance business targets.

*Keywords: climate change; management control systems; levers of control; strategy*

## REFERENCES

Bertello, A., Bogers, M.L.A.M. and De Bernardi, P. (2022) 'Open innovation in the face of the COVID-19 grand challenge: insights from the Pan-European hackathon "EUvsVirus"', R&D Management, 52(2), pp. 178–192.

Bresciani, S., Rehman, S.U., Giovando, G., Alam, G. M., (2023) 'The role of environmental management accounting and environmental knowledge management practices influence on environmental performance: mediated-moderated model', Journal of Knowledge Management, 27(4), pp. 896–918.

Bresciani, S. and Oliveira, N. (2007) 'Corporate environmental strategy: a must in the new millennium', International Journal of Business Environment, 1(4), pp. 488–501.

Bui, B., Chapple, L. and Truong, T.P. (2020) 'Drivers of tight carbon control in the context of climate change regulation', Accounting and Finance, 60(1), pp. 183–226.

Bui, B. and Fowler, C.J. (2019) 'Strategic Responses to Changing Climate Change Policies: The Role Played by Carbon Accounting', Australian Accounting Review, 29(2), pp. 360–375.

Bui, B., Houqe, M.N. and Zahir-ul-Hassan, M.K. (2022) 'Moderating effect of carbon accounting systems on strategy and carbon performance: a CDP analysis', Journal of Management Control: Zeitschrift für Planung und Unternehmenssteuerung, 33(4), pp. 483–524.

Bui, B. and de Villiers, C. (2017) 'Carbon emissions management control systems: Field study evidence', Journal of Cleaner Production, 166, pp. 1283–1294.

Forliano, C., De Bernardi, P., Bertello, A., Temperini, A., (2020) 'Innovating business processes in public administrations: towards a systemic approach', Business Process Management Journal, 26(5), pp. 1203–1224.

Forliano, C. Orlandi, L. B., Zardini, A., Rossignoli, C., (2023) 'Technological orientation and organizational resilience to Covid-19: The mediating role of strategy's digital maturity', Technological Forecasting and Social Change, 188, p. 122288.

Giupponi, C. Ausseil, A. G., Balbi, S., Cian, F., Fekete, A., Gain, A., K., Essenfelder A., H., Martinez-Lopez, Mojtahed, V., J., Norf, C., Relvas, H., Villa, F., (2022) 'Integrated modelling of social-ecological systems for climate change adaptation', Socio-Environmental Systems Modelling, 3, p. 18161.

Glienke, N. and Guenther, E. (2016) 'Corporate climate change mitigation: a systematic review of the existing empirical evidence', Management Research Review.

Gond, J.P., Grubnic, S., Herzig, C., Moon, J., (2012) 'Configuring management control systems: Theorizing the integration of strategy and sustainability', Management Accounting Research, 23(3), pp. 205–223.

IPCC (2022) Summary for Policymakers: Climate Change 2022_ Impacts, Adaptation and Vulnerability_Working Group II contribution to the Sixth Assessment Report of the Intergovernamental Panel on Climate Change, Working Group II contribution to the Sixth Assessment Report of the Intergovernamental Panel on Climate Change.

Journeault, M., De Rongé, Y. and Henri, J.F. (2016) 'Levers of eco-control and competitive environmental strategy', British Accounting Review, 48(3), pp. 316–340.

Kolk, A. and Pinkse, J. (2007) 'Towards strategic stakeholder management? Integrating perspectives on sustainability challenges such as corporate responses to climate change', Corporate Governance, 7(4), pp. 370–378.

Roman Pais Seles, B.M., de Sousa Jabbour, A.B.L., Jaboour, C., J., C., Fiorini, P.C., Mohd-Yusoff, Y., Thomé, A.M.T., (2018) 'Business opportunities and challenges as the two sides of the climate change: Corporate responses and potential implications for big data management towards a low carbon society', Journal of Cleaner Production, 189, pp. 763–774.

Schaltegger, S., Etxeberria, I.Á. and Ortas, E. (2017) 'Innovating Corporate Accounting and Reporting for Sustainability – Attributes and Challenges', Sustainable Development, 25(2), pp. 113–122.

Schneider, A., Wickert, C. and Marti, E. (2017) 'Reducing Complexity by Creating Complexity: A Systems Theory Perspective on How Organizations Respond to Their Environments', Journal of Management Studies, 54(2), pp. 182–208.

Semenova, N. (2021) 'Management control systems in response to social and environmental risk in large Nordic companies', International Journal of Corporate Social Responsibility, 6(1).

Simons, R. (1995) 'Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal', Harvard Business School Press, p. 217.

Slawinski, N. and Bansal, P. (2012) 'A Matter of Time: The Temporal Perspectives of Organizational Responses to Climate Change', Organization Studies, 33(11), pp. 1537–1563.

Waddock, S., Meszoely, G., Waddell, S., Dentoni, D., (2015) 'The complexity of wicked problems in large scale change', Journal of Organizational Change Management, 28(6), pp. 993–1012.

Waddock, S. and Kuenkel, P. (2019) 'What Gives Life to Large System Change?', Organization & Environment, 33(3), pp. 342–358.

WEF (2022) The Global Risks Report 2022. 17th Edition, World Economic Forum.

Yin, R.K. (2017) Case Study Research and Applications: Design and Methods. Sage Publications.

van Zanten, J.A. and van Tulder, R. (2021) 'Improving companies' impacts on sustainable development: A nexus approach to the SDGS', Business Strategy and the Environment, 30(8), pp. 3703–3720.

# INTRA-ORGANISATIONAL COLLABORATION TO SUCCEED IN CIRCULAR TRANSITION: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

## 1. RESEARCH POSITIONING AND RESEARCH QUESTION DEVELOPMENT

In recent years, the concept of the circular economy (CE) has gained significant attention as a promising approach to address the environmental challenges associated with traditional linear production models (Bressanelli et al., 2022; Mhatre et al., 2021). A circular business is based on the establishment of a closed-loop system that minimizes resources and energy waste, maximizes resource efficiency, and promotes business sustainability (Bocken et al., 2016; Geissdoerfer et al., 2018). According to Bocken and Ritala (2021), a circular business model can be established by adopting an open or closed innovation approach, and further scientific contributions (e.g. Massaro et al., 2021; Mhatre et al., 2021) agreed that an open approach is needed to successfully achieve a renewable production model. Succeeding in a successful transition to a circular business model requires the active engagement and collaboration of various stakeholders due to the complexity of sustainable innovations (Bogers et al., 2020; Brown et al., 2019). Implementing circularity often requires fundamental changes in product design, supply chain management, and business models (De Angelis et al., 2018; Lahane et al., 2020). These changes demand specialized knowledge and competencies that may not be readily available within a single company. By collaborating with external partners, companies can tap into a broader range of expertise, resources, and perspectives. This collaboration can facilitate the development and implementation of innovative solutions that address the challenges of circularity effectively (Bocken and Ritala, 2021; Bogers et al., 2020).

While a growing number of studies recognized the importance of intra-organizational collaborations in achieving circularity, there is a limited understanding on the specific types and characteristics of collaborations that can effectively drive circular business development (Massaro et al., 2021; Mhatre et al., 2021). Thus, this systematic literature review (SLR) is based on three research questions, which have been developed according to the suggestions of Massaro et al. (2016).

RQ1: How has the literature addressed the issue of inter-organisational relationships in circular enterprises?

RQ2: How can be categorized the different inter-organizational relationships established by circular businesses?

RQ3: What are the key research gaps and potential directions for advancing this literature domain?

## 2. RESEARCH DESIGN

In response to the advanced research question, this SLR employs thematic analysis to examine the different kinds of collaboration outlined in previous studies and their potential to support circular business development. Clarivate Analytics' Web of Science and Scopus are the most used databases for literature reviews, yet the authors choose the latter since previous studies testify how Scopus has wide coverage in the business management domain (Bargoni et al., 2023). First, the authors advanced a keyword search on papers' title, abstract and keywords recurring to the following search string: ( "open*" OR "innovat*" OR "collaborat*" OR "network*" OR "r&d" OR "system*" OR "ecosystem*" ) ) AND ( ( "circular economy" OR "ce" OR "bio-economy*" OR "bio economy*" OR "circular*" ). 1.371 documents were identified, which has been further reduced by filtering for document type, research area, and language. As a result, 914 articles were assessed for eligibility. Title, abstract, and keyword of everyone have been reviewed until the authors manually selected 126 papers, to which were added 3 papers from a backward and forward search. The data extraction process outlined 129 scientific articles for being reviewed (Figure 1). Following this, the thematic analysis was conducted by thoughtfully reading each selected article and allowed the authors to outline some profiles of intra-organisational collaboration with their own characteristics.



| IDENTIFICATION | SCREENING | | | INCLUDED |
|---|---|---|---|---|
| Scopus database: 1.371 | Record assessed for eligibility 914 | Record identified from databases 126 | Record sought for retrieval 129 | Studies included in the review 129 |
| | Records removed *before screening* - Document type: article and review - Language: English - Research areas filter | Records excluded reading title and keywords, abstract, full text | Backward and forward reference searching 3 | Studies not retrieved 0 |

Figure 1 – Literary search strategy

Source: Authors' elaboration

## 3. FINDINGS

Our SLR supports how an open environment based on companies' collaboration provides circular businesses with access to diverse resources, expertise, innovation potential, and market opportunities that are crucial for overcoming the challenges associated with circular practices. Thus, companies can leverage collective intelligence and capabilities to achieve greater circularity, leading to improved environmental performance and enhanced competitiveness in the circular economy. More specifically, it has been possible to recognise three different inter-organisational collaboration forms that foster business circularity. First, we highlighted circular-oriented innovations as short terms business agreements based on a collaborative effort by two or more companies bounded together for developing a commonly employable sustainable innovation (Bogers et al., 2020; Brown et al., 2019; Brown et al., 2021). The second cluster is represented by collaborations in the form of circular supply chains. Drawing on De Angelis et al. (2018) and Lahane et al. (2020), a closed-loop supply chain can be described as a system in which products, components, or materials are recycled, reused, or remanufactured to minimize waste and maximize resource efficiency. It specifically involves the continuous flow of materials, products, and information in a closed loop, where the end-of-life products are reintroduced into the same supply chain as inputs for new products or processes (Geissdoerfer et al., 2018; Lahane et al., 2020). Third, we outlined a circular ecosystem architecture as a result of an orchestrating effort of localised actors in activating, aggregating and integrating the different suppliers of outsourced activities (Bressanelli et al., 2022; Parida et al., 2019). In the form of a long-term agreement among geographically close entities from different industries, this collaboration is based on mutual trust and commitment to sustainability aimed at building a micro renewable productions and consumption system. Industrial symbiosis falls into this category, as collaborations where "separate industries exchange materials, energy, water and/or by-products" to achieve sustainable development (Baldassarre et al., 2019; Chertow, 2007).

## 4. DISCUSSION AND IMPLICATIONS

The findings of this study will provide valuable insights for both researchers and practitioners interested in advancing circular economy practices within organizations. Consolidating and synthesizing the existing knowledge, this review contributes to a deeper understanding of the collaborative mechanisms that are crucial for driving circularity. We investigate the role of intra-organisational collaborations in supporting circular business development by analyzing different collaboration mechanisms in open environments. Additionally, it will identify potential research avenues and practical implications for organizations seeking to enhance their circular economy initiatives.

*Keywords: collaboration, ecosystem, supply chain, open innovation, strategic alliances, circular economy,*

# REFERENCES

Baldassarre, B., Schepers, M., Bocken, N., Cuppen, E., Korevaar, G. and Calabretta, G. (2019), "Industrial Symbiosis: towards a design process for eco-industrial clusters by integrating Circular Economy and Industrial Ecology perspectives", Journal of Cleaner Production, Vol. 216, pp. 446-460.

Bargoni, A., Alon, I. and Ferraris, A. (2023), "A systematic review of family business and consumer behaviour", Journal of Business Research, Vol. 158, 113698.

Bocken, N. and Ritala, P. (2021), "Six ways to build circular business models", Journal of Business Strategy, Vol. 43, No. 3, pp. 184-192.

Bocken, N.M., De Pauw, I., Bakker, C. and Van Der Grinten, B. (2016), "Product design and business model strategies for a circular economy", Journal of Industrial and Production Engineering, Vol. 33, No. 5, pp. 308-320.

Bogers, M., Chesbrough, H. and Strand, R. (2020), "Sustainable open innovation to address a grand challenge: Lessons from Carlsberg and the Green Fiber Bottle", British Food Journal, Vol. 122, No. 5, pp. 1505-1517.

Bressanelli, G., Visintin, F. and Saccani, N. (2022), "Circular Economy and the evolution of industrial districts: A supply chain perspective", International Journal of Production Economics, Vol. 243, 108348.

Brown, P., Bocken, N. and Balkenende, R. (2019), "Why do companies pursue collaborative circular oriented innovation?", Sustainability, Vol. 11, No. 3, 635.

Brown, P., Von Daniels, C., Bocken, N. M. P. and Balkenende, A. R. (2021), "A process model for collaboration in circular oriented innovation", Journal of Cleaner Production, Vol. 286, 125499.

Chertow, M. R. (2007), ""Uncovering" industrial symbiosis", Journal of industrial Ecology, Vol. 11, No. 1, pp. 11-30.

De Angelis, R., Howard, M. and Miemczyk, J. (2018), "Supply chain management and the circular economy: towards the circular supply chain", Production Planning and Control, Vol. 29, No. 6, pp. 425-437.

Geissdoerfer, M., Morioka, S.N., de Carvalho, M.M. and Evans, S., (2018), "Business models and supply chains for the circular economy", Journal of Cleaner Production, Vol. 190, pp.712-721.

Lahane, S., Kant, R. and Shankar, R. (2020), "Circular supply chain management: A state-of-art review and future opportunities", Journal of Cleaner Production, Vol. 258, 120859.

Massaro, M., Dumay, J. and Guthrie, J. (2016), "On the shoulders of giants: undertaking a structured literature review in accounting", Accounting, Auditing and Accountability Journal, Vol. 29, No. 5, pp. 767-801.

Massaro, M., Secinaro, S., Dal Mas, F., Brescia, V. and Calandra, D. (2021), "Industry 4.0 and circular economy: An exploratory analysis of academic and practitioners' perspectives", Business Strategy and the Environment, Vol. 30, No. 2, pp. 1213-1231.

Mhatre, P., Panchal, R., Singh, A. and Bibyan, S. (2021), "A systematic literature review on the circular economy initiatives in the European Union", Sustainable Production and Consumption, Vol. 26, pp. 187-202.

Parida, V., Burström, T., Visnjic, I. and Wincent, J. (2019), "Orchestrating industrial ecosystem in circular economy: A two-stage transformation model for large manufacturing companies", Journal of Business Research, Vol. 101, pp. 715-725.

# THE FORMATION OF A NEW EXPORT NETWORK: THE CASE OF LITHUANIA

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## ABSTRACT

## INTRODUCTION

This paper combines the gravity modelling and the economics of networks, and empirically analyses the formation of the export network of Lithuania. The analysis builds on a natural experiment of the collapse of a Soviet bloc when Lithuania among a number of other countries entered the international trade market. The main research questions are which factors were the most important in the spread of the extensive margin of Lithuania's export network, and how the influence of these factors changed throughout the years. Our results suggest that network effects, especially those of the distance, the economic development of the destination and the common spoken languages, are important for the development of the extensive trade margin. We also find that during the first years of opening to the foreign trade, the cultural and language factors were the most important. In the later years we see the domination of the economic factors, as well as the increase of the importance of the network effects and the clustering of the destination markets.

## LITERATURE REVIEW

This research contributes to the literature on international trade networks and empirical gravity modelling. It relates mostly to the articles of Chaney (2014), Morales et al. (2019) and Defever et al. (2015), and aims to empirically examine the importance of a wide range of direct and network effects for the development of the extensive trade margin. Network effects are the factors which condition expanding the country's export network not from the country of origin (as direct effects do), but from its current export partners. They include indirect distance, common culture, languages, trade organisations, the stock of emigrants, etc. The paper attempts to combine gravity modelling with the network formation theory and empirically analyses the extensive margin of Lithuania's export structure.

To the best of our knowledge, this is the first research to include so many network effects to the gravity model, and to examine the changes of the influence of these factors over time. Another novelty of the paper is that it focuses on the new entrance to the international trade market and tries to get as

close as possible to the origins of the formation of the export network of a country. Current empirical research (e.g. Chaney, 2014; Rauch & Trindade, 2002; Felbermayar & Kohler, 2006; etc.) is based mainly on the matured markets, engaged in the international trade for several decades or even centuries (e.g. the USA, France, China, etc.).

## METHODOLOGY

In the paper we construct a dynamic gravity model for Lithuania including many direct and network effects. Following Chaney (2014), Helpman et al. (2008) and Morales et al. (2019), the regression is estimated using Linear probability, Probit and Logit models with random effects. According to Wang & Zhao (2013) and Correia (2017), regression is also estimated using Linear probability and Logit models with fixed effects. Following Mundlak (1978), we also include a Probit model with correlated random effects.

## RESULTS AND CONCLUSIONS

We confirm that network factors are important for the development of the export network of a country, and the stock of emigrants and the ability to communicate significantly increase the chance of a country to start exporting to a new destination market. We find that, as the market develops, the importance of the economic factors grows and the importance of the direct belonging to various economic and trade unions tends to become less significant. The importance of knowing more languages and the ability to communicate directly with the trade partners is also increasingly important. Moreover, we find a strong evidence of an increase of clustering of the trading partners.

*Keywords: trade networks, network formation, extensive trade margin.*

## REFERENCES

Chaney, T. (2014), "The Network Structure of International Trade", The American Economic Review, Vol. 104, No. 11, pp. 3600–3634.
Correia, S. (2017), "Linear models with high-dimensional fixed effects: an efficient and feasible estimator", working paper, Duke University, March (2017).
Defever, F., Heid, B., & Larch, M. (2015), "Spatial exporters", Journal of International Economics, Vol. 95, No. 1, pp. 145–156.
Felbermayar, G. J., & Kohler, W. (2006), "Exploring the intensive and extensive margins of world trade", Review of World Economics, 142(4), 642–674. https://doi.org/10.1007/s10290-006-0087-3
Helpman, E., Melitz, M., & Rubinstein, Y. (2008), "Estimating trade flows: Trading partners and trading volumes", Quarterly Journal of Economics, Vol. 123, No. 2, pp. 441–487.
Morales, E., Sheu, G., & Zahler, A. (2019), "Extended gravity", Review of Economic Studies, Vol. 86, No. 6, pp. 2668–2712.
Mundlak, Y. (1978), "On the pooling of time series and cross section data", Econometrica, Vol. 46, No. 1, pp. 69–85.

Rauch, J. E., & Trindade, V. (2002), "Ethnic Chinese networks in international trade". Review of Economics and Statistics, 84(1), 116–130. https://doi.org/10.1162/003465302317331955

Wang, L., & Zhao, Y. (2013), "Does the experience facilitate entry into new export destinations?", China & World Economy, Vol. 21, No. 5, pp. 36–59.

# LEARNINGS FROM FOREST MAPPING RESEARCH: CAN WE ROADMAP A FUTURISTIC FOREST INDUSTRY?

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## ABSTRACT

## INTRODUCTION

For management planning, environmental monitoring, and at forestry authorities, maps are garnering interest in the forestry industry and academia especially in the context of climate change, loss of biodiversity, and social values of forest usage. Hence, a systematic literature review is conducted to assess the utility of forest mapping to get profound historical insights.

## METHODOLOGY

The systematic literature review process (Tranfield, Denyer, & Smart, 2003) followed in this study include three stages. Stage one includes (i) planning the review, (ii) drafting a proposal to conduct a review, and (iii) a review protocol with inclusion and exclusion criteria for studies. Stage two, the review process includes (i) identifying the existing research using the key words. The initial search in the Financial Times 50 listed journals yielded no results. Subsequently, we searched in Level 4 and Level 3 journals as per ABS Journal Ranking 2021. (ii) By scrutinizing the abstracts of the articles, 25 articles were considered, and data synthesis was done based on theoretical areas and time of publication. In stage three, the report and recommendations are prepared.

## REVIEW OF THE CURRENT CONTRIBUTIONS

Forest mapping in relation to stakeholders have been researched to some extent and they focused on the enhancing the utility of forest mapping for addressing the needs of stakeholders in forest management. The literature review proceeds in alphabetical order for some of the thematic categories which is evolved based on the review.

Ecosystem services: Stens et al. 2016 and Zhang et al. 2020 using Public Participatory Geographic Information System (PPGIS) identified differences in stakeholders' preferences for ecosystem services for effectively managing conflicts. Bour et al. 2021 showed that airborne LiDAR based post-logging height growth modeling in Canadian boreal landscape to improve ecosystem services.

Forest cover and Land use: Bont et al 2020 showed that Airborne-laser-scanning is useful in discriminating between broadleaf and conifer trees improves the accuracy of models for predicting timber volume in mixed and heterogeneously structured forests in Switzerland. Zafar et al. 2021 by integrating participatory mapping and Geographic Information System (GIS), estimated the degradation of the Chunati forest, Bangladesh and thus showed the conflicts between humans and nature. Grundel et al. 2022 explored participatory landscape resource analysis (LRA), as a tool to manage conflicting interests in Sweden.

Landscape management: Pierzchała et al. 2018 used the Simultaneous Localization and Mapping Algorithm, to generate cost-effective 3D data local maps of forests. Lidberg et al. (2020) explored AI and machine learning tools to precisely map the wet soils in Sweden so as to better plan roads buffer zones. Aguirre et al. 2022 used National Forest Inventory data of Spain for developing site quality models which can be extended to European level.

## IMPLICATIONS

This review study reveals current state of knowledge on forest mapping research concerning needs of forestry industry. We strongly opine that further in-depth analysis on this review will lead to new business models and next generation of forest maps with higher social values.

*Keywords: Forest Map, Stakeholders, Land cover, Landscape, Ecosystem services, Social values, Degradation, Air-borne scanning, AI, GIS.*

## REFERENCES

Aguirre, A., Moreno-Fernández, D., Alberdi, I., Hernández, L., Adame, P., Cañellas, I. and Montes, F., 2022. Mapping forest site quality at national level. Forest Ecology and Management, 508, p.120043.

Bont, L.G., Hill, A., Waser, L.T., Buergi, A., Ginzler, C. and Blattert, C., 2020. Airborne-laser-scanning-derived auxiliary information discriminating between broadleaf and conifer trees improves the accuracy of models for predicting timber volume in mixed and heterogeneously structured forests. Forest Ecology and Management, 459, p.117856.

Bour, B., Danneyrolles, V., Boucher, Y., Fournier, R.A. and Guindon, L., 2021. Modeling post-logging height growth of black spruce-dominated boreal forests by combining airborne LiDAR and time since harvest maps. Forest Ecology and Management, 502, p.119697.

Grundel, I., Christenson, N. and Dahlström, M., 2022. Identifying interests and values in forest areas through collaborative processes and landscape resource analysis. Forest Policy and Economics, 142, p.102801.

Lidberg, W., Nilsson, M. and Ågren, A., 2020. Using machine learning to generate high-resolution wet area maps for planning forest management: A study in a boreal forest landscape. Ambio, 49(2), pp.475-486.

Pierzchała, M., Giguère, P. and Astrup, R., 2018. Mapping forests using an unmanned ground vehicle with 3D LiDAR and graph-SLAM. Computers and Electronics in Agriculture, 145, pp.217-225.

Sténs, A., Bjärstig, T., Nordström, E.M., Sandström, C., Fries, C. and Johansson, J., 2016. In the eye of the stakeholder: The challenges of governing social forest values. Ambio, 45, pp.87-99.

Tranfield, D., Denyer, D. and Smart, P., 2003. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. British journal of management, 14(3), pp.207-222.

Wu, B. and Liu, L., 2020. Social capital for rural revitalization in China: A critical evaluation on the government's new countryside programme in Chengdu. Land Use Policy, 91, p.104268.

Zhang, W., Yu, Y., Wu, X., Pereira, P. and Borja, M.E.L., 2020. Integrating preferences and social values for ecosystem services in local ecological management: A framework applied in Xiaojiang Basin Yunnan province, China. Land Use Policy, 91, p.104339.

# PUTTING REVIEWING LENSES ON SPORTS TEAM-GROUP AND FAN-ROLE IDENTITIES: A SYSTEMATIC LITERATURE REVIEW OF FAN IDENTIFICATION RESEARCH ADOPTING SOCIAL IDENTITY AND IDENTITY THEORIES

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## ABSTRACT

The purpose of this article is addressing a Systematic Literature Review (SLR) focusing on sport fan and team identity topics in sport management and marketing scientific fields. At the theoretical level, the review will control for (a) the adoption frequencies and relative thematic focuses of the two reference theories in this specific research stream, namely Social Identity (Tajfel, 1982) and Identity Theories (Stryker, 1968). More specifically, this study aims at aggregating and reviewing (b) methodological, (c) geographical and sport-specific, (d) publishing sources and time data distributions across included articles.

Although fan and team identifications are currently considered 'hot topics' in sports management and marketing fields, to date, there does not exist any specific SLR on these subjects; current study aims at filling the gap in the research field while endorsing academic recommendations for theoretical distinction between SIT and IT parallelly with semantic clarity and methodological congruence (measurement instrument) in the research stream (Lock & Heere, 2017)

Current SLR is deemed to be developed following methodology (Snyder, 2019); process phases include (1) designing, (2) conducting, (3) analysis, (4) structuring and writing the review. Boolean research via several key-terms-based strings will be run on Web of Science, Scopus, Sport Discuss and Google Scholar bibliometric databases. Covidence software will be used to set inclusion and exclusion criteria, eliminating duplicates, reviewing title and abstract, full article, and extracting data eventually. The realization of this study will provide a first SLR on sports fan and team identification academic while following considerations for theoretical and practical appropriateness (Lock & Heere, 2017) in the specific research stream. Furthermore, this work would hold high originality given the review's focus on sport marketing and management 'hot topics'; quality assessment throughout the SLR process was guaranteed by independent work by all three reviewers.

Final output of this study can be of particular interest for scholars and academics researching in the field of sports fans' identity and identification, provided with a first SLR on the concerned subjects; furthermore, organizations, managers and practitioners might gather knowledge on current scientific

state-of-the-art as well as approaches and scales evaluating distinct fan individual role and social team

identifications.

Keywords: Systematic Literature Review, fan identity, team identification, Social Identity Theory,

Identity Theory

**REFERENCES**

Lock, D., & Heere, B. (2017). Identity crisis: A theoretical analysis of «teamidentification» research. European
Sport Management Quarterly, 17(4), 413–435. https://doi.org/10.1080/16184742.2017.1306872
Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business
Research, 104(11), 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039
Stryker, S. (1968). Identity Salience and Role Performance: The Relevance of Symbolic Interaction Theory for
Family Research. Journal of Marriage and the Family, 30(4), 558. https://doi.org/10.2307/349494
Tajfel, H. (1982). Social Psychology of Intergroup Relations. Annual Review of Psychology, 33(1), 1–39.
https://doi.org/10.1146/annurev.ps.33.020182.000245

# HEALTH LEAN MANAGEMENT TO IMPROVE PRIMARY CARE CENTRES AND AMBULATORY CARE: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

## INTRODUCTION

Globally, the healthcare sector faces several difficulties in achieving sustainable development goals and improving the performance of organizations and processes. In this regard, sustainability objectives are pursued through the ability to preserve and improve achievements acquired over time, continuously responding to the changing local and global environment, and fostering integration and collaboration among the various actors involved (Lennox et al., 2018; United Nations, 2022). Several achievements related to accessibility and appropriateness of care have been questioned in recent years due to the Covid-19 outbreak and austerity strategies adopted by healthcare organizations (Doetsch et al., 2023; United Nations, 2022). In this scenario, primary care is crucial to ensure care continuity and improve the first access to care by meeting the vast majority of patient demands. Indeed, as also emerged during the Covid-19 pandemic, it has become the focal point for ensuring high levels of quality of care, addressing issues such as equity and safety, and improving overall efficiency performance (OECD, 2020; World Health Organization, 2018; World Health Organization & United Nations Children's Fund, 2020). For this reason, it is essential to invest in primary care services that must be designed to make multidisciplinary teams work together and overcome the silos approach of a single general practitioner into a broader patient-centred care model (OECD, 2020). To achieve this goal, strengthening coordination between care providers is necessary to ensure continuity of care and consistency with specific individual needs. In this regard, it is of utmost importance to validate a primary care system that can guarantee ambulatory care in the territory. Furthermore, increasing the flow of information between care providers is needed to integrate different services effectively, as well as to use new technologies and develop medical skills (World Health Organization, 2018). Taking into account the primary care system, the adoption of Healthcare Lean Management (HLM) can make a significant contribution to pursue the integration goals and to increase the performance of care pathways (Tiso et al., 2022). HLM is a management approach that addresses a philosophy of continuous improvement to enhance the value for patients by reducing waste in care processes (Pless et al., 2017; Radnor et al., 2012) and increasing efficiency, effectiveness, and quality of care (Antony et al., 2019). In this sense, HLM can support organizations to achieve these objectives also in the ambulatory setting by supporting capacity and demand assessment (Tlapa et al., 2020). However,

there are few examples of the application of Lean methodologies outside the hospital boundaries (Akmal et al., 2020), and the literature related to the outpatient setting and primary care mainly assesses quality based on efficiency, effectiveness, and timeliness (e.g., length of stay and waiting times), without a particular emphasis on integration, safety, and patient-centeredness (Tiso et al., 2022; Tlapa et al., 2020) and on daily primary care physician activities (Hung et al., 2021). Despite its relevance, few studies have analysed HLM implementations in this field. The current study presents a systematic literature review performed to analyse the current state of the art, providing an overview of the adoption of HLM in primary care centres and ambulatory care, with particular attention to the integration between different care providers and patient-centeredness.

## METHODOLOGY

A structured literature review has been conducted to meet the research objective, following the PRISMA protocol (Liberati et al., 2009). During the search phase, the query has been designed by combining keywords about Lean Management with those related to ambulatory care and primary care centres (Table 1). The search was carried out in Scopus, Web of Science and PubMed; considering only English-language articles and reviews, 975 papers were obtained, reduced to 534 papers by eliminating duplicated papers. Then, reading the title and abstract, 347 papers were excluded and finally, after full text reading, 91 papers were obtained. Among the main exclusion criteria, care not provided in an ambulatory setting or in primary care centres, hospitalized patients, and surgical pathways were considered. A descriptive analysis has been conducted on the current database. Subsequently, a content analysis will provide a deep understanding on the following dimension: a) context (external and internal context, care setting) b) care pathway (patients, disease, care providers,) c) HLM implementation project (purpose and objectives, activities, tools and techniques, results) d) organizational aspects (actors involved, activities and practices) e) barriers f) facilitators.

| KEYWORDS | | |
|---|---|---|
| Lean Management | | Primary Care Centres and ambulatory care |
| "lean health*" OR "lean thinking" OR "lean six sigma" OR "lean principle*" OR "lean manage*" OR "lean process*" OR "lean tool*" OR "lean implementation*" OR "lean intervention*" OR "lean initiative*" OR "lean leader*" OR "lean method*" OR "lean workshop*" OR "lean strateg*" OR "lean production" OR "lean practice*" OR "lean philosophy" OR "lean operation*" OR "lean culture" OR "lean concept" OR "lean manufacturing" OR "lean organization*" OR "lean organisation*" | AND | "ambulator*" OR "health* center*" OR "health* centre*" OR "care center*" OR "care centre*" OR "medic* center*" OR "medic* centre*" OR "outpatient" OR "primary care" OR "primary health*" OR "medical home" OR "family practic*" OR "general practic*" OR "family physician*" OR "home care" OR ( "clinic" OR "clinics" AND NOT ( "inpatient" OR "surgery" OR "surgical" OR "emergency" OR "hospitalized" OR "hospitalization" OR "in-hospital" OR "in hospital" OR "resident" OR "residency" )) |

Table 1: searching keywords

In the coming months, further screening checks will be carried out comparing and discussing the evaluation conducted by the authors individually to improve the reliability of the database construction.

## PRELIMINARY RESULTS

Preliminary descriptive analysis shows that although growth is not exponential, there is an increasing number of publications in this field over time. The studies considered were conducted in 19 different countries, with clear dominance of the United States (64% of the studies). More than half of the papers are published in Q1 (27%) and Q2 (29%) journals, following the Scimago Journal Rank. The main journals' areas of interest are medicine (65%) and business management and accounting (19%). In this regard, *Quality Management in Healthcare* is characterized by the highest number of papers (9 papers). The database features 409 authors, among them *Hung, D.Y.* is associated with 7 papers, *Harrison M.I.* and *Liang S.Y.* are associated with 4 papers each.

Regarding the content analysis, this study may contribute to expand the academic knowledge about HLM implementation in the ambulatory setting and primary care centres, designing a reference framework to support the development of future applications. Indeed, although the great interest, there are very few reviews in the literature that analyse HLM implementation in this area. From a managerial point of view, benefits could be achieved fostering performance improvement and sustainability of long-term care pathways, quality of care and integration between different care providers. In a context characterized by a lack of appropriate and individualized care, this study may contribute to the creation of guidelines to support the management of primary care centres, optimizing the use of available resources and improving the quality of care provided.

## ACKNOWLEDGEMENTS

*Keywords: Lean Management, Lean Healthcare, Care Sustainability, Ambulatory Care, Outpatient Care, Primary Care Centres*

# REFERENCES

Akmal, A., Greatbanks, R., & Foote, J. (2020). Lean thinking in healthcare – Findings from a systematic literature network and bibliometric analysis. In Health Policy (Vol. 124, Issue 6, pp. 615–627). Elsevier Ireland Ltd. https://doi.org/10.1016/j.healthpol.2020.04.008

Antony, J., Sunder M, V., Sreedharan, R., Chakraborty, A., & Gunasekaran, A. (2019). A systematic review of Lean in healthcare: a global prospective. In International Journal of Quality and Reliability Management (Vol. 36, Issue 8, pp. 1370–1391). Emerald Group Publishing Ltd. https://doi.org/10.1108/IJQRM-12-2018-0346

Doetsch, J. N., Schlösser, C., Barros, H., Shaw, D., Krafft, T., & Pilot, E. (2023). A scoping review on the impact of austerity on healthcare access in the European Union: rethinking austerity for the most vulnerable. International Journal for Equity in Health, 22(1), 3. https://doi.org/10.1186/s12939-022-01806-1

Hung, D. Y., Mujal, G., Jin, A., & Liang, S. Y. (2021). Road to Better Work-Life Balance? Lean Redesigns and Daily Work Time among Primary Care Physicians. Journal of General Internal Medicine, 37(10). https://doi.org/10.1007/s11606-021-07178-6

Lennox, L., Maher, L., & Reed, J. (2018). Navigating the sustainability landscape: A systematic review of sustainability approaches in healthcare. In Implementation Science (Vol. 13, Issue 1). https://doi.org/10.1186/s13012-017-0707-4

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. In PLoS Medicine (Vol. 6, Issue 7). https://doi.org/10.1371/journal.pmed.1000100

OECD. (2020). Realising the Potential of Primary Health Care. OECD. https://doi.org/10.1787/a92adee4-en

Pless, S., Van Hootegem, G., & Dessers, E. (2017). Making care organizations great again? A comparison of Care Pathways, Lean Thinking, Relational Coordination, and Modern Sociotechnical Design. INTERNATIONAL JOURNAL OF CARE COORDINATION, 20(3, SI), 64–75. https://doi.org/10.1177/2053434517725529

Radnor, Z. J., Holweg, M., & Waring, J. (2012). Lean in healthcare: The unfilled promise? Social Science and Medicine, 74(3). https://doi.org/10.1016/j.socscimed.2011.02.011

Tiso, A., Pozzan, C., & Verbano, C. (2022). Health lean management implementation in local health networks: A systematic literature review. In Operations Research Perspectives (Vol. 9). Elsevier Ltd. https://doi.org/10.1016/j.orp.2022.100256

Tlapa, D., Zepeda-Lugo, C. A., Tortorella, G. L., Baez-Lopez, Y. A., Limon-Romero, J., Alvarado-Iniesta, A., & Rodriguez-Borbon, M. I. (2020). Effects of Lean Healthcare on Patient Flow: A Systematic Review. In Value in Health (Vol. 23, Issue 2). https://doi.org/10.1016/j.jval.2019.11.002

United Nations. (2022). The sustainable development goals report 2022. United Nations Publication Issued by the Department of Economic and Social Affairs (2022). https://doi.org/10.18356/9789210018098

World Health Organization. (2018). Continuity and coordination of care: a practice brief to support implementation of the WHO Framework on integrated people-centred health services.

World Health Organization, & United Nations Children's Fund. (2020). Operational framework for primary health care: transforming vision into action.

# THE IMPACTS OF PRICE INCREASE, PRICE INCREASE JUSTIFICATION AND EXPECTED FUTURE PRICE ON PRICE AFFECT, PRICE FAIRNESS, AND CONSUMERS' INTENTIONS

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## ABSTRACT

When consumers face an increased price, they make cognitive efforts such as comparing the price with current and/or expected future price of comparable products in order to reach a judgment about justness of the price, which is called price fairness (Kulkarni, 2011; Xia et al., 2004). Prior studies indicated that perceiving a price evokes affective responses in consumers that influence information comprehension, cognitive processes, and consumer intentions and behavior (Adaval & Galli, 2022; Adaval & Monroe, 2002; Xia et al., 2004). It has been indicated that price affect significantly influences consumer intentions and behavioral responses such as purchase intention and repurchase rate (Bagozzi et al., 2016). The question noteworthy to be examined is that how different justifications for price increase influence price fairness, which helps managers to decide whether price increase reason should be communicated with consumers and if yes then how (Chen et al., 2018). Furthermore, the magnitude of price and price increase are of chief factors in shaping price affect and price fairness (Allender et al., 2021; Chen et al., 2020; Konuk, 2019). Inflation expectations and expected future price also affect price fairness and might influence price affect (Kuester et al., 2015). When the difference between a current price and the expected future price is significant, reference prices of consumers move toward the expected future price (Kulkarni, 2011; Xia et al., 2004). This type of forward-looking evaluation of price impacts consumer's price fairness, purchase intentions, and behavioral responses (Kuester et al., 2015).

The research problem of this study is that how price increase justification, price increase, and expected future price influence price fairness and price affect perceptions of consumers with different levels of product involvement and how consumer's intentions including purchase intention, intention to complain, and intention to spread negative word-of-mouth are affected consequently. The main aims of this study are: (a) investigating the effects of different price increases and different justification for price increase on price fairness and price affect, (b) examining whether firms should communicate the demand-based motives behind a price increase or not addressing any reason at all, (c) studying the moderating role of product involvement between price increase and price fairness and also between price increase and price affect, (d) evaluating if consumers perceived in control cost-based justification for price increases different than out-of-control cost justification, (e) assessing the moderating role of

expected future price between price and price fairness and between price and price affect, (f) exploring the effects of price fairness on purchase intention, intention to complain, and intention to spread negative word of mouth, and (g) evaluating the effects of price affect on purchase intention, intention to complain, and intention to spread negative word of mouth.

This research investigates the interplay of price increase justification, price increase, and expected future price influence price fairness and price affect perceptions on purchase intention, intention to complain, and intention to spread negative word-of-mouth by considering product involvement of the customers. This research study aims to explore and explain the impact of different price increases and justifications for those increases on perceptions of fairness and price affect, whether companies should explain the reasoning behind a price increase or not, how a person's level of interest in a product may affect their perceptions of fairness and emotional response to a price change, how people may react differently to justifications for a price increase that are within a company's control versus those that are not, the impact of people's expectations for future prices on their perceptions of fairness to price increase, how perceptions of price fairness may influence a person's likelihood to purchase a product, complain, or spread negatively words about the product to others, and how price affect to a price increase may influence a person's likelihood to purchase a product, intention to complain, or intention to spread negative word-of-mouth. In order to conduct the study, a fractional factorial design with eight scenarios were used to survey 491 respondents how live in Sacramento City, USA. Data was processed using IBM SPSS 28 and IBM SPSS AMOS 26.

The findings of the study showed that consumers perceived a price increase most unfair when higher demand was cited as the justification for price increase. The effects of the other three types of price increase justifications—unspecified (justification), cost increase, and cost increase with low control cue—were not significantly different in this study. Customers may have reacted strongly against this justification because dynamic pricing is not as common in the automotive industry. Results of this study also showed that perceived price affect was influenced by price increase justification. In this study, price effects had no bearing on the consumer intentions that were measured, including intentions to purchase, intention to complain, and intention to spread negative word-of-mouth. It seems logical to surmise that because automobiles are expensive and an erroneous decision carries financial damages to the customer, price affect indicated no significant relationship with customers' intentions. Although either price increase and price increase justification had influence on price fairness and price affect, the magnitude of effect of price increase was greater. A significant direct influencer of price fairness, intention to purchase, and intention to spread negative word of mouth was price increase. It is important to note that price increase indirectly affected intention to complain

through price fairness. The impact of price increase on consumers' perceived emotions was also highly negative.

This study investigates the idea that price fairness can be affected by expected future prices as well as price increases and its justification. Examining the moderating effect of expected future prices on the relationship between price increase and price fairness was one of the study's most significant contributions. The findings suggested expected future price moderators price increase and price fairness relationship. The study found that when consumers were informed that the price of a durable product (a car) would increase in the future, they perceived the current price increase to be fairer than when no information about inflation or price increase was provided. Additionally, when consumers were told that the price of automobiles would increase by 20% in the near future, their perception of price fairness decreased less in comparison to when no expected future price increase was disclosed. The study also found that the expected future price had a significant impact on consumers' purchase intentions. This cognitive cue influenced both the intention to make a purchase and the likelihood of sharing negative feedback. The expected future price also had a positive effect on the intention to complete a transaction for durable goods, meaning that when the future price is expected to increase, consumers are more likely to make a purchase.

*Keywords: price increase, price increase justification, expected future price, price affect, price fairness, consumers' intentions*

## REFERENCES

Adaval, R., & Galli, M. (2022). The interplay of affect and cognition: A review of how feelings guide consumer behavior. In L. R. Kahle, T. M. Lowrey, & J. Huber (Eds.), APA handbook of consumer psychology (pp. 581–607). American Psychological Association.

Adaval, R., & Monroe, K. B. (2002). Automatic construction and use of contextual information for product and price evaluations. Journal of Consumer Research, 28(4), 572-588.

Allender, W. J., Liaukonyte, J., Nasser, S., & Richards, T. J. (2021). Price fairness and strategic obfuscation. Marketing Science, 40(1), 122-146.

Bagozzi, R. P., Belanche, D., Casaló, L. V., & Flavián, C. (2016). The role of anticipated emotions in purchase intentions. Psychology & Marketing, 33(8), 629-645.

Chen, H. A., Bolton, L. E., Ng, S., & Wang, D. (2020). Dual entitlement revisited: Cultural differences in asymmetric pricing. Journal of Marketing Behavior, 4(2-4), 213-225.

Chen, H., Bolton, L. E., Ng, S., Lee, D., & Wang, D. (2018). Culture, relationship norms, and dual entitlement. Journal of Consumer Research, 45(1), 1-20.

Konuk, F. A. (2019). The influence of perceived food quality, price fairness, perceived value and satisfaction on customers' revisit and word-of-mouth intentions towards organic food restaurants. Journal of Retailing and Consumer Services, 50, 103-110.

Kuester, S., Feurer, S., Schuhmacher, M. C., & Reinartz, D. (2015). Comparing the incomparable? How consumers judge the price fairness of new products. International Journal of Research in Marketing, 32(3), 272-283.

Kulkarni, A. A. (2011). Consumers' use of an expected future price as a reference: An investigation of the psychological and contextual antecedents. University of Illinois at Urbana-Champaign.

Xia, L., Monroe, K. B., & Cox, J. L. (2004). The price is unfair! A conceptual framework of price fairness perceptions. Journal of marketing, 68(4), 1-15.

# KNOWLEDGE TRANSFER IN PERU MICRO-ENTREPRENEURS. THE EFFECTS ON PERSONAL AND BUSINESS IMPROVEMENT

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## ABSTRACT

**Purpose** – This paper aimed to analyze the effects of knowledge transfer (KT) of micro-entrepreneurs on personal improvement (PI) and business improvement (BI).

**Design/methodology/approach** – The study was developed in two stages: the literature review based on (a) knowledge transfer and the learning process in micro-enterprises to have the managerial competence, and (b) the personal improvement (PI) and business improvement (BI) to acquire the managerial competence that the entrepreneurs need. The second stage was the construction of a structural model based on 107 questionnaires and a bootstrapping of 5,000 replications of micro-entrepreneurs who went through a training program (quantitative) and a focus group (qualitative). This study had a mixed approach, an exploratory scope, and an experimental design.

**Findings** – The research showed a real evidence about the performance level of the micro-entrepreneurs when they passed through the process of the knowledge transfer (KT), and its impacts on personal improvement (PI) and business improvement (BI). This research considers their managerial competencies and the findings showed a relationship with the theory of individual and organizational learning.

**Research limitations/implications** – The study considered Peruvian micro-entrepreneurs who participated in a virtual training program that included several courses related to their current environments and their interest topics. The analyzed period covered the years affected by the COVID-19.

**Practical implications** – The model reveals that the knowledge transfer has a relevant role on the personal improvement and business improvement. The performance was measured in terms of growth, income, innovation, productivity and responsibility, before and after the program.

**Social implications** – The research analyzed the need for training of micro-entrepreneurs for personal and private reasons under a COVID-19 scenario to foster their businesses and assume financial responsibilities. This paper considered Peru's reality, i.e., a country where more than 80% of

companies are microenterprises. The study revealed that micro entrepreneurs improved their personal and professional lives, and addressed relevant social problems that affect their environments because of the knowledge transfer effects.

**Originality/value** – The study bridged the literature gap about how the theory of knowledge transfer can be applied on entrepreneurs. It revealed significant findings in terms of their personal and business improvements. The impact of knowledge transfer indicated the relevance of the managerial competencies related to the performance level obtained, in terms of growth, income, innovation, productivity and responsibility.

*Keywords: knowledge transfer, micro-entrepreneurs, performance, personal improvement, business improvement.*

# IMPACT OF FINANCIAL LIBERALIZATION ON MUTUAL FUNDS AND BANKING INDUSTRY: THE MODERATING ROLE OF POLITICAL STABILITY

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## ABSTRACT

## INTRODUCTION

Financial liberalization has developed as an important policy agenda in developing countries. Pakistan implemented the financial liberalization in the 1980s, as per the recommendations of the World Bank and IMF, on the basis of previous financial suppression policies. These reforms transformed the financial landscape in Pakistan including various macroeconomic factors. The study's aim is the exploration of the influence financial liberalization has on the financial institution's performance and their growth in size, using political stability as a moderating variable. Empirical model is applied by using panel data followed by regression analysis. The findings from the Pakistani banks, equity mutual funds, and income mutual funds, show that financial liberalization positively effects the performance of financial institutions as well as it also impacts the size of these institutions. Moreover, it suggests that political stability moderates the relationship and has significant effect on the financial institutions' performance. It opens avenues for future research and will help the regulatory bodies to consider financial liberalization and political stability as key determinants of financial development.

## RESEARCH SIGNIFICANCE AND PURPOSE

This study holds significance because in the financial academic literature, there is no concrete study on association amid financial liberalization and performance of banking and mutual funds industry from a political stability perspective. This paper aims to fill the research gap that how financial liberalization enhance the financial sector development and how political stability moderates this relationship.

## METHODOLOGY

This section is about the research methodology and the research design applied to conduct this research, including methods of data collection and ways of analyzing data using computer software application such as Stata. It further highlights the detail of all variables and the empirical model employed in this study.

The study collected data from 33 banks and 50 mutual funds. The banks included all state-owned banks, private commercial banks, and foreign banks, operating in Pakistan. Mutual funds included equity funds and income funds, operating within the financial industry of Pakistan, from a time period of 2006-2016. Panel data is used to explore and study the affiliation of financial liberalization with financial sector's performance.

The study has explored the influence that financial liberalization has on the execution of the Pakistan's banks and mutual funds. The information (bank level and generic information) for this research are extracted from the secondary sources: Bank-level information were gathered from bank annual reports and income statements for the period 2006-2016, as accessible from Bankscope database arranged by State Bank of Pakistan. Whereas, general financial information were gathered through International Monetary Fund (IMF), International Financial Statistics (IFS), information records, the World Bank, World Development Indicator (WDI) databases, and point by point through the documents of the WGI (The Worldwide Governance Indicators).

By consolidating time arrangement and cross-area observations, board information approach offers more educational information with greater changeability (Altunbus, et al. (2000). Moreover, it gives an expanded number of information focuses and henceforth produces extra degrees of flexibility and more proficiency (Baltagi, 2001). Secondly, by linking data and identifying with both cross-area and time arrangement factors, it can considerably lessen the issues that emerge from excluded factors (Wooldridge, 2002).

The association of financial liberalization and financial performance is investigated through empirical model, using bank's performance and size, as dependent variable and independent variables incorporates the bank specific variables (Interest rate control), macroeconomic variables (Capital account restriction), and financial liberalization measures (Credit control and supervision of banks), used in extant literature.

## DISCUSSION (FINDINGS AND IMPLICATIONS)

The findings conform to the results of the extant literature regarding the influence and impact financial liberalization has in enhancing financial development and they are significantly related and that the political stability of the country ensures that financial liberalization enhances the financial performance and growth of the financial institutions.

## CONCLUSIONS

Empirical findings confirm that the Pakistani banks, equity mutual funds, and income mutual funds, show the positive influence and impact that financial liberalization has on the performance of

financial institutions as well as it also impacts the size of these institutions. Moreover, it suggests that political stability moderates the relationship and have significant impact on financial institutions' performance. In light of significant advancements of the Pakistan saving money framework, one can say the accompanying conclusions: The national keeping money industry has become relentless after liberalization of the financial sector was introduced, as shown by the expanded no. of neighborhood and outside market members. The new companies spur state-claimed banks to be upright in their loaning to both open and private areas. It will open avenues for future research and will help the regulatory bodies to consider financial liberalization and political stability as key factors of financial development and of financial performance of the financial institutions.

*Keywords: Financial Institutions, Mutual Funds, Banks, Political Stability*

## REFERENCES

Asongu, S. A., & De Moor, L. (2017). Financial globalization dynamic thresholds for financial development: evidence from Africa. The European Journal of Development Research, 29(1), 192-212.

Babb, S. L., & Kentikelenis, A. E. (2017). International financial institutions as agents of neoliberalism. The SAGE handbook of neoliberalism. Thousand Oaks: SAGE Publications.

Balls, A. (2013). Financial Liberalization Spurs Growth. National Bureau of Economic Research, 1050.

Demirgüç-Kunt, A., & Levine, R. (Eds.). (2004). Financial structure and economic growth: A cross-country comparison of banks, markets, and development. MIT press.

Etchemendy, S., & Puente, I. (2017). Power and Crisis: Explaining Varieties of Commercial Banking Systems in Argentina, Brazil, and Mexico. Journal of Politics in Latin America, 9(1).

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# ARTIFICIAL INTELLIGENCE AND KNOWLEDGE SHARING, WHICH CHALLENGES POP UP?

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## ABSTRACT

## INTRODUCTION

Information technology (IT) is tied to all plans for enhancing organisational knowledge sharing (KS) (Sanzogni et al., 2017). This tight connection is rooted form a revolution in deep learning that has improved the capacity for algorithms to simulate human capabilities in managing knowledge, from "seeing" (image recognition) and "hearing" (voice recognition, natural language processing), to more complicated abilities such as "deciding" (Olan et al., 2022). Therefore, these capabilities, connected with human social behaviour, such as artificial intelligence (AI) tools, have increasingly found their way into KS procedures. Moreover, knowledge and learning are the cross points in AI and KS, so recent advances in AI have provided new foundations for transforming KS in organisations, and an organised KS system has increased AI capabilities (Botega et al.,2020).

However, despite the pros of AI in KS, many challenges have been at the core of concern among academic scholars and digital experts because the development and deployment of AI can have far-reaching consequences for individuals, society, and even the planet. AI systems are increasingly used in sensitive domains, such as healthcare (Hamet and Tremblay, 2017), criminal justice (Isaac, 2017), and finance (Buchanan, 2019), and their decisions can significantly impact people's lives. Therefore, the development of transparent, fair, secure, and accountable challenges in AI systems is essential to minimise potential harm and maximise benefits.

Moreover, we agree that the listed fragmented indicators can increase awareness of the importance of challenges in the current literature. However, it will not help professionals and executives at the implementation level, as there needs to be more consensus about critical challenges. In addition, the current literature has discussed only some lines and fragmented problems, which have led to a large uncertainty. Hence, the research gap in this aspect is understandable as the implementation of AI in KS is currently at an early stage of development. Thus, this research seeks to identify the key indicators of AI challenges in KS in the Electronic businesses. It also seeks to find convenient answers to the following questions: What are the most critical challenges in using AI in KS? How do the challenges seem important among professionals? How do empirical managers and employees view them?

To address this issue, we conducted two studies. The Delphi analysis allowed us to predict and explore the challenges in the first study. For the second study, we utilised survey data collected from professionals for Confirmatory Factor Analysis (CFA) to validate the findings of the Delphi test using a Likert-based questionnaire in the second study.

Regarding the first study, the Delphi panellists recognised and explored 15 critical challenges of using AI in KS. The second study asked 178 managers and employees in 52 businesses about these challenges. The results suggest that the lack of transparency is a significant fundamental challenge of AI in KS when some AI systems use proprietary algorithms and data, making it difficult to understand how they reach their conclusions and trust their outputs (Rezaei et al., 2020). Data quality is the next challenge. Generally, the quality of the data fed into AI systems is crucial for the accuracy of their outcomes.

Poorly structured or unrepresentative data can lead to incorrect or biased results that can be challenging to identify and correct. There has been permanent, substantial concern about data ownership in KS (Rezaei et al., 2021). The rights and control of data used by AI systems can be a contentious issue, especially if the data are proprietary or confidential. People are sensitive about privacy and security and need protection for their personal information when they share their knowledge. AI stores large amounts of private or confidential information for processing; therefore, privacy is a consistent challenge. Trust and reliability are other challenges in AI for KS. In sharing knowledge, it is crucial to establish trust in the sources of that knowledge (Rezaei et al., 2022). This can be a challenge for AI systems because they may need to fully understand the context in which knowledge is generated, or the biases that may have influenced that knowledge. The following recognised challenge is the complexity of AI systems, which makes it difficult for non-experts to understand and interpret their outputs. The responders showed particular attention to bias and discrimination as major challenges of AI in KS. Therefore, AI systems can perpetuate bias and discrimination if the data contain discriminatory elements.

Lack of representation and integration of knowledge is the next challenge for AI in KS. AI systems must represent knowledge in a way that is easily accessible and understandable. When knowledge can come in different forms (e.g. text, images, sound) and have different levels of complexity, AI can make AI challenging. Moreover, AI must be able to integrate diverse knowledge sources, including structured and unstructured data. This is an AI challenge in KS because different sources of knowledge may have conflicting information or may be written in various formats.

Scalability is another AI challenge for managing knowledge processes. AI must be able to define, process, and retrieve knowledge in a scalable manner. However, when the generated knowledge, which is potentially sharable, is multiplied, AI systems must keep up with that growth speed; if not,

knowledge scalability will be questioned (Liebowitz, 2001). Moreover, different AI systems use various data formats, algorithms, and architectures, making knowledge sharing and exchange challenging; therefore, interoperability is another AI challenge.

This investigation contributes to the knowledge on the challenges of AI associated with KS in a three-line research stream. First, by exploring the challenges, this study improves on prior attempts and replies to the existing need for more exploratory analyses. Second, by recognising and ranking AI's most critical challenges in KS, the outputs can facilitate knowledge flow in organisations. The third contribution is raising the level of understanding of KS and AI regarding any challenges which occur, particularly when findings are based on the experiences of professional experts in academia and empirical managers. Moreover, the findings also aid firms' owners and managers in shaping plans for developing knowledge inside the organisation.

*Keywords; Artificial intelligence, Knowledge management, knowledge sharing, confirmatory factor analysis,*

*Delphi method*

## REFERENCES

Botega, L.F.D.C. and da Silva, J.C., 2020. An artificial intelligence approach to support knowledge management on the selection of creativity and innovation techniques. Journal of Knowledge Management, 24(5), pp.1107-1130.
Buchanan, B., 2019. Artificial intelligence in finance.
Hamet, P. and Tremblay, J., 2017. Artificial intelligence in medicine. Metabolism, 69, pp.S36-S40.
Isaac, W.S., 2017. Hope, hype, and fear: the promise and potential pitfalls of artificial intelligence in criminal justice. Ohio St. J. Crim. L., 15, p.543.
Liebowitz, J., 2001. Knowledge management and its link to artificial intelligence. Expert systems with applications, 20(1), pp.1-6.
Olan, F., Arakpogun, E.O., Suklan, J., Nakpodia, F., Damij, N. and Jayawickrama, U., 2022. Artificial intelligence and knowledge sharing: Contributing factors to organisational performance. Journal of Business Research, 145, pp.605-615.
Rezaei, M., Giovando, G., Rezaei, S. and Sadraei, R., 2022. What are the fundamental knowledge-sharing drivers of small family businesses in the restaurant and fast-food industry? British Food Journal, (ahead-of-print).
Rezaei, M., Jafari-Sadeghi, V. and Bresciani, S., 2020. What drives the process of knowledge management in a cross-cultural setting: The impact of social capital. European Business Review.
Rezaei, M., Jafari-Sadeghi, V., Cao, D. and Mahdiraji, H.A., 2021. Key indicators of ethical challenges in digital healthcare: A combined Delphi exploration and confirmative factor analysis approach with evidence from Khorasan province in Iran. Technological Forecasting and Social Change, 167, p.120724.
Sanzogni, L., Guzman, G. and Busch, P., 2017. Artificial intelligence and knowledge management: questioning the tacit dimension. Prometheus, 35(1), pp.37-56.

# EVOLUTIONARY PATH OF THE BUSINESS MODEL IN PUBLIC

# HEALTHCARE FACILITIES:

# A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

The coronavirus (COVID-19) pandemic increased the average per capita health expenditure of many countries, especially in counties in the Organisation for Economic Co-operation and Development (OECD/European Union, 2020). Moreover, the gross domestic product of many countries contracted (OECD/European Union, 2020).

Given this context, healthcare facilities should reassess their business models to achieve sustainability. This study aims to identify the evolutionary path of business models in public healthcare facilities.

The literature defines a business model as a tool divided into the following four sections: "what" the company offers, describing the value proposition offered; "who" is the target audience, highlighting the relationship with customers; "how" the company conducts business, emphasising the management of resources and activities to satisfy the first two points; and "how much" the company earns, describing the revenue and cost flow (Osterwalder and Pigneur, 2003). The literature rarely investigates the evolutionary path of the business model in public healthcare facilities.

This research will adopt a systematic literature review (Tranfield *et al.*, 2003): planning the review, identifying keywords, defining document-selection criteria, selecting relevant documents, classifying study information, and conducting an in-depth analysis based on the co-word analysis technique (Callon *et al.*, 1991) using the open-source software R-package Bibliometrix (Aria and Cuccurullo, 2017). Bibliometrix analyses trends and their evolution in scientific research and has recently become one of the most widely used programmes for conducting bibliometric research.

The findings will describe evolutionary trends and highlight the main changes modifying the business models of public healthcare facilities, which are the theoretical and practical contributions.

The value of the study, in the current context, is that it will provide insight into the healthcare sector before, during, and after the COVID-19 pandemic. The study will explore the keywords and how they influence the composition of a business model for a healthcare organisation, depending on the historical context and stakeholder needs.

The research implications may suggest new content for innovative business models for public healthcare facilities.

The findings will be generalisable to the context of public healthcare facilities at the international level and will explain the trend of business models on an international level through the systematic literature review.

*Keywords: Business model, National Health Service (NHS), healthcare facilities*

## REFERENCES

Aria, M. and Cuccurullo, C. (2017), "bibliometrix: An R-tool for comprehensive science mapping analysis", Journal of Informetrics, Elsevier Ltd, Vol. 11 No. 4, pp. 959–975.

Callon, M., Courtial, J.P. and Laville, F. (1991), "Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemsitry", Scientometrics, Vol. 22, pp. 155–205.

OECD/European Union. (2020), Health at a Glance: Europe 2022: State of Health in the EU, Tuberculosis, Vol. 6011.

Osterwalder, A. and Pigneur, Y. (2003), "Modeling value propositions in e-business", ACM International Conference Proceeding Series, Vol. 50, pp. 429–436.

Tranfield, D., Denyer, D. and Smart, P. (2003), "Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review", British Journal of Management, Vol. 14 No. 3, pp. 207–222.

# ATTITUDE TOWARDS FASHION INFLUENCERS, MASSTIGE BRANDS AND PURCHASE INTENTION: NEW CONCEPTUAL MODEL

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## ABSTRACT

The use of influencers by brands has been recurrent in recent times. On the other hand, they also achieve greater visibility, having the ability to interact with the public in a more assertive and effective way. This explosive growth in the number of social media users has transformed the way companies plan their marketing activities. In order to take advantage of this growth, companies are focusing all their attention on influencer marketing, where they employ independent influencers to promote their products and services on social media (Mallipeddi, Kumar, Sriskandarajah, & Zhu, 2022). Consumers use masstige brands in their identity as a way of associating status and prestige about who they are (Moorlock, Dekel-Dachs, Stokes, & Larsen, 2023). Linked to this, the existence of Influencers on social networks endorsing masstige brands helps to maintain interest and awareness of what brands are doing in the market (Rodrigues, Sousa, Fetscherin, & Borges, 2022).

Recently, Bilro, Loureiro, and dos Santos (2022) work explores whether brands' masstige campaigns influence feelings and attitude towards the brand among customers and fashion followers on social media, namely Facebook and Instagram. This paper, on the contrary, based on social comparation theory, aims to find out whether consumers' attitudes towards influencers and their consciousness of endorsed brands improves the perception of the masstige strategy developed by brands, leading to an increase in purchase intention.

The attitude towards the influencer is not yet a well-defined construct; however, the literature has shown that the perceived congruence in the influencer-product relationship positively affects the followers' perceptions of credibility and attitudes towards influencers (Taillon, Mueller, Kowalczyk, & Jones, 2020). The use of fashion influencers as marketing strategies is considered a very important tool to improve the status and reputation of brands (Castillo-Abdul, Romero-Rodríguez, & Balseca, 2021). Brand consciousness considers that the brand name (endorse by a fashion influencer) is important in the psychological prepurchase process (Nelson & McLeod, 2005). Thus, It can be postulated that the individual's attitude towards fashion influencers and brand consciousness affect the perception of the brands' masstige strategy, inducing an increase in the intention to buy.

*H1: Attitude toward fashion influencer enhance the consumer perception of masstige brands*

*H2: Brand consciousness enhance the consumer perception of masstige brands*

*H3: Consumers perception of masstige brand enhance the intention to buy the brand*

To carry out the study, a questionnaire was designed and subsequently, it was applied on social networks such as, Facebook, LinkedIn, Instagram, WhatsApp and Messenger, for the Portuguese population, during the month of September 2022. In the first part of the questionnaire, the respondent is asked to indicate - from a list of ten Fashion influencers - whether or not he/she knows the influencer, whether or not he/she follows him/her on the social networks and whether or not he/she follows him/her closely. The respondent is also asked to indicate a brand that his/her favourite influencer promotes. In the second part, the respondent has to consider his/her favourite influencer and answer two questions in order to assess his/her perception towards the selected influencer. Finally, they had to answer a set of statements highlighting their degree of agreement. The list of ten influencers was taken from an article published on July 27, 2021, from the JD Institute website. The attitude towards the influencer is assessed using Ajzen's (2011) scale, consisting of four items. Purchase intention is measured using the scale of Ko, Kim, and Lee (2009) and this has three items. Brand consciousness is measured using the Sprotles and Kendall (1986) scale, consisting of six items. The scale that was used to measure masstige was Justin Paul's scale (2019) and consists of ten items. This study obtained a total of 153 responses valid and the most mentioned brands were Nike, Dior, and Louis Vuitton. All constructs were measured using five-point Likert scales.

The hypotheses were tested with partial least squares structural modelling (PLS-SEM), with structural equation techniques based on variances (Hair, Black, Anderson, & Babin, 2018). Findings provide support for all hypotheses with a positive effect of attitude toward influencers on masstige brand perception ($\beta = 0.196$, $p < 0.001$), a positive effect of brand consciousness on masstige brand perception ($\beta = 0.597$, $p < 0.001$), and a significant positive effect of brand happiness on brand loyalty ($\beta = 0.491$, $p < 0.001$).

From a theoretical point of view, this study helps to fill one of the gaps in the literature regarding the need to develop research on social platforms and masstige strategies. This research also contributes for brand managers to consider the choice of fashion influencers in masstige strategies to increase the brands' purchase intention.

## ACKNOWLEDGMENT

*Keywords: Masstige Brand, Fashion Influencers, Social Media, Buying Intention*

## REFERENCES

Bilro, R. G., Loureiro, S. M. C., & dos Santos, J. F. (2022). Masstige strategies on social media: The influence on sentiments and attitude toward the brand. International Journal of Consumer Studies, 46(4), 1113-1126. doi:https://doi.org/10.1111/ijcs.12747

Castillo-Abdul, B., Romero-Rodríguez, L. M., & Balseca, J. (2021). Hola Followers! Content Analysis of YouTube Channels of Female Fashion Influencers in Spain and Ecuador. SAGE Open, 11(4), 21582440211056609.

Hair, J. F., Black, W. C., Anderson, R. E., & Babin, B. J. (2018). Multivariate Data Analysis: Cengage.

Mallipeddi, R. R., Kumar, S., Sriskandarajah, C., & Zhu, Y. (2022). A framework for analyzing influencer marketing in social networks: selection and scheduling of influencers. Management Science, 68(1), 75-104.

Moorlock, E., Dekel-Dachs, O., Stokes, P., & Larsen, G. (2023). Constructing Consumer-Masstige brand relationships in a volatile social reality. Journal of Business Research, 155, 113381.

Nelson, M. R., & McLeod, L. E. (2005). Adolescent brand consciousness and product placements: awareness, liking and perceived effects on self and others. International Journal of Consumer Studies, 29(6), 515-528.

Rodrigues, P., Sousa, A., Fetscherin, M., & Borges, A. P. (2022). Exploring masstige brands' antecedents and outcomes. International Journal of Consumer Studies.

Taillon, B. J., Mueller, S. M., Kowalczyk, C. M., & Jones, D. N. (2020). Understanding the relationships between social media influencers and their followers: the moderating role of closeness. Journal of Product & Brand Management, 29(6), 767-782. doi:10.1108/JPBM-03-2019-2292

# CRYPTOCURRENCY TRUST AND INTENTION TO USE: CONSUMERS' PERSPECTIVE

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## ABSTRACT

Cryptocurrency is an electronic version of money (Jiang, Wu, Tian, & Nie, 2021). That allows online payments directly between two parties without the intermediation of a financial institution. For this, it needs an instrument called a blockchain. Blockchain is a distributed, digital transaction book with identical copies kept on multiple computer systems controlled by different entities. Digital currencies based on blockchain technology, which employs cryptographic techniques, are considered cryptocurrencies (Sousa, Calçada, Rodrigues, & Pinto Borges, 2022). The purpose of this research is to test a conceptual model where it is observed the relations between different drivers (anxiety, social influence, facilitating conditions, and ethical issues) in cryptocurrency consumers' trust to explain the intention to use.

Many blockchain technology connoisseurs discuss this technology's complex characteristics and unique structure, which has encouraged the consideration of new adjacent content. From the user's point of view, legislation and legitimacy are the main concern, followed by environmental variables such as social effect, technology design, and user experiences. Existing studies have pointed out the threats of cryptocurrency (Sousa et al., 2022). One prominent fact is that the theft or loss of cryptocurrency is unrecoverable regardless of whether the root cause of the loss is by means of human mistake or cyber-attacks. Other threats include the fluctuations of cryptocurrency value which impact financial investments. This can lead to consumer anxiety. In addition, trust and risk must be considered when using this technology. Consumers consider the risk to be the most anxious concern regarding blockchain technology (Albayati, Kim, & Rho, 2020). Trust refers to consumers' comfort, confidence, and security when using technologies. In the case of blockchain technology adoption and cryptocurrency, trust is an element that is needed to maintain a relationship with the customer.

H1: Anxiety negatively affects the respondent's trust in cryptocurrency.

The cryptocurrency is a technology-based product, and the user will require a minimum level of technological capacity to utilize this asset. Facilitating condition is defined as the level of support in the form of infrastructure that an individual believes is required to run or operate technology into a new system (Ter Ji-Xi, Salamzadeh, & Teoh, 2021; Yeong, Kalid, Savita, Ahmad, & Zaffar, 2022).

H2: Facilitating conditions positively affect the consumer's trust in cryptocurrency.

Social influence refers to an individual's norms, roles, memberships, and values, which influence the individual's perception of what they should do (Chaouali, Ben Yahia, & Souiden, 2016). Previous studies have advocated that, the opinions, and preferences of society, including family members, friends and other existing users of the technology profoundly impact an individual's behaviour towards adopting that new technology (Yeong et al., 2022). In the case of blockchain technology adoption and cryptocurrency, social factors could affect trust.

H3: Social influence positively affects the respondent's trust in cryptocurrency.

Ethical issues comprise of regulations on the conduct of transactions which include, legal implications of smart contracts, personal data, investing money through virtual assets, and the advent of disruptive technology (Dierksmeier & Seele, 2018). The development mechanisms of the broad principles of ethics can be applied to the new technological context of smart contracts and in which cases smart contracts can create an ethically required practice of their parties and deter suspicion on existing barriers is yet to be found (Sousa et al., 2022). When consumers perceive that the technology underlying cryptocurrencies has ethical concerns, they will tend to trust them.

H4: Ethical issues positively affect the respondent's trust in cryptocurrency.

Intention to use can be defined as the degree to which a person has formulated conscious plans regarding whether to perform a specified future behaviour (Arias-Oliva, Pelegrín-Borondo, & Matías-Clavero, 2019). When consumers trust cryptocurrencies, they tend to use them more.

H5: Consumers' trust in cryptocurrencies positively affects their intention to use them.

557 valid responses were collected through a questionnaire, and the proposed conceptual model was tested using structural equation modeling (SEM), from Portuguese cryptocurrency users. The choice of scale items closely follows the conceptual definitions previously discussed. Most of the respondents were male (54.4%), between 26 and 40 years old (40.7%), with a monthly household income between 1001€ and 2000€ (34.4%), and with an occupation in the tertiary sector (36.5%). With regard to the most well-known or owned cryptocurrency, Bitcoin was the most chosen (93.5%), followed by Ethereum (33.5%), Cardano (27.7%), and Dogecoin (23.0%). The main results allow us to conclude that social influence, facilitating conditions, and ethical issues positively affect consumers' trust in cryptocurrency. Anxiety negatively affects the consumers' trust in cryptocurrency. Finally, consumer trust in cryptocurrency positively affects the intention to use.

Our analysis identifies new drivers in cryptocurrency consumer trust and intention to use, offering novel insights into cryptocurrency literature. The paper's novelty concerns the mediating effect of trust between drives to adopt new technologies and the intention to use cryptocurrencies.

## ACKNOWLEDGMENT

*Keywords: Cryptocurrency, drivers, consumer trust, intention to use.*

## REFERENCES

Albayati, H., Kim, S. K. and Rho, J. J. (2020), "Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach", Technology in Society, Vol. 62, pp. 101320.

Arias-Oliva, M., Pelegrín-Borondo, J. and Matías-Clavero, G. (2019), "Variables Influencing Cryptocurrency Use: A Technology Acceptance Model in Spain", Vol. 10.

Chaouali, W., Ben Yahia, I. and Souiden, N. (2016), "The interplay of counter-conformity motivation, social influence, and trust in customers' intention to adopt Internet banking services: The case of an emerging country", Journal of Retailing and Consumer Services, Vol. 28, pp. 209-218.

Dierksmeier, C. and Seele, P. (2018), "Cryptocurrencies and Business Ethics", Journal of Business Ethics, Vol. 152 No. 1, pp. 1-14.

Jiang, Y., Wu, L., Tian, G. and Nie, H. (2021), "Do cryptocurrencies hedge against EPU and the equity market volatility during COVID-19? – New evidence from quantile coherency analysis", Journal of International Financial Markets, Institutions and Money, Vol. 72, pp. 101324.

Sousa, A., Calçada, E., Rodrigues, P. and Pinto Borges, A. (2022), "Cryptocurrency adoption: a systematic literature review and bibliometric analysis", EuroMed Journal of Business, Vol. 17 No. 3, pp. 374-390.

Ter Ji-Xi, J., Salamzadeh, Y. and Teoh, A. P. (2021), "Behavioral intention to use cryptocurrency in Malaysia: an empirical study", The Bottom Line, Vol. 34 No. 2, pp. 170-197.

Yeong, Y.-C., Kalid, K. S., Savita, K. S., Ahmad, M. N. and Zaffar, M. (2022), "Sustainable cryptocurrency adoption assessment among IT enthusiasts and cryptocurrency social communities", Sustainable Energy Technologies and Assessments, Vol. 52, pp. 102085.

# THE POWER OF CONNECTION: EXPLORING THE ROLE OF IDENTIFICATION IN THE EMOTIONAL RELATIONSHIP BETWEEN HUMANS AND ROBOTS IN THE HOSPITALITY INDUSTRY

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## ABSTRACT

### RESEARCH AIM

Identifying market trends is critical for companies to remain competitive, and using technologies such as Artificial Intelligence and Robotics is transforming all business industries and society, impacting experiences and relationships among people. The hospitality industry, which traditionally relies on Human-Human Interactions, is also undergoing technological transformation, with AI and social robots presenting significant potential for growth and new ways of interacting. However, technologies should enhance the hospitality experience and not threaten customers' sense of hospitality. Thus, understanding how robots can improve hospitality services and increase customer satisfaction while maintaining a hospitable environment is crucial.

Previous studies have investigated various research domains related to robotics in the hospitality industry, including the design and adoption of robots, human field, robot manufacture, business functions related to tourism, servicescape, external environment, and education, training, and research organizations. However, very few studies have focused on the customers' perspective and sentiments on service robots or the robot-human interactions and customer service experience. To address the gap, this study aims to investigate the interactions between social robots and humans in hospitality and understand the possible contributions of the customer-robot emotional relationship on customers' feelings of wellness. Specifically, this study proposes to explore whether humans can develop feelings of identification with a social robot in the hospitality field and whether the identification that consumers perceive between themselves and hospitality social robots can influence the creation of a close relationship between both parties, similar to human-human interaction, and the creation of customer well-being.

## THEORETICAL BACKGROUND

The theoretical background of this paper is based on Fournier's Brand Relationship Theory (1998),

which suggests that humans can form relationships with brands similar to social relationships. Belk (2016) further supports this idea by claiming that humans can extend themselves to non-human agents, including brands and devices, and form relationships with them. In the hospitality industry, social robots are increasingly being used to represent a brand, which can facilitate customer identification with the brand. Customer-brand identification is crucial in forming strong relationships between the two parties, as it helps fulfill customers' self-definition needs (Bhattacharya & Sen, 2003; Bock et al., 2020; Rather, 2018). When a brand selects a representation similar to the customers' ideal self, it allows for more significant interaction between the two parties.

Chang and Chieng (2006) adapted Fourniers's brand relationship quality model to the restaurant setting and considered six relationship dimensions designed by Functional Exchange, Love, Commitment, Attachment, Self-Connection, and Partner Quality. These dimensions are related to Customer-Brand Identification (i.e., Self-Connection), and Chang and Chieng's study was considered for this research's proposed conceptual model. Consumers with a meaningful relationship to an object or brand are likelier to humanize it and develop favourable actions and beneficial feelings toward it (Fournier, 1998; Belk, 2016). This meaningful relationship can also lead to long-term well-being for the customer. Therefore, understanding the relationship process between social robots and humans and the influence of identification on attachment, connection, and commitment in the hospitality industry is crucial in assessing the possible contributions of the customer-robot emotional relationship on customers' feelings of wellness.

## METHODOLOGY

This study employed a quantitative approach to test the conceptual model. The measurements of the constructs were based on previous research. The study uses four questionnaires, each featuring a short video of a hotel social robot with varying levels of anthropomorphism. The survey was conducted using Qualtrics and distributed via Amazon Mechanical Turk with a location filter to target USA residents exclusively. Of 412 responses, 400 were eligible and analysed using IBM SPSS 25 Statistics to calculate the sample profile and SmartPLS 3 to test the model. The sample profile showed that 97% of participants were average, experienced, or very experienced users, with most having previously interacted with a service robot in hotels, restaurants, airports, or hospitals. The sample comprised 47.5% male, 51.75% female, and 0.75% identifying as other. Most participants were 26 to 57 years old, with over half having a bachelor's degree and being employed.

## CONCLUSIONS AND IMPLICATIONS

This study contributes to the theoretical understanding of the relationship strength between humans and robots in the hospitality industry and how it can promote customer well-being. By integrating the concepts of customer-robot identification, customer-robot relationship, and customer well-being into a unique framework, the study reveals the potential for social robots to be perceived and interacted with similarly to human social beings. The incorporation of the concept of well-being into the model provides a contribution to the study of Robotics from a marketing perspective.

From a managerial perspective, it is essential for brands, sellers, and manufacturers of social robots to acknowledge the importance of personalizing the customer experience. The study suggests that customers expect social robots to be emotional, reliable, and empathic, as if they were human partners. Therefore, careful strategies must be developed to manage customer-robot relationships, especially in the post-pandemic world where customers desire deeper interactions and a human touch. Human staff should not be replaced but rather work together with emotional robots to provide customers with improved experiences. In this regard, the study highlights the potential for social robots with feeling intelligence to bring several advantages to both human workers' wellness and clients.

*Keywords: Social robots; Hospitality industry; Customer-Robot Identification; Customer-Robot Relationship; Customer Well-Being.*

## REFERENCES

Belk, R. (2016). Extended self and the digital world. Current Opinion in Psychology, 10, 50–54. https://doi.org/10.1016/j.copsyc.2015.11.003

Bhattacharya, C. B., & Sen, S. (2003). Consumer-Company Identification: A Framework for Understanding Consumers' Relationships with Companies. Journal of Marketing, 67(2), 76–88. https://doi.org/10.1509/jmkg.67.2.76.18609

Bock, D. E., Wolter, J. S., & Ferrell, O. C. (2020). Artificial intelligence: disrupting what we know about services. Journal of Services Marketing, 34(3), 317–334. https://doi.org/10.1108/JSM-01-2019-0047

Chang, P., & Chieng, M. (2006). Building consumer–brand relationship: A cross-cultural experiential view. Psychology & Marketing, 23(11), 927–959.

Fournier, S. (1998). Consumers and Their Brands: Developing Relationship Theory in Consumer Research. Journal of Consumer Research, 24(4), 343–353. https://doi.org/10.1086/209515

Rather, R. A. (2018). Investigating the Impact of Customer Brand Identification on Hospitality Brand Loyalty: A Social Identity Perspective. Journal of Hospitality Marketing & Management, 27(5), 487–513. https://doi.org/10.1080/19368623.2018.1404539

# LEAN AND SAFETY MANAGEMENT TO IMPROVE CARE PATHWAYS, DISCHARGE AND CARE CONTINUITY: INSIGHTS FROM A CASE STUDY IN ITALY

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## ABSTRACT

## INTRODUCTION

Ageing population, the continuous rise of the demand for health care and quality, and the growing political, social and financial pressures are challenging the healthcare system. Managerial practices, such as Healthcare Lean Management (HLM) and Clinical Risk Management (CRM), are helpful to strive to mitigate the inefficiencies of the system and to provide a sustainable response over time, despite the restrictions on resource availability.  HLM is rapidly spreading in healthcare. Indeed, the positive results achieved in performances make HLM the main improvement methodology adopted in the healthcare sector (Henrique and Godinho Filho, 2020). This managerial approach offers many benefits to health organizations by identifying and eliminating waste and delays along the process thus increasing its efficiency (White et al., 2013), by enhancing decision-making, and finally by improving the overall patient experience and perceived value (Antony et al., 2019). On a different perspective and for different and complementary reasons, CRM is adopted to improve patient safety and reduce costs caused by the clinical risks in the care process (Vincent et al., 1998). In the healthcare sector, HLM (Hallam and Contreras, 2018) and CRM (Vincent et al., 1998) are adopted separately or even alternatively to manage waste or risks, respectively. Nonetheless, considering the multiple managerial and organizational aspects in common between the two approaches, the integrated adoption of HLM and CRM would enhance a proactive management of risks and waste in synergy. In particular, a combined adoption of the two methodologies would allow to intervene on multiple performances simultaneously, with the final purpose of improving the quality of care (Crema and Verbano, 2016). In healthcare organizations, cooperation and integration among different specialists and professionals is promoted to guarantee the continuity of care in case of complex patients and multi-morbidity. Continuity of care aims to meet patients' needs by sharing information and building relationships among the care teams, families, caregivers, and other actors involved also outside the hospital boundaries thus ensuring care overtime (Hu et al., 2020). In a fragmented and hyper-specialized

healthcare system, the continuity of care between hospital and territorial assistance plays a fundamental role to ensure to the patient a long-term care pathway without gaps in transitions between different levels and sites of care. High levels of care continuity lead to improved quality of life and of care, contributing to the reduction of costs and to lower hospitalization rates (Hofer and McDonald, 2019). Despite HLM has rapidly been adopted in different countries and in multiple healthcare sectors (Radnor et al., 2012), its implementation is usually still limited to hospital wards (Hallam and Contreras, 2018) and the adoption beyond hospital boundaries still represents a new frontier, as well as for CRM. The analysis of the entire care process extended to the territory and based on a combined use of HLM and CRM for the management of risks and waste, is therefore an innovative theme, in terms of both focus of the analysis and methodological approach.

## OBJECTIVES AND METHODOLOGY

The objective of this study is to improve efficiency, safety and effectiveness of care pathways, with a particular focus on the discharge process, through the proactive and integrated management of risks and wastes, thus ensuring the continuity of care beyond the hospital boundaries. Patients flow was studied at Ca' Foncello hospital in Treviso (Italy) that is part of "ULSS 2 Marca Trevigiana" which serves more than 800.000 citizens. In particular, the project focused on the discharge process from geriatrics and internal medicine wards to external facilities or home. All the discharge front office and back-office activities, the decision-making nodes and the involved professionals' roles were investigated through data mining, direct observations, and structured interviews. The information collected contributed to map the process and the different way in which the discharge process is managed in the various wards, using HLM tools such as Makigami, Flow Charts and Cross Functional maps. These maps will be revised and verified through meetings, interviews, brainstorming, focus groups involving experts and stakeholders of the process. Moreover, interviews to professionals allowed to identify critical aspects in the process as perceived from people directly involved. Key Performance Indicators in the risk and waste management perspective were collected and analyzed in each process phase. Concerning risk management, Failure Mode and Effect Analysis (FMEA) technique was adopted in focus groups with experts and with process stakeholders to identify and prioritize risks. During the next project steps, data will be analysed using both descriptive and inferential statistics. On one hand, the different ways in which the involved wards manage the discharge process will be assessed and benchmarked in order to individuate the best practices. On the other hand, the critical aspects arisen during the interviews will be quantified, assessing their impact on the process. Based on the results of the root cause analysis, improvement areas will be identified. Finally, improvement actions will be grasped, selected and ranked according to the impact-feasibility matrix. In

a nutshell, to maximize the patient perceived value in the care pathways, risks and waste were identified, mapped, measured and evaluated, throughout the discharge process from the hospital to the territory.

## RESULTS AND FOLLOW UP

Mapping and data analysis will allow studying and fully understanding current care pathways in order to increase their performance in the discharge process by an integrated use of HLM and CRM methodology, and thanks to the feedback from all the stakeholders involved.

Mapping is the result of measuring and analyzing phases, and it will be followed by the improve phase. In the latter, the solutions identified with the work team will be implemented. All the stakeholders of the entire care pathway (from the hospital to the territory, to the patient's home) will take part in the project and the personnel involved will be trained in the field. The impact of improvements will be then assessed according to the same criteria used in the mapping phase.

In summary, the project presents innovative aspects both in terms of objectives, application settings and approaches adopted. This study is based on combined managerial approaches that will enhance identification, evaluation and reduction of risks and wastes at the same time, optimizing the care pathways, and in particular the discharge process. Accordingly, this approach will lead positive effects also in the continuity of care, with relevant benefits for those patients who need to be managed even beyond the hospital boundaries.

## ACKNOWLEDGEMENTS

*Keywords: Lean management, healthcare management, risk management, process management, care integration, care continuity, case study.*

## REFERENCES

Antony, J., Sunder M., V., Sreedharan, R., Chakraborty, A., Gunasekaran, A., 2019. A systematic review of Lean in healthcare: a global prospective. International Journal of Quality & Reliability Management 36, 1370–1391.

Crema, M., Verbano, C., 2016. Identification and development of Lean and Safety projects. Safety Science 89, 319–337.

Hallam, C.R.A., Contreras, C., 2018. Lean healthcare: scale, scope and sustainability. International Journal of Health Care Quality Assurance 31, 684–696.

Henrique, D.B., Godinho Filho, M., 2020. A systematic literature review of empirical research in Lean and Six Sigma in healthcare. Total Quality Management & Business Excellence 31, 429–449.

Hofer, A., McDonald, M., 2019. Continuity of care: why it matters and what we can do. Aust J Prim Health.

Hu, J., Wang, Y., Li, X., 2020. Continuity of Care in Chronic Diseases: A Concept Analysis by Literature Review. Journal of Korean Academy of Nursing 50, 513–522.

Radnor, Z.J., Holweg, M., Waring, J., 2012. Lean in healthcare: the unfilled promise? Social Science & Medicine 74, 364–371.

Vincent, C., Taylor-Adams, S., Stanhope, N., 1998. Framework for analysing risk and safety in clinical medicine. BMJ 316, 1154–1157.

White, M., Wells, J., Butterworth, T., 2013. Leadership, a key element of quality improvement in healthcare. Results from a literature review of "Lean Healthcare" and the Productive Ward: Releasing time to care initiative. The International Journal of Leadership in Public Services 9, 90–108.

# GEORGIAN CONSUMERS' DETERMINANTS OF PURCHASE INTENTION TOWARD ORGANIC WINES

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## ABSTRACT

## 1. INTRODUCTION

*1.1. Research background*

Over recent years the wine industry is facing, among other, several environmental challenges led by the growing attention of consumers towards the wholesomeness and the environmental dimension of the wine (Moscovici et al., 2022; Schäufele and Hamm 2018; Dominici et al. 2019). This growing interest towards sustainable production has led winegrowers to change the way they produce grapes and wines and the need to regulate the wine sector in order to provide greater guarantees to the different actors of the wine supply chain. Since the early 90s, the United States, with the National Organic Foods Act of 1990, and the EU, with the Regulation (EC) No 834/2007 complemented by Regulation (EU) No 203/2012 regulated organic wine production by prescribing certain rules for cultivation, oenological practices or substances used promoting the development of the sector. As a result, EU and North America are currently, the first and second-largest market for organic wines in the world (Grand View Research, 2023).

In the international scenario, Georgia is a multicultural country famous throughout the world for its extensive culture of enology and winemaking (Kharaishvili, 2017). The total contribution of the wine industry to the Georgian agri-food sector is quite significant, 12.2% of the richness produced by the sector (National Statistics Office of Georgia, 2022). In 2022, 103.3 million liters of wine have been exported from Georgia to 65 countries, which is a historical achievement in the case of Georgian wine foreign trade (Georgia Ministry of Environmental Protection and Agriculture, 2022). Despite the ancient tradition in the production of wine, the interest in organic productions has only recently emerged among Georgian grape and wine producers. In 2014, the EU-Georgia Association Agreement has had a major beneficial impact on the agriculture in Georgia (EU Commission, 2014). One of the important aspects of Georgia's comprehensive relationship with the European Union and participation in the international grant program is the development of an organic wine industry and the creation of a new market niche (Khachapuridze, 2021). According to the database provided by LTD Caucascert

(2023), currently there are 136 registered organic producer companies in Georgia, with the majority of organizations engaged in winemaking (96 units), which represent only the 3% of the whole segment of wine-producing companies (GeorgiaDCFTA, 2022). These data show that Georgian organic wine industry is still in its infancy.

*Research Gap*

In recent years, the interest of academics in understanding the main factors affecting the consumers' intention to buy organic or sustainable wines has grown significantly. Many studies underline the important role of information on building a greater awareness of consumers of the health and environmental benefits of organic wines and, consequently, on increasingly responsible and aware consumption habits (Rabadán & Bernabéu, 2021; Maesano et al., 2021; Galati et al., 2019). Indeed, as several authors find, a greater awareness of consumers towards the quality and nutritional attributes of organic wines, as well as on the lower impact on the environment consequently to the adoption of more sustainable production processes significantly influence the willingness to pay for this type of wine compared to conventional products, mainly among the new generations and among people with a higher level of education (Galati et al., 2019; Lu et al., 2019; Schäufele et al., 2018). However, as emerges from some studies, many consumers, although greatly interested in environmentally friendly actions, show little interest in organic wines and organic wine certifications (Boncinelli et al., 2021; Rabadán et al., 2021), both for the higher price (Janssen et al., 2020), and for their popular negative taste image (Stolz & Schmid, 2008). In addition, as Moscovici and colleagues (2022) found, geographical factors can also affect consumer's habits emphasizing that consumers from traditional wine producing countries, like Italy and France, are more willing to purchase organic wines, probably because of the long tradition of these countries in winemaking culture, and the diffusion of the culture of sustainability. As already highlighted, in Georgia, a country that boasts ancient traditions in the cultivation of vines and in the production of wine (Dinello (2022), the production of organic wine is still in an embryonic phase, but with significant growth rates. Kharaishvili and co authors (2019) mentioned that production of organic wine is considered as potential perspective. However, to date, no studies have been carried out in order to explore the purchase intention of organic wine among Georgian consumers and the influence that attitudinal and situational factors affect the intention to buy organic wines.

*1.3. Aims and contribution of the study*

In light of the above, this study aims to explore Georgian consumers' demand for organic wines and identify the main intrinsic and extrinsic attributes affecting their decision. Bearing in mind that no studies, to date, have been carried out on wine consumers in Georgia, this research enriches the literature in this research field. From the managerial perspective, this study allows you to identify the

potential of the organic wine market, which today is in an embryonic state through the identification of the characteristics, perceptions and attitudes of consumers. Findings can provide relevant information for winemakers who want to focus on organic production strategies making it possible to support a market segment that can create economic and environmental value.

## 2. METHODOLOGY

To reach this aim the present study uses the Stimulus-Organism-Response (S-O-R) paradigm as a theoretical framework (Jacoby, 2002). The S-O-R paradigm helps explain how individuals respond to stimuli that are external to consumers. They might be object stimuli, such as, for example, the characteristics of the product, and socio-psychological stimuli that come from the surrounding environment. It suggests that a stimulus (S) affects the internal state or organism (O) of the individual (also known as the consumer's black box) including attitudes, emotions, perceptions, and beliefs, which in turn results in a response (R) (Tandon, 2021). The SOR paradigm allows us to interpret the decision-making process of consumers through a unidirectional cause-and-effect association between multiple components. This theoretical framework has been used to study various aspects of consumer behaviour and has recently also been used to examine factors influencing consumers' intention to purchase sustainable products (Sultan et al., 2021). For the current study, a sample of the Georgian population will be analysed and data were will be collected using an online questionnaire. Then, cross-sectional data obtained from Georgian consumers will be analysed using a structural equation model (SEM). SEM is a statistical approach used to measure and test multiple causal links between variables, which includes the measurement model and the structural relationship model (Bollen, 1989; Califano et al., 2022). Some factors are assumed to positively influence consumers' preference for sustainable wine, while other (inhibitors) may push consumers in the opposite direction.

## 3. EXPECTED RESULTS

The Georgian consumers' intention to purchase organic wine is influenced by informational stimuli, which affect the consumers' internal state. However, informational stimuli are expected to produce different responses among Georgian consumers depending on their attitudes toward the purchase of organic wines. In fact, considering that the organic wine sector is still in an embryonal stage, we expect that some informational stimuli associated with price, product availability and trust toward the Georgian organic certification system could negatively affect the consumers' intention to purchase organic wine. Further, we expect that there is a segment of customers characterized by high income and a high level of education who will show high intention to purchase organic wine. The study's findings may enrich the literature on the consumers' intention to purchase organic wines, especially in a country

characterized by a long tradition in winemaking, but with low experience in the sustainable products market.

*Keywords: sustainable wines, quality cues, environmental atttudes, Stimulus-Organism-Response (S-O-R) paradigm.*

## REFERENCES

Bollen, K. A. (1989), Structural equations with latent variables, 210. Wiley.

Boncinelli, F., Dominici, A., Gerini, F., Marone, E. (2021), "Insights into organic wine consumption: behavior, segmentation and attribute non-attendance" Agricultural and Food Economic, 9(1) 1-16, DOI: 10.1186/s40100-021-00176-6

Califano, G., Capasso, M., & Caso, D. (2022), "Exploring the roles of online moral disengagement, body esteem, and psychosexual variables in predicting sexting motivations and behaviours" Computers in Human Behavior, 129, 107146.

Caucascert, (2023). Report List of Organic Comapanies, available at: http://caucascert.ge/ge/operators/metsarmeta-sia , accessed on 11.03.2023.

Chalupová, M., Pilař, L., Rojík, S. (2021). Organic wine as an Instagram star using a design thinking approach. Woodhead Publishing Series in Consumer Sci & Strat Market. 149-163. DOI: 10.1016/B978-0-12-817821-8.00011-4

D'Amico, M., Di Vita, G., Monaco, L. (2016), "Exploring environmental consciousness and consumer preferences for organic wines without sulfites" Journal of Cleaner Production. 120, 64-71. DOI: 10.1016/j.jclepro.2016.02.014

Di Vita, G., Pappalardo, G., Chinnici, G., La Via, G., D'Amico, M. (2019), "Not everything has been still explored: Further thoughts on additional price for the organic wine" Journal of Cleaner Production. 231, 520-528. DOI: 10.1016/j.jclepro.2019.05.268

Dinello, N. (2022). "Centrality of winemaking in Georgia: from prehistoric age to present-day globalization" Journal of Wine Research, 33(3). 123-145, DOI: 10.1080/09571264.2022.2110050

Dominici, A., Boncinelli, F., Gerini, F. and Marone, E. (2020), "Consumer preference for wine from hand-harvested grapes" British Food Journal, 122(8), 2551-2567. DOI: 10.1108/BFJ-04-2019-0301

EU Commission, (2014). ASSOCIATION AGREEMENT between the European Union and the European Atomic Energy Community and their Member States, of the one part, and Georgia, of the other part. Official Journal of the European Union, available at: https://eur-lex.europa.eu/leg , accessed on 10.03.2023.

Galati, A., Schifani, G., Crescimanno, M., Migliore, G. (2019). "Natural Wine" consumers and interest in label information: An analysis if willingness to pay in a new Italian wine market segment"Journal of Cleaner Production. 227, 405-413 DOI: 10.1016/j.jclepro.2019.04.219

Georgia Ministry of Environmental Protection and Agriculture, (2022), The Annual Report 2021, available at: https://mepa.gov.ge/Ge/Reports , accessed on 10.04.2023.

GeorgiaDCFTA, (2022). Georgia on the European Road: Creating an Effective Model for DCFTA and Small and Medium Enterprises Strategy Implementation, available at: http://www.georgiadcfta.ge/files/downloads/dcfta_toolkit_geo_version_final.pdf, accessed on 20.03.2023.

Grand View Research (2023). Organic Wine Market Size, Share & Trends Analysis Report By Type (Red Organic Wine, White Organic Wine), By Distribution Channel (On-trade, Off-trade), By Region, And Segment Forecasts, 2022 – 2030, available at: https://www.grandviewresearch.com/industry-analysis/organic-wine-market-report, accessed on 15.04.2023.

Jacoby, J. (2002), "Stimulus-organism-response reconsidered: an evolutionary step in modeling (consumer) behaviour" Journal of consumer psychology, 12(1), 51-57.

Janssen, M., SchÃufele, I., Zander, K. (2020), "Target groups for organic wine: The importance of segmentation analysis" Food Quality and Preference, 79, 103785. DOI: 10.1016/j.foodqual.2019.103785.

Khachapuridze, Z. (2021), "Georgia's organic wine opportunity" Analytical Busienss Magazine, available at: https://www.investor.ge/2021/04/22/georgias-organic-wine-opportunity/ , accessed on 10.03.2023.

Kharaishvili, E. (2017), "Wine Market and Competitive Models of Diversification of the Viticulture-Winemaking Industry in Georgia" Universali, available at: https://tsu.ge/assets/media/files/7/biblioteka/gvinis%20baz.pdf , accessed on 01.03.2023.

Kharaishvili. E., Lazariashvili, T., Natsvlishvili, I. (2019), "Global experience of bio product market and its challenges in Georgia in the context of sustainable well-being" Business Systems Laboratory - 6th International Symposium Borders without Borders.

LEPL Scientific-Research Center of Agriculture (SRCA). (2023). Report of the Scientific Research Center of Agriculture, available at: https://srca.gov.ge/public_info/reports , accessed on 12.04.2023.

Lu, L., Chi, C.G.-Q. and Zou, R. (2019), "Determinants of Chinese consumers' organic wine purchase" International Journal of Contemporary Hospitality Management, 31(9), 3761-3778. DOI: 10.1108/IJCHM-02-2019-0118

Maesano, G., Di Vita, G., Chinnici, G., Gioacchino, P., & D'amico M. (2021), "What's in organic wine consumer mind? A review on purchasing drivers of organic wines" Wine Economics and Policy, 10(1), 3-21. DOI: /10.36253/wep-9101

Moscovici, D., Gow, J., Ugaglia, A. A., Rezwanul, R., Valenzuela, L., & Mihailescu, R. (2022). "Consumer preferences for organic wine-Global analysis of people and place" Journal of Cleaner Production, 368, 133215.

National Statistics Office of Georgia, (2022). Georgian Wine Industry Segment, available at: https://www.geostat.ge/media/46404/soflis_meurneoba_2021.pdf , accessed on 12.03.2023.

Rabadan, A., Bernabeu, R. (2021), "An approach to eco-innovation in wine production from a consumer's perspective" Journal of Cleaner Production, 310, 127479. DOI: 10.1016/j.jclepro.2021.127479

Stolz, H., Schmid, O. (2008), "Consumer attitudes and expectations of organic wine" 16th IFOAM Organic World Congress.

Sultan, P., Wong, H. Y., & Azam, M. S. (2021), "How perceived communication source and food value stimulate purchase intention of organic food: An examination of the stimulus-organism-response (SOR) model" Journal of Cleaner Production, 312, 127807.

Tandon, A., Jabeen, F., Talwar, S., Sakashita, M., & Dhir, A. (2021), "Facilitators and inhibitors of organic food buying behaviour" Food Quality and Preference, 88, 104077.

# BLOCKCHAIN-DRIVEN OPEN INNOVATION: HOW DO MANAGERIAL TIES AND ABSORPTIVE CAPACITY MATTER FOR INNOVATIVE PERFORMANCE? EMPIRICAL EVIDENCE FROM THE ITALIAN WINE INDUSTRY

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## ABSTRACT

The present study aims to investigate how managerial ties and absorptive capacity facilitates open innovation, and promote innovative performance in the wine industry that already adopted and implemented blockchain as an innovative technology. In this study, we adopt the absorptive capacity theory to pursue the research objectives, and a multiple case study approach was adopted and conducted in five Italian wineries, and also in one technology provider company. The research findings by providing empirical evidence on the characteristics of the wine firms and the reasons that led to invest and adopt blockchain highlighted the valuable linkage between managerial ties and absorptive capacity to facilitate open innovation in adopting new technology and enhancing the innovative performance of the wine firms. In addition, empirical evidence is provided on the economic and marketing impacts of the implementation of blockchain. Hence, the research finding to provide incentives for wine firms to execute open innovation and utilize the blockchain which is a key component to achieving competitive advantage.

## 1. INTRODUCTION

Today's turbulent environment forces organizations to constantly create and maintain competitive advantages to ensure their existence. In this regard and in recent years, the concept of open innovation is attracting the attention of experts in the innovation and management field to discover and use new opportunities to strengthen competitive advantages (Gul et al, 2023). Meanwhile, the quality of firms' strategic decisions depends on managers' qualifications and experience, including the development of intangible assets such as managerial ties that are a decisive element in acquiring market resources for their survival (Bashir et al, 2023; Naqshbandi and Jasimuddin 2022).

Previous research suggests that absorptive capacity facilitates open innovation (Bhadauria and Singh, 2023; Novino, 2023; Cuevas-Vargas, 2022; Jasimuddin and Naqshbandi,2019), and is a critical factor for firm innovation performance (Fan et al, 2023; Zhou, 2022; Chang et al, 2012; Benhayoun et al, 2021).

The absorptive capacity theory (Cohen and Levinthal, 1990; Zahra and George, 2002) improves the market orientation–innovation linkages (Wang and Chung 2013), have a significant impact on knowledge exchange, and knowledge combination (Shu et al, 2012), and consequently effect on firm innovation, as well as, facilitating business model innovations (Bashir et al, 2023).

However, very few studies explored the role of managerial ties on the absorptive capacity and their engagement with open innovation and innovative performance in a holistic view. In recent years, the adoption of new technologies, including blockchain, offers as a solution to address structural issues such as lack of innovation in the agri-food sector (Martínez-Castañeda et al, 2023). Being the fragment of open innovation and technological prospects, blockchain establishes a larger extent of flexibility and distribution of authority which can establish favorable settings for open innovation (Gul et al, 2023).

In this scenario, the present research investigates the critical role of managerial ties and absorptive capacity (AC) on facilitate the Open Innovation (OI) and fostering innovative performance by implementing blockchain as an innovative technology.

Our study focuses on the wine industry, recognized as a low-tech industry that faces multiple challenges (Pérez-Luñon et al, 2022). The socioeconomic context of wine is evolving at a rapid pace, and new requirements are forcing companies to innovate in order to remain competitive in the markets (Sánchez-García et al, 2023). Investigation of innovation in the wine industry in the literature reveals that absorptive capacity and technology adoption positively correlate with innovation efforts (Dogru and Peyrefitte, 2022). Innovation and the creative use of technological advances have become an unavoidable necessity for the survival of the wine industry (Sigala, 2023), and managerial skills and absorptive capacity in wine firms improve dynamic capabilities to implementing innovative technologies such as blockchain (Galati et al., 2021).

The present study by providing empirical evidence of wine firms adopting blockchain in Italy, makes an important contribution to discover the research value of managerial ties and absorptive capacity relations for facilitating and executing open innovation. In addition, it highlights the economic and marketing impacts of implementing blockchain on wine firms. Therefore, it provides a new management perspective for companies' technology innovation practice in the wine industry.

## 2. RESEARCH METHODOLOGY

To address our research aim we adopted a qualitative empirical research based on a multiple cases study approach. This method is appropriate when analyzing an emerging phenomenon in its uniqueness, as part of a particular scenario and of its interactions in order to define the boundaries of

the phenomenon in the context in which it develops (Patton, 1985; Yin 1984; Yin, 2003). Specifically, we focused five Italian case studies which adopt the blockchain technology to understand how a contemporary phenomenon takes place and, in particular, how the process of implementing a technological innovation, as the BCT, is managed and organized (De Massis and Kotlar, 2014). Taking into account that one of the main obstacles of qualitative approaches is linked to the inability to generalize the results, the triangulation technique was used, by referring to  multiple sources of information and removing any biases generated by  the researchers' subjectivity (Teegavarapu et al., 2008). Therefore, we relied on primary and secondary data sources by using the triangulation of the data (Eisenhardt & Graebner, 2007). In our study, we selected five wineries as our case studies. The interviews were conducted by taking into account the theoretical approach adopted. Then, archival data from press releases, articles in specialized magazines, articles on the web, speeches with experts, etc., were used as secondary sources for data triangulation. The Gioia methodology (Gioia et al., 2013) has been finally exploited for qualitative data analysis and to satisfy the rigorous standards of trustworthy research (De Massis and Kotlar, 2014).

## 3. RESEARCH FINDINGS

In this section, we will illustrate the main empirical results. The research findings indicated that wineries that implemented blockchain as an innovative technology, effectively manage the information that they gathered from external parties. They are in constant contact with their target consumers and gather data, also they use Pink Road Abbey's analysis of social networks.

The innovative winiries register the ideas developed in the firm in a patent system called X Farms. In addition, it was found that the interactions that managers have at the level of the sales network and meetings with commercial parks at a national level, with GTO, and participation in Vinitaly, expand the level of absorptive capacity and acquiring technology.

Our findings on the motivations that led to the adoption of blockchain hint that the main reasons are as follows: i) implementation of an ethical supply chain, to prove and guarantee the quality of wine, ii) the possibility of insuring the firm against climate damage, iii) providing added value to the consumer, for transparency, authenticity, and iv) finally to reduce the problems of fraud. From the results, it is clear that the wineries rely on external companies in terms of the financial and human resources necessary for the adoption of blockchain. In terms of the methods of implementation of blockchain, some winiries use scalable platforms before testing and going on a big scale.

A further novel finding is that all of the winiries adopted public blockchains, such as Ethereum, and Polygon Aromatic. The wineries use blockchain exclusively in the field and in the cellar: monitoring

all the parts concerning the vineyard, the movements in the cellar, the transformation of the grapes into wine, the amount of sulfur dioxide, and bottling the wine until it arrives on the shelf.

Furthermore, the key findings emerge on investment and the implementation cost of the blockchain platform that shows it depends on the complexity and length of the supply chain model and the level of its execution. And also, additional options such as multilingual translation with artificial intelligence. It will be expensive from an operational standpoint for all members involved in the supply chain. However, wineries emphasized the necessity of more investment in blockchain in their growth phase.

Our findings highlight the economic and environmental impacts of blockchain, some managers believe that the blockchain economic return is difficult to evaluate from an economic point of view. Other managers believe that blockchain impact is not something like a financial return but a return in communication and transparency. Meanwhile, the exclusion of fraud companies from the supply chain has been stated as a reason for certainly of blockchain economic return. In terms of environmental impact, the majority of wineries use eco-friendly packaging, and, certifications.

And finally, the research findings show that the main foreign markets interested in blockchain-based wine products respectively are as follows, Northern Europe, Sweden, Denmark, Switzerland, Belgium, Holland, and also Germany, the UK, the United States, and Japan. In addition, Eastern Europe, Bulgaria, Poland, China, Korea, Israel, Brazil, Japan, Australia, and part of Africa.

## 4. CONCLUSIONS

The findings show that blockchain adoption is still in its infancy. The adoption of the technology only in the grape and wine production phases underlines the difficulty of adopting it to the entire supply chain due to the lack of creating a network. The study also confirms the validity of the theoretical lens chosen to explain the implementation of the technology. The manager's ability to acquire relevant information from the external environment and the ability to capitalize on this information, also by making use of external companies, is fundamental for an effective adoption of the technology. Although the results of the study are not generalizable, they nevertheless offer a clear picture of the current use of BCT, the obstacles to its implementation, and the opportunities offered.

# REFERENCES

Bashir, M., Alfalih, A., and Pradhan, S. (2023), "Managerial ties, business model innovation and SME performance: Moderating role of environmental turbulence", Journal of Innovation and Knowledge, Vol. 8, No. (1), pp. 100329-100452.

Bhadauria, S., and Singh, V. (2023), "Blending absorptive capacity with open innovation: a bibliometric review", Benchmarking: An International Journal, Vol.30, No. (4), pp.1110-1136.

Cuevas-Vargas, H., Aguirre, J., and Parga-Montoya, N. (2022), "Impact of ICT adoption on absorptive capacity and open innovation for greater firm performance. The mediating role of ACAP", Journal of Business Research, Vol. 140, pp. 11-24.

Dogru, A., and Peyrefitte, J. (2022), "Investigation of innovation in wine industry via meta-analysis", Wine Business Journal, Vol. 5, No. (1), pp. 44-76.

Fan M, Huang W, Xiong S. (2023), "How enterprise interactions in innovation networks affect technological innovation performance: The role of technological innovation capacity and absorptive capacity", PLoS ONE, Vol. 18, No. (3), pp. 282-294.

Galati, A., Vrontis, D., Giorlando, B., Giacomarra, M., and Crescimanno, M. (2021), "Exploring the common blockchain adoption enablers: the case of three Italian wineries", International Journal of Wine Business Research, Vol. 33, No. (4), pp. 578-596.

Gul, I., Khan, N. R., and Ghouri, A. M. (2023), "Blockchain-Driven Supply Chain Management and Open Innovation", In Blockchain Driven Supply Chain Management: A Multi-dimensional Perspective (pp. 135-154). Singapore: Springer Nature Singapore.

Martínez-Castañeda, M., and Feijoo, C. (2023), "Use of blockchain in the agri-food value chain: State of the art in Spain and some lessons from the perspective of public support", Telecommunications Policy, pp.102574.

Naqshbandi, M. M., and Jasimuddin, S. M, (2022), "The linkage between open innovation, absorptive capacity and managerial ties: A cross-country perspective", Journal of Innovation and Knowledge, Vol. 7, No. (2), pp. 100-167.

Novino, M. (2023), "The mediating role of absorptive capacity on innovation among technology business incubators in the Philippines", Rajagiri Management Journal, Vol. 17, No. (2), pp. 125-137.

Pérez-Luño, A., del Cubo, A., and Cabello-Medina, C. (2022). Open innovation in the wine industry before and during the Covid-19 pandemic. The role of digitalization. In the book abstract.

# DID A LITTLE FUN IN THE WORKPLACE EVER HURT ANYBODY?

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## ABSTRACT

Fun at work has increasingly captured the attention of managers and researchers in various fields for its positive impact. Benefits such as attracting employees, mental health benefits, organizational commitment and engagement have been identified (Bolton & Houlihan, 2009). However, workplace fun can also bring some disadvantages to both the company and the employees (Tews et al., 2019). These types of activities can increase stress levels, cause distractions, promote divergence between colleagues, as well as unwanted sexual attention (Tews et al., 2019).

Humour, for example, an aspect that arises from fun at work (Michel et al., 2019) may be perceived by some employees as harmless, but for others it may be considered inappropriate, hurtful, or even considered as a violent act or sexual harassment (Bilginoğlu, 2020). Racist and sexual jokes damage the organisation and are an example of harmful humour. If this kind of humour turns into an aggressive and continuous attitude towards an individual or group, it can be a form of moral harassment (Hirigoyen, 2008).

The present study aims, firstly, to understand whether fun at work can bring benefits for employees' performance, in other words, if employees who work in organizations that promote fun activities report a perceived high level of task performance. Secondly, this study also aims to determine whether perception of moral harassment mediates that relationship, and if the level of work engagement moderates the effect of fun at work on perception of moral harassment.

A quantitative study was carried out and an online questionnaire was applied that had 459 valid responses from Portuguese employees. With a mean age of 39 years old (SD=11.7), 83.7% participants are female. To measure Fun at Work we adapted the 7-items scale proposed by Tews, Michel, and Allen (2014). The participants indicated how frequently each activity occurred with a five-point scale ranging from 1 = never to 5 = all the time ($\alpha$ = .88). To measure Moral Harassment we used the Negative Acts Questionnaire-Revised (NAQ-R) proposed by Einarsen and Hoel (2009), with 22 items, measuring exposure to bullying within the last 6 months, in with the response alternatives: ''Never,'' ''Now and then,'' ''Monthly,'' ''Weekly'' and ''Daily'' ($\alpha$ = .86). Task Performance was measured with the William

and Andersen (1991) scale with 7 items, which showed a high internal consistency ($\alpha$ = .89). A five-point Likert-type response scale was used, ranging from 1 (totally disagree), to 5 (totally agree). Finally, Work Engagement was measured using the 3-itens' Utrecht Work Engagement Scale developed by Schaufeli et al. (2019) also with a high internal consistency ($\alpha$ = .88). For work engagement we used a seven-point Likert-type response scale, ranging from 1 (totally disagree), to 7 (totally agree).

Descriptive analyses suggested low levels of participation in activities of fun (M=1.93; SD=0.68) and perceptions of moral harassment (M=1.42; SD=0.45). On the other hand, participants presented high levels of work engagement (M=5.38; SD=1.41) and task performance (M=4.47; SD=0.46). Results also showed significant differences between gender on the participation of fun activities (t= 4.96; p < 0.001) whereas men usually participate more than women. We also found differences in terms of participants' age. Thus, younger participants are keener to participate rather the older ones (F=8.86; p < 0.001). Previous literature is not consensual regarding differences between gender. Ford et al (2003) found that women present higher levels and Barnett and Hyde (2001) found no differences. Concerning age differences our results are in line with Becker and Tews (2016). Since a significant relation between fun at work and task performance was not found (p>0.05), it was not possible to analyze the main goal of the study. Although our results are not in line with the literature, maybe fun at work has a higher influence on extra role performance. Future studies could verify this hypothesis.

We then performed some complementary analyzes, it was possible to verify that there is a moderating effect of engagement on the relation between fun at work and the participants' perception of moral harassment (p=0.028). In this sense, if the employee has a perception of moral harassment in a fun environment, this can be mitigated by high levels of work engagement. Engagement has a positive effect on the employee, contributing to the employee's health and health and social functioning (Schaufeli et al., 2008). According to Sonnentag et al. (2008) engagement is negatively related to negative affect and positively related to positive affect. Thus, if an employee has high engagement values, he/she tends to focus less on negative events, generating a state of positive affect called the spillover effect (Edwards & Rothbard 2000).

Our results also suggested a significant and negative relation between fun at work and moral harassment (B=-0.18; p<0.05), and a significant and positive relation between fun at work and engagement (B=0.43; p<0.05). These results can be explained by the Social Exchange Theory (Blau, 1965). These results are relevant for managers and organizational change agents who intend to implement fun in their organizations. Managers who want to implement fun at work in their organizations must be more aware of the emergence of negative effects such as moral harassment and get to know their environment better. However, if such effects do occur, managers can use resources to increase employee engagement levels to mitigate the negative consequences of moral harassment.

These results allow managers to pay attention to the characteristics of their workforce and to create more tailored policies.

*Keywords: Fun at Work; Task Performance; Work Engagement; Moral Harassement*

## REFERENCES

Bilginoğlu, E. (2020) "'Debunking the myths of workplace fun'", Middle East J. Management, Vol. 7, No. 2, pp.150–165

Blau, P. (1965). "Exchange and Power in Social Life". American Sociological Review. (Vol. 30 No.5)

Bolton, S. C., and Houlihan, M. (2009). "Are we having fun yet? A consideration of workplace fun and engagement". Employee Relations, Vol. 31 No. 6, pp. 556-568. https://doi.org/10.1108/01425450910991721

Einarsen, S., Hoel, H., and Notelaers, G. (2009). "Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised". Work & Stress, Vol. 23 No. 1, pp. 24-44. https://doi.org/10.1080/02678370902815673

Ford, R, McLaughlin, F. and Newstrom, J. (2003). "Questions and Answers about Fun at Work". Human Resource Planning, Vol. 26 No. 4, pp. 18-33.

Hirigoyen, M.F. (2008). Assédio moral: a violência perversa no cotidiano (10a ed.). Rio de Janeiro: Bertrand Brasil

Michel, J. W., Tews, M. J., and Allen, D. G. (2019). "Fun in the workplace: A review and expanded theoretical perspective". Human Resource Management Review, Vol. 29 No. 1, pp. 98-110. doi:10.1016/j.hrmr.2018.03.001

Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., and De Witte, H. (2019). "Na ultra-short measure for work engagement: The UWES-3 validation across five countries". European Journal of Psychological Assessment, Vol. 35 No. 4, pp. 577. https://doi.org/10.1027/1015-5759/a000430

Sonnentag, S., Mojza, E. J., Binnewies, C., and Scholl, A. (2008). "Being engaged at work and detached at home: A week-level study on work engagement, psychological detachment, and affect". Work & Stress, Vol. 22 No. 3, pp. 257-276. https://doi.org/10.1080/02678370802379440

Tews, M. J., Michel, J. W., and Allen, D. G. (2014). "Fun and friends: the impact of workplace fun and constituent attachment on turnover in a hospitality context". Human Relations, Vol. 67 No. 8, pp. 923-946. DOI: 10.1177/0018726713508143

Tews, M.J., Stafford, K. and Jolly, P.M. (2019). "The dark side? Fun in the workplace and unwanted sexual attention". Employee Relations, Vol. 4 No. 6, pp. 1162-1182. doi:10.1108/ER 06- 2018-016

Williams, Lex. J., and Anderson, S. E. (1991). "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors". Journal of Management, Vol. 17 No. 3, pp. 601–617. https://doi.org/10.1177/0149206391017003

# FAKING AND LYING DURING JOB INTERVIEW AND ITS RELATIONSHIP WITH ORGANIZATIONAL ATTRACTIVENESS

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## ABSTRACT

Fun at work has increasingly captured the attention of managers and researchers in various fields for its positive impact. Benefits such as attracting employees, mental health benefits, organizational commitment and engagement have been identified (Bolton & Houlihan, 2009). However, workplace fun can also bring some disadvantages to both the company and the employees (Tews et al., 2019). These types of activities can increase stress levels, cause distractions, promote divergence between colleagues, as well as unwanted sexual attention (Tews et al., 2019).

Humour, for example, an aspect that arises from fun at work (Michel et al., 2019) may be perceived by some employees as harmless, but for others it may be considered inappropriate, hurtful, or even considered as a violent act or sexual harassment (Bilginoğlu, 2020). Racist and sexual jokes damage the organisation and are an example of harmful humour. If this kind of humour turns into an aggressive and continuous attitude towards an individual or group, it can be a form of moral harassment (Hirigoyen, 2008).

The present study aims, firstly, to understand whether fun at work can bring benefits for employees' performance, in other words, if employees who work in organizations that promote fun activities report a perceived high level of task performance. Secondly, this study also aims to determine whether perception of moral harassment mediates that relationship, and if the level of work engagement moderates the effect of fun at work on perception of moral harassment.

A quantitative study was carried out and an online questionnaire was applied that had 459 valid responses from Portuguese employees. With a mean age of 39 years old (SD=11.7), 83.7% participants are female. To measure Fun at Work we adapted the 7-items scale proposed by Tews, Michel, and Allen (2014). The participants indicated how frequently each activity occurred with a five-point scale ranging from 1 = never to 5 = all the time ($\alpha$ = .88). To measure Moral Harassment we used the Negative Acts Questionnaire-Revised (NAQ-R) proposed by Einarsen and Hoel (2009), with 22 items, measuring exposure to bullying within the last 6 months, in with the response alternatives: ''Never,'' ''Now and

then,'' ''Monthly,'' ''Weekly'' and ''Daily'' ($\alpha$ = .86). Task Performance was measured with the William and Andersen (1991) scale with 7 items, which showed a high internal consistency ($\alpha$ = .89). A five-point Likert-type response scale was used, ranging from 1 (totally disagree), to 5 (totally agree). Finally, Work Engagement was measured using the 3-itens' Utrecht Work Engagement Scale developed by Schaufeli et al. (2019) also with a high internal consistency ($\alpha$ = .88). For work engagement we used a seven-point Likert-type response scale, ranging from 1 (totally disagree), to 7 (totally agree).

Descriptive analyses suggested low levels of participation in activities of fun (M=1.93; SD=0.68) and perceptions of moral harassment (M=1.42; SD=0.45). On the other hand, participants presented high levels of work engagement (M=5.38; SD=1.41) and task performance (M=4.47; SD=0.46). Results also showed significant differences between gender on the participation of fun activities (t= 4.96; p < 0.001) whereas men usually participate more than women. We also found differences in terms of participants' age. Thus, younger participants are keener to participate rather the older ones (F=8.86; p < 0.001). Previous literature is not consensual regarding differences between gender. Ford et al (2003) found that women present higher levels and Barnett and Hyde (2001) found no differences. Concerning age differences our results are in line with Becker and Tews (2016). Since a significant relation between fun at work and task performance was not found (p>0.05), it was not possible to analyze the main goal of the study. Although our results are not in line with the literature, maybe fun at work has a higher influence on extra role performance. Future studies could verify this hypothesis.

We then performed some complementary analyzes, it was possible to verify that there is a moderating effect of engagement on the relation between fun at work and the participants' perception of moral harassment (p=0.028). In this sense, if the employee has a perception of moral harassment in a fun environment, this can be mitigated by high levels of work engagement. Engagement has a positive effect on the employee, contributing to the employee's health and health and social functioning (Schaufeli et al., 2008). According to Sonnentag et al. (2008) engagement is negatively related to negative affect and positively related to positive affect. Thus, if an employee has high engagement values, he/she tends to focus less on negative events, generating a state of positive affect called the spillover effect (Edwards & Rothbard 2000).

Our results also suggested a significant and negative relation between fun at work and moral harassment (B=-0.18; p<0.05), and a significant and positive relation between fun at work and engagement (B=0.43; p<0.05). These results can be explained by the Social Exchange Theory (Blau, 1965). These results are relevant for managers and organizational change agents who intend to implement fun in their organizations. Managers who want to implement fun at work in their organizations must be more aware of the emergence of negative effects such as moral harassment and get to know their environment better. However, if such effects do occur, managers can use resources to

increase employee engagement levels to mitigate the negative consequences of moral harassment. These results allow managers to pay attention to the characteristics of their workforce and to create more tailored policies.

*Keywords: Job Interview; Faking and Lying; Deceptive Impression Management; Organizational Attractiveness*

## REFERENCES

Bilginoğlu, E. (2020) "'Debunking the myths of workplace fun'", Middle East J. Management, Vol. 7, No. 2, pp.150–165

Blau, P. (1965). "Exchange and Power in Social Life". American Sociological Review. (Vol. 30 No.5)

Bolton, S. C., and Houlihan, M. (2009). "Are we having fun yet? A consideration of workplace fun and engagement". Employee Relations, Vol. 31 No. 6, pp. 556-568. https://doi.org/10.1108/01425450910991721

Einarsen, S., Hoel, H., and Notelaers, G. (2009). "Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised". Work & Stress, Vol. 23 No. 1, pp. 24-44. https://doi.org/10.1080/02678370902815673

Ford, R, McLaughlin, F. and Newstrom, J. (2003). "Questions and Answers about Fun at Work". Human Resource Planning, Vol. 26 No. 4, pp. 18-33.

Hirigoyen, M.F. (2008). Assédio moral: a violência perversa no cotidiano (10a ed.). Rio de Janeiro: Bertrand Brasil

Michel, J. W., Tews, M. J., and Allen, D. G. (2019). "Fun in the workplace: A review and expanded theoretical perspective". Human Resource Management Review, Vol. 29 No. 1, pp. 98-110. doi:10.1016/j.hrmr.2018.03.001

Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., and De Witte, H. (2019). "Na ultra-short measure for work engagement: The UWES-3 validation across five countries". European Journal of Psychological Assessment, Vol. 35 No. 4, pp. 577. https://doi.org/10.1027/1015-5759/a000430

Sonnentag, S., Mojza, E. J., Binnewies, C., and Scholl, A. (2008). "Being engaged at work and detached at home: A week-level study on work engagement, psychological detachment, and affect". Work & Stress, Vol. 22 No. 3, pp. 257-276. https://doi.org/10.1080/02678370802379440

Tews, M. J., Michel, J. W., and Allen, D. G. (2014). "Fun and friends: the impact of workplace fun and constituent attachment on turnover in a hospitality context". Human Relations, Vol. 67 No. 8, pp. 923-946. DOI: 10.1177/0018726713508143

Tews, M.J., Stafford, K. and Jolly, P.M. (2019). "The dark side? Fun in the workplace and unwanted sexual attention". Employee Relations, Vol. 4 No. 6, pp. 1162-1182. doi:10.1108/ER 06- 2018-016

Williams, Lex. J., and Anderson, S. E. (1991). "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors". Journal of Management, Vol. 17 No. 3, pp. 601–617. https://doi.org/10.1177/0149206391017003

# ETHICAL INTENSITY, PERCEIVED CONSUMER VALUE AND INTENTION TO RENT CLOTHING ONLINE IN THE CIRCULAR SOCIETY

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## ABSTRACT

Fast fashion industry is one of the biggest polluting industries in the world (Fashion Innovation, 2022) and has become a huge problem for policy makers to achieve sustainability goals by 2050 (European Commission, 2022). Recent research suggests a growing interest in so called 'slow fashion', which refers to goods that create economic, environmental and social benefits to society (e.g., Domingos *et al.,* 2022; Castro-López *et al.,* 2021). One of the slow fashion directions refers to the clothing rent online, which has recently become very popular among international clothing brands (Marketing Week, 2021).

Although policy makers and business leaders in the most developed countries are currently attempting to encourage society to reduce pollution from the fast fashion industry and decrease waste from overconsumption, many individuals are not convinced about the value to consumers (e.g., Sener *et al.,* 2022) from engaging in circular consumption in the case of slow fashion (Fashion Innovation, 2022). Thus, a situation where readiness for circular consumption and perceived consumer value do not match requires further attention from academics.

Ethical intensity (e.g., Hassan *et al.,* 2022) and perceived consumer value (e.g., Jung and Jin, 2016) have been among the most important factors when researching unethical behaviour of individuals. However, research on ethical intensity, perceived consumer value and their links with positive ethical decision-making (e.g., De Bakker *et al.,* 2019) has been scarce.

This study aims to propose a unique theoretical model, which is expected to contribute to the growing body of knowledge on ethical intensity and perceived consumer value in the consumer behaviour and business ethics field.

The objectives of the paper are as follows: (1) provide a justification for the relevance of circular consumption for today's society and identify research priorities; (2) define concepts of ethical intensity, perceived consumer value and intention to rent clothing online; (3) theoretically justify relationships among the proposed constructs of ethical intensity, perceived consumer value and intention to rent clothing online; (4) based on the above constructs, prepare a conceptual model to be further empirically tested in the future studies. By doing so, this study attempts to contribute to the growing body of knowledge on ethical intensity and perceived consumer value in the consumer behaviour and business ethics fields.

Specifically, the model proposes that the construct of 'ethical intensity', which is defined as the important characteristics of an issue and may influence the ethical consumer decision-making process (e.g., Hassan *et al.*, 2022; De Bakker *et al.*, 2019) acts as an antecedent to another construct, namely, 'perceived consumer value', that is defined as the evaluation of the benefits relative to their sacrifice (e.g., Jung and Jin, 2016) that circular consumption conscious individuals will receive from renting clothing online. Furter, perceived value is linked to the 'intention' of circular consumption conscious individuals to rent clothing online and is proposed to act as a mediator between ethical intensity and intention to rent clothing online.

Concluding, the authors put forward two theoretical propositions to be further empirically tested in future studies:

> *P1: Ethical intensity acts as an antecedent to a perceived consumer value when renting clothing online in the context of circular consumption.*

> *P2: Perceived consumer acts as a mediator between ethical intensity and intention to rent clothing online in the context of circular consumption.*

Based on the above, the following theoretical implications can be offered to researchers and academics: First, a novel conceptual model has been offered that combines important constructs, such as ethical intensity, perceived value and intention to rent clothing online, in a unique way. The proposed unique model combines those constructs in a novel way that has not been considered before in previous research. Given the importance of ethical intensity and perceived value in today's circular society, it is crucial to consider this relationship in the conceptual model.

Second, the authors propose two theoretical propositions that may be tested in future empirical studies. Those propositions will pave the way for a better theoretical and practical understanding of ethical intensity as an antecedent and perceived consumer value as a moderator in the context of online renting services in the clothing industry.

Practical implications will be clarified after an empirical study has been conducted in the future, but some practical implications emerge from both conceptual model and theoretical propositions. Since the theoretical model proposes that ethical intensity plays an important role in changing perceived consumer value when intending to rent clothing online, managers and public policy makers may increase perceived consumer value by manipulating ethical intensity among circular consumption conscious consumers. However, it cannot be forgotten that ethical intensity may also decrease perceived consumer value, thus it requires careful management.

Based on the above, both theoretical and practical implication may be of use to business leaders and public policy makers as the conceptual model provides guidance on how to increase perceived consumer value among circular consumption conscious individuals by employing ethical intensity,

while theoretical implications will contribute to the body of knowledge on ethical intensity and perceived value relationship in the consumer behaviour and business ethics field.

*Keywords: ethical intensity, perceived consumer value, clothing rent, circular society, online environment, ethically responsible consumer*

## ACKNOWLEDGEMENTS

## REFERENCES

De Bakker, F.G. Rasche, A. and Ponte, S. (2019), "Multi-stakeholder initiatives on sustainability: A cross-disciplinary review and research agenda for business ethics", Business Ethics Quarterly, Vol 29 No 3, pp. 343-383.
Castro-López, A. Iglesias, V. and Puente, J. (2021), "Slow fashion trends: are consumers willing to change their shopping behavior to become more sustainable?", Sustainability, Vol 13 No 24, 13858.
Domingos, M. Vale, V. T. and Faria, S. (2022), "Slow fashion consumer behavior: A literature review", Sustainability, Vol 14 No 5, 2860.
Dyllick, T. and Rost, Z. (2017), "Towards true product sustainability", Journal of Cleaner Production, Vol. 162 No 1, pp. 346-360.
Hassan, S. M., Rahman, Z. and Paul, J. (2022), "Consumer ethics: a review and research agenda", Psychology & Marketing, Vol 39 No 1, pp. 111-130.
European Commission (2022), "Circular economy action plan", available at: https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en (accessed 23 January 2023).
Fashion Innovation (2022), "Fashion industry statistics: the 4th biggest sector is way more than just about clothing", available at https://fashinnovation.nyc/fashion-industry-statistics/ (accessed 25 January, 2023).
Jung, S. and Jin, B. (2016), "Sustainable development of slow fashion businesses: customer value approach", Sustainability, Vol 8 No 6, 540.
Market Watch (2021), "Online clothing rental market 2022", available at: https://www.marketwatch.com/press-release/online-clothing-rental-market-2022-size-share-growth-analysis-by-top-countries-data-by-top-players-applications-forecast-till-2030-2021-12-01 (accessed 25 January, 2023).
Şener, T. Bişkin, F. and Dündar, N. (2022), "The effects of perceived value, environmental concern and attitude on recycled fashion consumption", Journal of Fashion Marketing and Management: An International Journal, (ahead-of-print), pp. 1-17.

# JUSTIFICATION OF THE FOCUS OF PERFORMANCE AUDIT CONDUCTED BY THE SUPREME AUDIT INSTITUTION ON THE CREATION OF PUBLIC VALUE

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## ABSTRACT

Supreme Audit Institutions conduct performance audits to assess the performance of public entities from a 3E perspective. The work of Supreme Audit Institutions is associated with the creation of public value, i.e., these institutions provide results on the creation of public value as part of their accountability for their activities (Cordery and Hay, 2018). Scientific literature identifies four classic forms of performance audit impact: instrumental, conceptual, interactive, and political-legitimacy, as well as tactical impact (Van Loocke and Put, 2011). As research on the impact of performance auditing has progressed, new forms of impact have been identified, namely the impact on users (Arthur et al., 2012), impact on well-being (Irawan and Mcintyre-Mills, 2016), and impact from the perspective of user satisfaction (Banushi, 2019). Building upon Cordery and Hay's (2018) theory, the research question arises as to whether the performance auditing performed by Supreme Audit Institutions has an impact on the creation of public value.

The study aims to demonstrate that performance audits focus on public value creation, i.e., they impact the creation of public value. To achieve this aim, three objectives were implemented. The first objective is to provide a definition of public value. In scientific literature, criteria of public value were identified (Alford & Hughes, 2008; Bracci et al., 2021; Hartley et al., 2017; Hay & Cordery, 2018; Jain Gupta & Suri, 2017; Meynhardt, 2014; Meynhardt & Bäro, 2019; Moore, 1994; Puron-Cid et al., 2008; Talbot, 2017; Truss, 2019). Hence, public value is the effective, efficient, impartial, fair and transparent performance of public organisations, programs, and policies for the benefit of society and in the interests of stakeholders. It involves making efficient use of available resources, promoting engagement, creating a mutually reflective relationship, and ensuring democratic values and a general sense of well-being.

The second objective is to develop a system for evaluating public value. The developed system for evaluating public value is based on the works of Moore (2003), Puron-Cid et al. (2008), Talbot (2017), Hartley et al. (2017), Jain Gupta and Suri (2017), Deng et al. (2018), Meynhardt and Bäro (2019), Truss (2019), Valle-Cruz (2019), Zavattaro and Brainard (2019), Gross Lopes et al. (2019), Bracci et al. (2021),

and others. This system consists of four evaluation directions: strategy, governance, users and society, and supply chain (Figure 1).

Figure 1. System of the elements of the creation of public value

| I. Strategy | II. Governance | III. Users and society | IV. Supply chain |
|---|---|---|---|
| Mission and objectives | Management of financial resources | Benefits to society | Optimization |
| Planning | Information management | Participation and engagement | Functionality |
| | Legal acts, regulations | Society shaping | Information |
| | Responsibilities | Legitimacy | Interest groups |
| | Accountability | Fairness | Resource management |
| | Data | | Impact |
| | Functions | | Prevention |
| | Control | | Supervision |
| | Legislation | | Monitoring |
| | Asset management | | Supply chain management |
| | Performance | | Human Resources |

The third objective was to identify which elements of the public value creation system were assessed in performance audit reports conducted by Supreme Audit Institutions. Using the developed coding system, an analysis of the content of recommendations provided in the performance audit reports conducted by Lithuania Supreme Audit Institutions from 2015 to 2022 was performed. A total of 114 reports were analysed, representing a sample of 100%. When coding the content, segments were assigned to one of four code groups: "Strategy" had 70 content segments, "Governance" had 427 segments, "Users and Society" had 92 segments, and "Supply Chain" had 148 segments (Figure 2).

Figure 2. Number of coded content segments per code group



The results of the content analysis confirmed that performance audits conducted by Supreme Audit Institutions are oriented towards the creation of public value. The findings of the study provide a foundation for further developing research on the impact of performance audits on public value.

*Keywords: performance audit, impact of performance audit, forms of impact of performance audit, public value*

## REFERENCE

Alford, J., & Hughes, O. (2008) 'Public value pragmatism as the next phase of public management'. American Review of Public Administration, 38(2), 130–148. Available at: https://doi.org/10.1177/0275074008314203

Bracci, E., Saliterer, I., Sicilia, M., & Steccolini, I. (2021). 'Accounting for (public) value(s): reconsidering publicness in accounting research and practice'. Accounting, Auditing & Accountability Journal, 34(7), 1513–1526. Available at: https://doi.org/10.1108/AAAJ-06-2021-5318

Deng, H., Karunasena, K., & Xu, W. (2018). 'Evaluating the performance of e-government in developing countries: A public value perspective'. Article information. Internet Research, 28(1), 169–190. Available at: https://doi.org/10.1108/IntR-10-2016-0296

Gross Lopes, K. M., Macadar, M. A., & Luciano, E. M. (2019). 'Key drivers for public value creation enhancing the adoption of electronic public services by citizens. International Journal of Public Sector Management, 32(5), 546–561. Available at: https://doi.org/10.1108/IJPSM-03-2018-0081

Hartley, J., Alford, J., Knies, E., & Douglas, S. (2017). 'Towards an empirical research agenda for public value theory'. Public Management Review, 19(5), 670–685. Available at: https://doi.org/10.1080/14719037.2016.1192166

Hay, D., & Cordery, C. (2018). 'The value of public sector audit: Literature and history'. Journal of Accounting Literature, 40, 1–15. Available at: https://doi.org/10.1016/j.acclit.2017.11.001

Jain Gupta, P., & Suri, P. (2017). 'Measuring public value of e-governance projects in India: citizens' perspective'. Transforming Government: People, Process and Policy, 11(2), 18. Available at: https://doi.org/10.1108/TG-07-2016-0043

Meynhardt, T. (2014). 'Public value turning a conceptual framework into a scorecard'. In Public Value. Available at: https://www.alexandria.unisg.ch/243912/1/Chapter PVSC_TimoMeynhardt_1.pdf

Meynhardt, T., & Bäro, A. (2019). 'Public value reporting Adding value to (non- ) financial reporting'. In Public Value - Deepening, Enriching, and Broadening the Theory and Practice (pp. 87–108)

Moore, H. M. (1994). 'Public value as the focus of strategy'. Australian Journal of Public Administration, 53(3).

Puron-Cid, G., Reddick, C. G., & Ganapati, S. (2008). 'Public value of online financial transparency Financial sustainability and corruption of public officials in the US state governments. International Journal of Public Sector Management, 32(5), 467–488. Available at: https://doi.org/10.1108/IJPSM-03-2018-0073

Talbot, C. (2017). 'Measuring Public Value - a competing values approach'. Available at: https://www.researchgate.net/publication/314304240_Measuring_Public_Value_-_a_competing_values_approach

Truss, E. (2019). 'The Public Value Framework: with supplementary guidance'. Available at: https://doi.org/www.gov.uk/government/publications

Valle-Cruz, D. (2019). 'Public value of e-government services through emerging technologies. Available at: https://doi.org/10.1108/IJPSM-03-2018-0072

Zavattaro, S. M., & Brainard, L. A. (2019). 'Social media as micro-encounters Millennial preferences as moderators of digital public value creation'. International Journal of Public Sector Management, 32(5), 562–580. Available at: https://doi.org/10.1108/IJPSM-02-2018-0059

# MULTI-FACTOR MODELS OF ASSET RETURNS: A BIBLIOMETRIC ANALYSIS

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## ABSTRACT

Multi-factor models are financial models that employ different risk factors in order to explain the expected returns on assets and are used for developing investment strategies. The first significant contribution to the literature on this topic is given by Markowitz (1952), who laid down the foundation of modern portfolio theory by analysing the optimal investment process led by the mean-variance approach. On this basis, Sharpe (1964), Mossin (1966) and Lintner (1969) developed an equilibrium model of assets in financial markets, named the Capital Asset Pricing Model (CAPM), which is a one-factor model that predicts a positive linear relationship between systematic risk, represented by the market return, and expected returns on assets. Despite the fundamental intuition behind the CAPM, it fails empirical tests (Fama and French, 2004).

Since the CAPM, many studies have defined new asset pricing models that go beyond it in explaining the expected return on assets by employing more risk factors. In 1976, Ross developed the Arbitrage Pricing Theory which aims to go beyond the CAPM by incorporating more macroeconomic factors that capture systematic risk. Fama and French (1993) develop a three-factor model that extends the CAPM by adding the size effect and the value effect, i.e., the anomalies whereby small companies tend to have a higher return than large companies (Banz, 1981) and companies with a high book-to-market ratio outperform the companies with a low book to market ratio (Stattman, 1980, Rosenberg, et al., 1985). Cahart (1997) adds to Fama-French's model the momentum effect, which highlights the fact that companies that have performed well continue to do so in the future, as opposed to those that have performed poorly (Jegadeesh and Titman, 1993), while Pastor and Stambaugh (2003) add the liquidity factor. Recently, Fama and French (2015) developed a five-factor model by adding the investment (Titman, et al., 2004) and profitability (Novy-Marx, 2013) factors to their earlier model. The Fama-French five-factor model (FF-5) would explain the maximum cross-sectional variation in average returns and outperform its predecessors. However, there are still many open questions in the literature about this model (Blitz et al., 2018), as well as its global validity (Fama and French, 2017).

The aim of this paper is to undertake a comprehensive analysis of the recent literature on multifactor models subsequent to the emergence of the FF-5 model. The study addresses two research questions, namely, to identify the most influential countries, authors, and journals in this domain (RQ1) and to examine the primary themes and trends that are currently being explored (RQ2). To do so, I

performed a bibliometrics analysis that adheres to the SLR-4-SPAR research protocol (Paul et al., 2021), which ensures the reliability and replicability of the research findings. A total of 715 articles were obtained from the Web of Science database, spanning the time frame from 2015 to 2022. These documents were subjected to filtration to include only those related to the Economics and Business Finance categories, written in the English language, and published in journals with a minimum of three stars according to the Chartered Association of Business Schools (CABS) ranking. The selection was made to ensure the highest level of quality, and the relevance of each article was ascertained by examining its title and abstract. Using bibliometric tools such as Bibliometrix (Aria and Cuccurullo, 2017), R Studio and VOSviewer the study conducts a performance analysis and science mapping (Donthu et al., 2021) to address the research questions.

The contribution of this study is threefold. Firstly, it produces insights into the most influential authors, countries, journals, and affiliations in the recent literature through a comprehensive citation and publication analysis. Secondly, by employing keyword analysis, bibliographic coupling and content analysis, it maps the intellectual structure of this topic, highlighting four clusters representing the major recent research streams in the field of multifactor models. Lastly, it provides several new guidelines for future research, the most significant being the necessity of a comprehensive theory that can justify the use of specific factors in models, thereby putting an end to the "factor zoo" (Harvey et al., 2016) and data mining that have characterized research in recent decades.

The results of this study are of interest to academics as they synthesize the current state of recent literature on this topic and provide guidance for their future research, enabling them to move forward and avoid stagnation. Moreover, the implications of the study extend to professionals, who can benefit from information on the latest developments in asset pricing models, thus improving their investment strategies.

*Keywords: Asset Pricing, Asset Return, Factor Model,, Anomalies, Investments, Bibliometric Analysis.*

## REFERENCES

Aria, M. and Cuccurullo, C. (2017), "bibliometrix: An R-tool for comprehensive science mapping analysis", Journal of Informetrics, 11(4), pp. 959–975.

Banz, R.W. (1981), "The relationship between return and market value of common stocks", Journal of Financial Economics, 9(1), pp. 3–18.

Blitz, D., Hanauer, M.X., Vidojevic, M., Vliet, P. van. (2018), "Five Concerns with the Five-Factor Model", The Journal of Portfolio Management, 44(4), pp. 71–78.

Carhart, M.M. (1997), "On Persistence in Mutual Fund Performance", The Journal of Finance, 52(1), pp. 57–82.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., Lim, W.M. (2021), "How to conduct a bibliometric analysis: An overview and guidelines", Journal of Business Research, 133, pp. 285–296.

Fama, E.F. and French, K.R. (1993), "Common risk factors in the returns on stocks and bonds", Journal of Financial Economics, 33(1), pp. 3–56.

Fama, E.F. and French, K.R. (2004), "The Capital Asset Pricing Model: Theory and Evidence", The Journal of Economic Perspectives, 18(3), pp. 25–46.

Fama, E.F. and French, K.R. (2004), "The Capital Asset Pricing Model: Theory and Evidence", The Journal of Economic Perspectives, 18(3), pp. 25–46.

Fama, E.F. and French, K.R. (2015), "A five-factor asset pricing model", Journal of Financial Economics, 116(1), pp. 1–22.

Fama, E.F. and French, K.R. (2017), "International tests of a five-factor asset pricing model", Journal of Financial Economics, 123(3), pp. 441–463

Harvey, C.R., Liu, Y., Zhu, H. (2016), "… and the Cross-Section of Expected Returns." The Review of Financial Studies, 29, pp. 5–68.

Jegadeesh, N. and Titman, S. (1993), "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency", The Journal of Finance, 48(1), pp. 65–91.

Lintner, J. (1969), "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets: A Reply", The Review of Economics and Statistics, 51(2), pp. 222–224.

Mossin, J. (1966), "Equilibrium in a Capital Asset Market", Econometrica, 34(4), pp. 768–783.

Novy-Marx, R. (2013), "The other side of value: The gross profitability premium", Journal of Financial Economics, 108(1), pp. 1–28.

Pastor, L., & Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. Journal of Political Economy, 111 (3), pp. 642-685.

Paul, J., Lim, W.M., O'Cass, A., Hao, A.W., Bresciani, S. (2021), "Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR)", International Journal of Consumer Studies, 45(4), pp. 1–16.

Rosenberg, B., Reid, K. and Lanstein, R. (1985), "Persuasive evidence of market inefficiency", The Journal of Portfolio Management, 11(3), pp. 9–16.

Ross, S.A. (1976), "The arbitrage theory of capital asset pricing", Journal of Economic Theory, 13(3), pp. 341–360.

Sharpe, W.F. (1964), "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*", The Journal of Finance, 19(3), pp. 425–442.

Stattman, D. (1980), "Book Values and Stock Returns", The Chicago MBA A Journal of Selected Papers, 4, pp 25-45.

Titman, S., Wei, K.C.J. and Xie, F. (2004), "Capital Investments and Stock Returns", The Journal of Financial and Quantitative Analysis, 39(4), pp. 677–700.

# A STUDY OF THE IMPACT OF MASSTIGE STRATEGIES ON BRAND COOLNESS AND BRAND HAPPINESS

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## ABSTRACT

## RESEARCH AIM

Luxury was once exclusive and limited to a small group of wealthy individuals, but as purchasing power increased, traditional luxury brands began to lose their exclusivity. Brands realized they needed to expand their target audience to sustain their growth, leading to the birth of the masstige phenomenon, where premium but attainable products are marketed to the masses. While the masstige strategy has been proven effective, it has been largely ignored and underestimated in the literature. Moreover, the concept of brand coolness and its impact on customers is still in its nascent stage and will also be examined, particularly in the context of mobile brands, which have become a high priority for individuals in their everyday lives. So, this paper aims to contribute to the branding literature by examining the relationship between brand coolness and masstige, investigating how customers relate to their mobile brands in terms of different branding components and constructs, such as masstige, brand coolness, and brand happiness.

## THEORETICAL BACKGROUND

The luxury market has evolved to embrace the concept of democratic luxury, where luxury items that were once considered extraordinary by the masses are now perceived as ordinary by a growing number of people (Kapferer & Bastien, 2009). The term masstige was introduced by Silverstein & Fiske (2003) to describe a modern marketing and branding strategy that delivers prestige to the masses by launching new product lines, new brands, and product extensions to target the middle class. Masstige marketing aims to generate brand knowledge, love, likability, and attachment based on perceived prestige (Bilro et al., 2022). Masstige is not just about price reduction, but also about product innovation, careful promotional strategies, and keeping prices relatively high (Kumar et al., 2021).

While the definition of cool remains elusive, it is generally considered a subjective and dynamic positive trait attributed to cultural objects. Consumers associate cool brands with desirable characteristics, including aesthetics, originality, authenticity, rebelliousness, high status,

subculturalist, iconicity, and popularity (Warren et al., 2019). Coolness is dynamic in nature and changes during the process from niche to mass cool and eventually uncool brands (Loureiro et al., 2020). Before becoming cool for a mass, brands are typically considered cool for a niche within a small in-group or a particular outsider subculture. Mass cool brands are perceived to be more familiar, command a higher price premium, and produce more word of mouth (Warren & Campbell, 2014). However, mass brands need to maintain characteristics that made them cool in the first place to avoid becoming mainstream and less differentiated from competitors.

Building brand happiness is a highly advantageous strategy for companies, but it requires the creation of appropriate conditions to achieve it (Loureiro et al., 2022). These conditions include establishing a strong relationship between consumers and the brand, designing brands that align with consumer goals and self-concept, and creating fair, unique, and enjoyable brand touchpoints (Batra et al., 2012). It is crucial for companies to carefully consider these requirements in order to successfully influence brand happiness and reap the benefits of a loyal and satisfied customer base.

## METHODOLOGY

This study employed a primary research method using a quantitative approach in the form of an online survey to test the conceptual model. The measurement of the constructs was based on previous research. The survey was conducted on Qualtrics platform and imported into PLS SEM for data treatment. To obtain a representative sample, the survey was distributed via social media platforms, targeting individuals of different ages, genders, and diversities residing in Germany. The data were cleaned by excluding respondents with half or empty answers and those residing outside of Germany, resulting in 327 valid comprised 58.5% females and 41.5% males, with two participants not disclosing their gender. The gender balance was acceptable since almost everyone in Germany owns a smartphone, and the female and male participants were almost equally represented.

## CONCLUSIONS AND IMPLICATIONS

This paper contributes to the existing literature on masstige and brand coolness, as well as on its relationship with brand happiness. First, the findings are consistent with Warren et al. (2019) research on the role of self-brand connection and cool brands in consumer behaviour. Second, the study shows that German consumers who integrate their mobile brand into their self-concept tend to find their brand cooler. This is because the brand is perceived as good-looking, aesthetically appealing, popular, or widely accepted. Moreover, German customers who feel connected to other brand consumers on a social level tend to identify more strongly with their individual identity, which

fosters their connection to the brand. Third, the study supports the research of Batra et al. (2012), which shows that happiness can be transferred to products by simply using them. When German customers are happy about their smartphone brand, they have a feeling of comfort towards the specific brand. Experiencing supplemental joy, they are motivated to buy more from this brand, which leads to consumer passion-driven behaviours.

The study provides managerial implications for mobile brands to focus on brand coolness, as it positively impacts brand happiness, and ultimately determining the success of a brand. Marketers should assess whether their brand is niche, mass or uncool, and work on the consequences, especially if they are represented worldwide, where coolness can vary across different cultures and countries. To make a brand cooler, marketers can focus on characteristics such as being extraordinary, aesthetically appealing, energetic, original, authentic, rebellious, high status, subcultural, iconic, and popular. This can positively influence the status and prestige of a brand, generating more word-of-mouth and offering the possibility to expect a higher price for the mobile brand product. Marketers can use typical brand happiness strategies, such as experience marketing, storytelling, gifts, cheerful and vibrant colours, fair, particular, and enjoyable brand touchpoints, to achieve brand happiness.

*Keywords: Brand Coolness; Masstige; Brand Happiness; Branding.*

## REFERENCES

Batra, R., Ahuvia, A., & Bagozzi, R. P. (2012). Brand love. Journal of Marketing, 76(2), 1–16. https://doi.org/10.1509/jm.09.0339

Bilro, R. G., Loureiro, S. M. C., & dos Santos, J. F. (2022). Masstige strategies on social media: The influence on sentiments and attitude toward the brand. International Journal of Consumer Studies, 46(4), 1113–1126. https://doi.org/10.1111/ijcs.12747

Kapferer, J. N., & Bastien, V. (2009). The specificity of luxury management: Turning marketing upside down. Journal of Brand Management, 16(5–6), 311–322. https://doi.org/10.1057/bm.2008.51

Kumar, A., Paul, J., & Starčević, S. (2021). Do brands make consumers happy?- A masstige theory perspective. Journal of Retailing and Consumer Services, 58, 102318. https://doi.org/10.1016/j.jretconser.2020.102318

Loureiro, S. M. C., Bilro, R. G., & Neto, D. (2022). Working with AI: can stress bring happiness? Service Business. https://doi.org/10.1007/s11628-022-00514-8

Loureiro, S. M. C., Jiménez-Barreto, J., & Romero, J. (2020). Enhancing brand coolness through perceived luxury values: Insight from luxury fashion brands. Journal of Retailing and Consumer Services, 57, 102211. https://doi.org/10.1016/j.jretconser.2020.102211

Silverstein, M. J., & Fiske, N. (2003). Luxury for the masses. Harvard Business Review, 81(4), 48–57.

Warren, C., Batra, R., Loureiro, S. M. C., & Bagozzi, R. P. (2019). Brand Coolness. Journal of Marketing, 83(5), 36–56. https://doi.org/10.1177/0022242919857698

Warren, C., & Campbell, M. C. (2014). What Makes Things Cool? How Autonomy Influences Perceived Coolness. Journal of Consumer Research, 41(2), 543–563. https://doi.org/10.1086/676680

# THE EFFECT OF COVID-19 ON ISRAEL'S TOURISM INDUSTRY: TEMPORARY OR PERMANENT?

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## ABSTRACT

Israel's tourist industry had been growing in the years leading up to Covid-19. Overall, counting both foreign and domestic guests, the number of nights people stayed at Israeli hotels had increased at an annual rate of 5% from 2016 to 2019.

The growth was even greater with regard to foreign tourists. The annual growth rate of tourists including day visitors increased at a rate of 16% from 2016 to 2019 and the annual growth rate of tourists not including day visitors increased at a rate of 17% from 2016 to 2019. (All data from Israel's Central Bureau of Statistics.) In 2018 and 2019, for the first time in Israel's history both categories of tourists passed the four million mark. Correspondingly, the number of nights that foreign tourists stayed at Israeli hotels also increased at an annual rate of 12% from 2016 to 2019.

The dark cloud in the Israeli tourism industry in the years prior to Covid-19 was the domestic tourism industry, as from 2016 to 2019 the number of nights that Israelis stayed at Israeli hotels only increased at an annual rate of 0.3%. This minimal increase was even though the annual growth in Israel's population was 1.92% from 2016 to 2019, which means that the per capita number of stays in Israeli hotels by Israelis was declining in the three years prior to Covid-19. This decrease in per capita domestic tourism transpired despite the 11% annual growth of Israelis departing for destinations outside of Israel from 2016 to 2019. One possible reason for the increase in Israelis travelling abroad while there was barely an increase in the number of stays by Israelis in Israeli hotels is that Israeli hotels are viewed as being expensive, while flights abroad were considered relatively cheap due to the Open Skies agreement in 2013 between Israel and the EU.

Covid-19 arrived in Israel in the first quarter of 2020, and, as occurred in many other countries, completely upended the Israeli tourism industry due to the fear of tourists from getting infected by flying on planes and from government restrictions. These restrictions included three lockdowns each for several weeks and limitations at different times on people gathering in large groups, which was particularly difficult for hotels where guests normally eat in one large room. With regard to foreigners, there were periods when they were not allowed to come to Israel, when they had to be quarantined upon arrival in Israel and when they were required to show proof that they did not have corona by negative tests results and/or had been vaccinated. The restrictions on foreigners were only fully removed in May 2022.

Accordingly, the number of incoming tourists (including one day visitors) declined precipitously by more than 90% in 2021 as compared to 2019. Similarly, the number of nights stayed by foreigners in Israeli hotels also declined by more than 90% in 2021 as compared to 2019. On the other hand, since many Israelis were unable to travel abroad due to restrictions by other countries, the number of nights stayed by Israelis in Israeli hotels increased by 7.5% in 2021 as compared to 2019, which was a positive change in the growth rate as compared to the years prior to Covid-19.

In 2022, the trends from 2020 and 2021 continued. With regard to domestic tourism, the number of stays by Israelis at Israeli hotels increased 8.2% in 2022 as compared to 2021. While some of this increase could be a continuation of the substitution of domestic vacations in place of foreign vacations, the number of Israelis travelling abroad in 2022 jumped up by 178% to almost return to its level in 2019. The number of Israelis travelling abroad will likely follow the upward trend from the period prior to Covid-19, as for example in January 2023, the number of Israelis travelling abroad was 24% higher than in January 2019 and 12.5% higher than in January 2020 (which was prior to Covid-19 in Israel). Will these future increases come at the expense of domestic tourism as seems to have occurred in years prior to Covid-19 or will domestic tourism continue to expand as occurred in the years of Covid-19?

With regard to foreign tourists, there was a huge increase in incoming tourists (including one day travelers) by more than 600% in 2022 with respect to 2021, but still the number of tourists in 2022 was 42% less than the number of tourists in 2019. Similarly, the number of nights that foreigners stayed at Israeli hotels increased by more than 750% in 2022 as compared to 2021, but decreased 41% in 2022 with respect to 2019. It is very possible that these reduced numbers in 2022 with respect to 2019 were because of the restrictions that remained in effect until May 2022, but the number of incoming tourists (including one day travelers) in January 2023 was 15% less than number of incoming tourists in January 2019. While most likely the number of tourists will eventually pass the record number of tourists in 2019, the question is, will the annual growth rate of tourists coming to Israel return to the strong growth rates of 16%/ 17% as had occurred in the years prior to Covid-19?

The remaining part of the paper will attempt to answer the two questions concerning what is likely to be the trend in domestic and foreign tourism in Israel in the next few years. The answer to these questions will depend on several factors, among them, the security situation in Israel, the prices of hotels in Israel, and the continuing growth of the high-tech industry, which has an important role with regard to business travelers.

Keywords: Tourist arrivals, Stays in Hotels, Hotel prices, Corona restrictions.

# TRANSFORMATION OF ORGANIZATIONS DURING CRISES

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## ABSTRACT

## ABSTRACT

In present day, the topic of organizational resilience to crises is fundamental. The recent exposure to numerous natural disasters caused by global warming, including floods, earthquakes, fires, the global pandemic caused by the Covid-19 coronavirus, and military conflicts, highlighted the structural, organizational and technological weaknesses of the formed and established organizational systems and demonstrated that the future of organizations depends on their ability to dynamically respond to unforeseen events and to operate in unfamiliar circumstances as smoothly as possible. Therefore, a scientific problem is formulated: how do organizations behave in, transform during and manage crises? Qualitative research conducted by the authors by working with leaders of organizations demonstrates that the leaders are able to maintain control despite crises, however, some organizations are only able to continue operating at a loss.

## INTRODUCTION

Organizations that are seeking to successfully expand in times of crisis situations must not only have sufficient infrastructure and effective emergency management procedures, but also be able to develop and strengthen the resilience of their employees, which is one of the key determinants of the resilience of the organization itself.   While a number of methodologies for assessing the resilience of the infrastructure of organizations in general and organizations in specific sector have been developed, it is essential to continue conducting research that focuses on the social aspect of the process, and studying individual employee resilience characteristics in crisis situations. The topic of organizational resilience to unforeseen crisis in the present-day dynamic environment is at the center of scientific research. Considering contemporary current affairs, a scientific problem is formulated: how do organizations behave in, transform during and manage crisis? The objective of research is to identify the behavior of organizations and managerial actions in the event of a crisis. To implement the objective of the research, the following scientific methods were applied: analysis of scientific literature, synthesis, qualitative research (interviews with managers of organizations that survived the pandemic).  The research study is unprecedented as it successfully identifies general tendencies manifested by organizations operating in different sectors, namely, the disposition to focus on the

management of internal processes and prioritizing communication; reassuring and caring for the mental wellbeing of employees.

## LITERATURE REVIEW

The topic of organizational resilience is manifested in various settings: external, such as earthquakes, floods, hurricanes, other natural phenomena caused by climate change (Loosemore et al. 2011; Shang et al. 2022), military conflict, cyber-attacks, etc. Specific sectors, such as hospital operations (Cucumber et al. 2015; Capolongo 2020; Harris et al. 2021), are examined. Conditions determined by internal crises, such as the role of leadership styles, employee well-being, personal, professional and other human factors in crisis situations (Richard, 2020; Pishnamazzadeh et al., 2020; Niazi et al., 2021; Achour et al., 2022) are considered. Research findings substantiate that the resilience of employees also determines the resilience of the entire organization (Liang and Cao, 2021). Employees resilience during crises is defined as a characteristic that can be developed, and as the ability to both recover from crises, to utilize personal and professional resources, and adapt to and thrive in a changing workplace environment. L (Naswall and kt., 2013; Kuntz and others, 2017; Naswall and etc. 2019). The process of employee resilience development is the systemization of internal and external conditions that enable employees to learn and excel in crisis situations (Richard, 2020).

## RESEARCH METHODOLOGY

A qualitative, partially standardized open in-depth interview was used to fulfill the research tasks, in compliance with the principles of research ethics, voluntariness, awareness, and anonymity. The sample of the study was 12 heads of different organizations that can be classed as resilient, i.e., had been operating for more than 5 years, in the city of Klaipėda. The following criteria were applied to the respondents: a person holding a managerial position; managerial work experience of at least 3 years; has been working in the organization for more than 5 years. The results of the qualitative research were analyzed using the qualitative content analysis method. The interviews took place anonymously, face-to-face in October - November 2022. The duration of the interviews was between 25 to 45 minutes. Respondents were asked questions to find out what crisis affected the organization, what difficulties it caused to the organization, and what changes manifested in central management activities.

## RESULTS

Recent research studies considering crises most commonly focus on organizations that operate in a

specific sector or a specific crisis event. The aim of this research study was identify which crisis event has affected organizations the most in the last 5 years and to determine general trends in management problems experienced by organizations operating in different sectors. The findings of the research study substantiated the significance of the social dimension.

The summary of responses of the leaders of the surveyed organizations are presented in Table 1.

| 1. | Crisis event: | | 1. | Covid-19 pandemic |
|---|---|---|---|---|
| | | | 2. | Hostilities in Ukraine |
| | | | 3. | Significant increase in energy resource costs and inflation |
| 2. | Business operational challenges: | Challenges caused by external factors | 1. | Supply chain crises |
| | | | 2. | Institutional restrictions |
| | | Challenges caused by internal factors | 1. | Employee anxiety, ineptitude |
| | | | 2. | Mental and physical employee wellbeing |
| 3. | Management approach development: | | 1. | Internal and external work reorganization |
| | | | 2. | Communication within and outside of the organization |
| | | | 3. | Resource management |

Table 1. Results

Employee response analyses demonstrated that the majority of respondents deemed external factors to be the cause of the crisis: the COVID 19 pandemic, to a lesser extent - hostilities in Ukraine, resource costs and work relations. Specific complications encountered during crises were differentiated between difficulties caused by external and internal factors affecting the organization. Disturbed supply chains and restrictions set by institutions were named as difficulties caused by external factors. Notably, difficulties caused by internal factors of the organization were signified considerably more often, the largest part of which was made up of aspects related to employee well-being and fears. During crises, changes in management were mainly related to changes in work organization, communication and resource management.

## CONCLUSIONS

Research respondents emphasized internal rather than external factors as the main determinants of difficulties in organizations, the problems related to employee well-being and fears were the most emphasized. Respondents indicated the necessary transformations in organizations during crises and post-crises, i.e., work organization (time, order and form), resource management (finances, facilities, information), purposeful application of communication tools, with an emphasis on creating a closer relationship with employees, explaining the situation, meetings, helping eliminate the fears and apprehensions of employees, organization.

*Keywords: crisis management, organizational resilience, communication*.

## REFERENCES

Achour, N., Elhaj, H., and Ali, A. (2022). "Hospital Resilience to Extreme Events: A Staff Capability of Attendance Perspective", International Journal of Disaster Risk Reduction, Vol.72.

Capolongo, S., Gola, M., Brambilla, A., Morganti, A., Mosca, E. I., and Barach, P. (2020), „COVID-19 and Healthcare Facilities: A Decalogue of Design Strategies for Resilient Hospitals", Acta Bio Medica: Atenei Parmensis, Vol. 91 No. 9-S, pp. 50-60.

Harris, G. H., Rak, K. J., Kahn, J. M., Angus, D. C., Mancing, O. R., Driessen, J., and Wallace, D. J., (2021), „US Hospital Capacity Managers' Experiences and Concerns Regarding Preparedness for Seasonal Influenza and Influenza-like Illness", JAMA Network Open, Vol. 4 No. 3, pp. 1-12.

Kruk, M. E., Myers, M., Varpilah, S. T., and Dahn, B. T., (2015), „What is a Resilient Health System? Lessons from Ebola", The Lancet, Vol. 385 No. 9980, pp. 1910-1912.

Kuntz, J.R.C., Malinen, S. and Näswall, K. (2017), „Employee resilience: directions for resilience development", Counseling Psychology Journal: Practice and Research, Vol. 69 No. 3, pp. 223-242.

Liang, F., and Cao, L., (2021), „Linking Employee Resilience with Organizational Resilience: The Roles of Coping Mechanism and Managerial Resilience", Psychology Research and Behavior Management, Vol. 14, pp. 1063 - 1075.

Loosemore, M., Carthey, J., Chandra, V., and Chand, A. M. (2011), „Climate Change Risks and Opportunities in Hospital Adaptation", International Journal of Disaster Resilience in the Built Environment, Vol. 2 No. 3, pp. 210-221.

Naswall, K., Kuntz, J., Hodliffe, M., & Malinen, S. (2013), „Employee resilience scale (EmpRes): Technical report".

Naswall, K., Malinen, S., an Kuntz, J. and Hodliffe, M. (2019), "Employee resilience: development and validation of a measure", Journal of Managerial Psychology, Vol. 34 No. 5, pp. 353-367.

Niazi, M., Dehkordi, M. R., Eghbali, M., and Samadian, D. (2021), „Seismic Resilience Index Evaluation for Healthcare Facilities: A Case Study of Hospital in Tehran", International Journal of Disaster Risk Reduction, Vol. 65, pp. 1-12.

Pishnamazzadeh, M., Sepehri, M. M., and Ostadi, B. (2020), „An Assessment Model for Hospital Resilience according to the Simultaneous Consideration of Key Performance Indicators: A System Dynamics Approach", Perioperative Care and Operating Room Management, Vol. 20, pp. 1 - 16.

Richard, E. M. (2020), „Developing Employee Resilience: The Role of Leader-facilitated Emotion Management", Advances in Developing Human Resources, Vol. 22 No. 4, pp. 387-403.

Shang, Q., Wang, T., and Li, J. (2022), „A Quantitative Framework to Evaluate the Seismic Resilience of Hospital Systems", Journal of Earthquake Engineering, Vol. 28, No. 7, pp. 1-25.

# HTA: A MULTIDIMENSIONAL TOOL FOR HEALTH CARE MANAGERS

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## ABSTRACT

## BACKGROUND

Health technologies are fundamental tools for ensuring access to quality healthcare, but their optimal use is challenging (Henshall et al., 2012; Hogervorst et al., 2022). The introduction of health technologies with high financial and organizational implications requires the identification of a methodology capable of evaluating their adoption (Shuren & Califf, 2016), especially in the European context where the economic crisis and shortage of healthcare personnel have negatively affected the healthcare system (Kroezen et al., 2015). Health Technology Assessment (HTA) is essential to data-driven health decision-making procedures in most EU countries (Facey et al., 2020). HTA is a transparent and accountable process that decision-makers and other stakeholders can use to support health decision-making at the policy level by providing evidence on specific technologies (WHO) through an evidence-based approach (O'Reilly et al., 2021). This way, decisions can be made after proper evaluation, improving accessibility, effectiveness, and sustainability of the healthcare systems (European Commission). However, further research is needed to overcome the gaps associated with technology assessment by addressing the challenges in using the data collected to generate evidence for decision-making.

## AIM

The present research aims, on the one hand, to identify the role of HTA in decision-making processes for acquiring technological equipment with high financial impact and, on the other, to encourage the establishment of common organizational and accounting standards to be proposed as a model. In summary, the research aims to improve the existing methodological framework within the Health Technology Assessment (HTA) paradigm for evaluating health technologies with high financial impact by providing a practical tool to improve their evaluation, dissemination, and use.

## METHOD

Through literature review and analysis of HTA reports, decision-making processes and

methodologies currently in use were identified. To pursue the research objectives, this paper adopts a case study method. A case study is appropriate when the researcher wants to understand a complex phenomenon in a specific context (Eisenhardt & Graebner, 2007; Yin, 2017). The case study was developed by sourcing information from: literature reviews; analysis of HTA reports; desk analysis of documentation provided by corporate management, and conducting semi-structured interviews with stakeholders involved in the decision-making process (general manager, medical director, director of the selected service/department, clinical engineer and other key stakeholders). The Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system was used to assess the quality of the available evidence and the strength of the recommendations. This tool was chosen because, in addition to assessing the methodological quality of the available evidence, it allows the analysis of the feasibility and transferability of the proposed intervention, the expected benefits and risks and their relevance, as well as the organizational, economic, social, and financial implications. (Mariners, 2017; Schünemann et al., 2013)

## RESULTS

By understanding the decision-making dynamics of healthcare managers and how HTA supports these, it was possible to identify best practices and formulate guidelines to improve decision-making processes for acquiring instrumental and technological innovations by health authorities.

## CONCLUSION

The study has enabled the development of a standard procedure to procure health technologies with a high financial impact to propose as a model. This tool can lead to more efficient cost management and strengthen the public health system.

*Keywords: Health Technology Assessment; HTA; Evidence-based decision making; Health care managers; Model; Sustainability*

## REFERENCES

1.Eisenhardt, K. M. & Graebner, M. E. (2007) "Theory Building From Cases: Opportunities And Challenges." Academy of Management, 50, 25-32.
2.European Commission. eHealth Digital health and care—electronic cross-border health services. Available from: https://ec.europa.eu/health/ehealth/electronic_crossborder_healthservices_en. Accessed 21 june 2023

3.Facey, K., Rannanheimo, P., Batchelor, L., Borchardt, M., & De Cock, J. (2020). "Real-world evidence to support Payer/HTA decisions about highly innovative technologies in the EU—actions for stakeholders." International Journal of Technology Assessment in Health Care, 36(4), 459-468. doi:10.1017/S026646232000063X

4.Henshall, C., Schuller, T., & Mardhani-Bayne, L. (2012). "Using health technology assessment to support optimal use of technologies in current practice: the challenge of "disinvestment"." International journal of technology assessment in health care, 28(3), 203-210.

5.Hogervorst, M. A., Vreman, R. A., Mantel-Teeuwisse, A. K., & Goettsch, W. G. (2022). "Reported challenges in health technology assessment of complex health technologies." Value in Health, 25(6), 992-1001.

6.Kroezen, M., Dussault, G., Craveiro, I., Dieleman, M., Jansen, C., Buchan, J., Sermeus, W. (2015). "Recruitment and retention of health professionals across Europe: a literature review and multiple case study research." Health Policy, 119(12), 1517-1528.

7.Marinai, C. (2017). "Schema organizzativo per valutare con il metodo GRADE i farmaci oncoematologici con classificazione Cnn." Innovazione e sostenibilità del Servizio sanitario, 38, 107.

8.O'Reilly D., Audas R., Campbell K., Vanstone M., Bowen J.M., Schwartz L., Assasi N., Goeree R. (2021). "Evidence-Based Decision Making 3: Health Technology Assessment", Methods Mol Biol.

9.Schünemann H., Brożek J., Guyatt G., Oxman A. (2013). GRADE Handbook https://gdt.gradepro.org/app/handbook/handbook.html

10.Shuren, J., & Califf, R. M. (2016). "Need for a national evaluation system for health technology." Jama, 316(11), 1153-1154.

11.World Health Organization (n.d.) Health Technology Assessment. https://www.who.int/health-topics/health-technology-assessment. Accessed 21 june 2023

12.Yin, R. K. (2017) "Case study research and applications: Design and methods", Sage publications.

# INDUSTRY 5.0 IN MANUFACTURING SECTOR

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## ABSTRACT

Industry 4.0 focused on the technology-driven industrial revolution to increase the quantity, quality and efficiency of production (Xu et al., 2021). However, along with these merits, Industry 4.0 has limited the development of society and neglected workers' welfare and industrial sustainability (Müller, 2020). To overcome these problems, the concept of Industry 5.0 has arisen and focuses on a sustainable, human-centric approach to industrial production and resilient manufacturing systems. Industry 5.0 has been widely discussed in the last few years but the previous literature focuses on the enabling technologies such as digital twins and simulation, bio-inspired technologies and smart materials, multilingual speech and gesture recognition, data transmission, storage, and analysis technologies, and technologies for energy efficiency, renewables, storage and autonomy (Coronado et al., 2022; Nayeri et al., 2023; Vogt, 2021). The previous literature neglected to answer how human-centricity could be achieved in Industry 5.0. Increased reliance on complex technologies has created new challenges. Things such as financial union, gender equality and youth empowerment are critical for social fairness and prosperity in Industry 5.0. In an industrial context, human contribution should be involved in every step of this transition process to ensure a human-centric and socio-centric approach. The European Commission of Research and Innovation explained in its policy framework that the priorities for implementing Industry 5.0 are working on the gender gap, fair economic and monetary union, youth participation in smart manufacturing factories and a deeper and fairer internal market (European Commission, 2021). In this study, we use the European Commission variables as the main control variables for Industry 5.0, industrial value added as an exogenous variable and industrial value added per worker as a proxy for Industry 5.0, the main variable of interest. Human-centric design solution in Industry 5.0 is where humans and machine intelligence collaborate in a shared working environment (Breque et al., 2021). Therefore, Industry 5.0 is already becoming a part of the business landscape and is already present in our production systems. This research extends the prior literature by answering these questions with the help of the nonlinear autoregressive distributed lag (NARDL) technique which can capture both the long-run and short-run asymmetries effect of social fairness and prosperity in the manufacturing sector. In addition, we adopt a panel Granger causality model and a panel vector autoregressive (VAR) model. We collect the data for the period of 2000 to 2019 from the World Bank and The World Heritage Foundation for the following control

variables: i) deeper and fairer economic and monetary union which depicts the institutions and financial markets in terms of their depth, access, and efficiency from a financial development index; ii) gender equality, which we calculate by subtracting the labour force participation rate of females ages 15–24 from the labour force participation rate for males ages 15–24 (based on World Bank data); iii) fair internal market representing the liberty and free markets; iv) youth participation using an employment to population ratio for people ages 15–24 (from the World Bank database); and v) chemical industry, food and beverage industry, machinery and transport equipment industry, medium and high-tech industry, textiles and clothing industry and overall manufacturing industrial value addition as the exogenous variables. This research is limited to Central and Eastern European (CEE) countries. Since the human centricity aspect has always existed in production and it varies by industry, we use the NARDL approach to find short- and long-run asymmetric relationships and the Granger non-causality panel and panel VAR model to account for cross-sectional dependence. From our Granger non-causality tests and panel VAR analysis, we determine the causality of industry value added with Industry 5.0. Our results show that the food and beverage, textile and clothing, and transport industries are human-centric and have significant effects on Industry 5.0 in the short and long run. Granger causality results demonstrate that the chemical, textile, and overall manufacturing industries are significantly human-centric.

*Keywords: Industry 5.0, Human-centricity, Resilience, Green manufacturing*

## REFERENCES

Breque, M., De Nul, L., & Petrides, A. (2021). Industry 5.0 - Towards a sustainable, human- centric and resilient European industry. In European Commission. https://doi.org/10.2777/308407
Coronado, E., Kiyokawa, T., Ricardez, G. A. G., Ramirez-Alpizar, I. G., Venture, G., & Yamanobe, N. (2022). Evaluating quality in human-robot interaction: A systematic search and classification of performance and human-centered factors, measures and metrics towards an industry 5.0. Journal of Manufacturing Systems, 63, 392–410. https://doi.org/10.1016/j.jmsy.2022.04.007
European Commission. (2021). Industry 5.0. https://research-and innovation.ec.europa.eu/research-area/industrial-research-and-innovation/industry-50_en
Müller, J. (2020). Enabling Technologies for Industry 5.0: Results of a workshop with Europe's technology leaders. European Commission, September, 19. https://doi.org/10.2777/082634
Nayeri, S., Sazvar, Z., & Heydari, J. (2023). Towards a responsive supply chain based on the industry 5.0 dimensions: A novel decision-making method. Expert Systems with Applications, 213(PC), 119267. https://doi.org/10.1016/j.eswa.2022.119267
Vogt, J. (2021). Where is the human got to go? Artificial intelligence, machine learning, big data, digitalisation, and human–robot interaction in Industry 4.0 and 5.0. AI & SOCIETY, 36(3), 1083–1087. https://doi.org/10.1007/s00146-020-01123-7
Xu, X., Lu, Y., Vogel-Heuser, B., & Wang, L. (2021). Industry 4.0 and Industry 5.0 —Inception, conception and perception. Journal of Manufacturing Systems, 61(October), 530–535. https://doi.org/10.1016/j.jmsy.2021.10.006

# A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA OF MASSTIGE AND BRAND HAPPINESS

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## ABSTRACT

## INTRODUCTION

This investigation aims to understand the scientific study's evolution regarding the relationship between brand masstige and brand happiness, outlining the yearly production, main geographical areas, authors, and themes. Also, it is observed, based on the main articles of clusters of authors, methodological approaches, contexts, and models commonly used in the past literature, for which we describe some gaps. The analysis is based on the statistical study of 138 documents retrieved from the Web of Science, following: a global bibliometric review, resorting to R-Program; 2) a Social Network Analysis that enables the construction and interpretation of a keywords co-occurrence map and a bibliographic coupling map with the help of Vosviewer. Additionally, the main articles selected from the last map are attentively examined. Our review shows that masstige brand and brand happiness have been researched separately in the past three decades. However, there needs to be more scientific research concerning the association between both themes. Up to this moment, no bibliometric review has focused on the relationship between masstige, a recent concept, and brand happiness. We verify that there is theoretical support for the effect of buying luxury items on happiness. This could be applied to masstige consumption. Also, masstige and brand happiness must be deepened conceptually through a broader analysis (to different cultures, brands, or segments).

## BACKGROUND

Masstige is a very recent concept, following a new trend of consumption habits, and still needs to be explored in the current scientific literature. It encompasses both mass consumption and prestige brand (Justin Paul, 2018). Examples of masstige brands could be Victoria's Secret or Starbucks, where, despite their items being associated with a particular reputation and high status, they are financially accessible to the masses, captivating many consumers. This shift in consumption has evoked some curiosity among marketers, but there is no complete information yet explaining this phenomenon. Why do high-ranked brands are so desired? Do the reductions in the pricing of prestigious brands change the perception of these brands? This is where the analysis of brand

happiness arises. Based on previous works that associate happiness with buying luxury items (Zhang, Chen, Xie, & Zhuang, 2022), we want to perceive how masstige consumption and happiness are related. For that, we find of great importance the study of emergent scientific works that could clarify some of our doubts, understand at the same time the up-to-date state-of-the-art of these two themes, and identify gaps that can suggest future research and practical directions. The purpose of this investigation falls, then, on the following points:

- RQ1: How can we systematize and identify advances in masstige and brand happiness research by going through key papers, authors, affiliations, and themes?

- RQ2: In which contexts were masstige and brand happiness studied?

- RQ3: What are the main methodological approaches applied?

- RQ4: What were the most relevant topics addressed and conclusions?

- RQ5: What is the relationship between masstige brand and brand happiness?

- RQ6: What are the directions for future research and its implications?

**Masstige brand**

Masstige is a recent construct in the literature resulting from key changes in the consumer-brand relationship and in business and marketing strategies applied to prestige brands. It reflects the terms "mass" and "prestige", as pointed out by Justin  Paul (2018), being described as the sustainable extension of the accessibility of prestige items/services to the masses. Following a masstige theory, it is possible to study, through masstige brands, several relevant variables associated with consumer behavior. What triggers the consumption of high-status brands? According to Kumar, (Kumar, Paul, & Starčević, 2021) (Kumar, Paul, & Unnithan, 2020), prestige consumption can be instigated to increase happiness and improve the social image. It becomes clear that the prestige given to brands affects the quality of various relationships between the consumer and the brand (Choi & Hyun, 2017). Nonetheless, buyers' perceptions shift when the prestige spreads to the masses.

**Brand happiness**

Concerning brand happiness, this is a still recent construct that incorporates the positive emotions associated with buying, related to factors like the price, the quality of the product, the communication, and the environmental, situational, and cultural contexts of buying (Schnebelen & Bruhn, 2018). A brand that can give happiness can be positively differentiated from others, elevating consumer loyalty and buying intentions and, consequently, promoting the brand's competitiveness and value (Bettingen & Luedicke, 2009; Bruhn & Schnebelen, 2017; Mishra, Dash, & Cyr, 2014). Thus, it is understood as one of the most important brand goals to achieve an efficient marketing strategy, whose research, still in an initial phase, should be continued in the future (Schnebelen & Bruhn, 2018).

It can now be perceived as a factor that promotes Masstige consumption (Kumar et al., 2020). We also note that in the present literature, the concepts of brand happiness and consumer happiness have been used indistinguishably, showing the need to clarify these two terms in future research. According to the current misconception, we consider both brand happiness and consumer happiness in the articles we analyze.

## METHODOLOGY

This work is developed resorting to a bibliometric analysis of 138 papers from 1993-2020 gathered from the Web of Science Core Collection. The R-Program supports the first global review, aimed at identifying primary authors, articles, countries, and sources (Merigó, Mas-Tur, Roig-Tierno, & Ribeiro-Soriano, 2015). Second, we develop two interactive maps through a Social Network Analysis undertaken in Vosviewer: a keywords co-occurrence map to determine interactions between main themes, and a bibliographic coupling map, to find strong author clusters based on citation (Guo et al., 2021). After the statistical process, we review the most important articles and retrieve basic information concerning the contexts of the study, methodologies, variables, models, and future implications. The data used in this bibliometric review was collected from the Web of Science (WoS, 2021) core collection, which is one of the most used academic citation databases (Ferreira, Fernandes, & Ratten, 2016). The research was based on the words "Masstige brand" (also replaced by mass prestige) and brand happiness, and "Brand Consumer" for the topic (that encompasses title, abstract, author keywords, and keywords plus). No filters for a time span, source or type of document were applied. Then, a total of 138 documents published between January of 1993 to February of 2021 constitutes the final database.

## RESULTS AND DISCUSSION

It is possible to understand a significant growth in the study of both masstige brand and brand happiness, mainly since 2013, reflecting the emergency of these topics across recent literature. These statistics validate the need to continue the research done in the last decade, that, in spite of considerable growth, is still scarce. It is important to know where geographically the literature is mainly produced. The United States stands out from the rest of the world, contributing to two thirds (91 affiliations) of all the production. It is followed by China (31 affiliations), United Kingdom (16 affiliations), Australia (14 affiliations) and India (11 affiliations). Nonetheless, we have to understand that number of affiliations overcomes the number of articles, and the large numbers may reflect documents with many authors, and not necessarily a high number of articles. Now, looking more in-depth to individual production, the 6 main articles are indicated based on the number of citations

(above 50), referencing authors, year, and title. These articles focus on the psychological perspective of consumption behavior and perceptions on advertising (Dunn & Hoegg, 2014; Hartmann & Apaolaza-Ibáñez, 2010; Lewinski, Fransen, & Tan, 2014; Schmitt, Joško Brakus, & Zarantonello, 2015) and on the conspicuous consumption (Bellezza, Paharia, & Keinan, 2017; Roper, Caruana, Medway, & Murphy, 2013). The content review considers most of these documents due to its recognized importance. To finalizes this analysis, the top journals in which the themes of brand happiness and masstige have been published was Journal of Business Research, European Journal of Marketing, Journal of Consumer Psychology, and Psychology & Marketing. These journals cover the areas of business, marketing, and consumer behavior.

The first bibliometric network presented is the keywords co-occurrence map, whose links join keywords that appear in the same article (Callon, Courtial, Turner, & Bauin, 1983). The network is based in all keywords (authors keywords and keywords plus) and the criteria used was: Full counting and Association as the normalization method of the network layout. From the 967 keywords identified, it was decided to select only those keywords that presented at least 6 occurrences (appear in 6 scientific documents or more), generating 32 keywords. Consequentially, 3 clusters were recognized. The first cluster covers brand happiness, joining a set of terms that convey feelings of happiness towards buying (motivation, happiness, emotion, satisfaction). The second is directed to the masstige, since it is possible to analyze terms that identify luxury and prestige (luxury or mass prestige). Finally, the last cluster identified is directed towards consumption, related with terms like consumer, identity and materialism).

The relationship between the articles was also analyzed considering the similarity of the references, applying the technique of bibliographic coupling with documents. This technique reflects the linkages between two documents that share the same reference, and the more references that exist in common between these two documents, the greater the strength of bibliographic coupling (Egghe & Rousseau, 2002; Kessler, 1963). Considering the fractional counting (which means that the total weight of the publication is equal to the number of authors of the publication) (Perianes-Rodriguez, Waltman, & Van Eck, 2016), a minimum of ten citations, and 28 articles were allocated among five clusters. When analyzing the articles' title, abstract, and keywords of the bibliographic coupling map, we conclude that the first cluster focuses on brand happiness and its influence on consumption, which can be associated with the cluster of keywords brand happiness. The second cluster seems to fall with a greater specificity on the theme of masstige as a marketing strategy, thus corresponding to the group of keywords of masstige. The third cluster refers to articles that address issues related to conspicuous consumption and status perception. This cluster is also related to the masstige keyword group. In the fourth cluster, it is possible to identify approaches to themes related with the influence

of emotions on consumption, connected to the keywords cluster of consumption. The fifth cluster has as its main topic the cultural and environmental influence on consumer behavior, being connected with the keywords group of consumption.

Going through our research questions, we try to answer them in the respective order. It can be concluded that 50% of the samples are from America, 31% from Asia, 15% from Europe and only 4% from Oceania. Concerning brands, the authors mention Louis Vuitton; Gucci; Apple; Toyota; Starbucks; Armani; Victoria's Secret; Chanel and Prada. However, there are some articles that do not make references to brands. In addition, we found that the research is mainly concentrated in the areas of fashion, food, tourism, information technology and automobile, and it is possible. We identify some gap concerning the types of products, brands and industries, including some lesser-known brands.

Regarding the methodology, we observe that the empirical method is the most used – namely the quantitative studies (10 articles) – while only four articles used conceptual analysis methods. Thus, we understand that more theoretical frameworks could be explored in future research to support patterns of interaction between brand happiness and masstige.

Considering the main topics studied and the conclusions retrieved, we can observe that there is not a clear approach towards the study of the relationship between brand happiness and masstige. Consumer happiness can be defined both by materialism and experimentalism dimensions, which are mediated by brand experiences (Schmitt et al., 2015). Adding the studies of Bellezza et al. (2017), applied to the use of time, and of Pounders, Kowalczyk, and Stowers (2016), applied to selfie-posting process, we believe the masstige consumption can be explained by 1) impression management; 2) conspicuous consumption - where the act of buying luxury items is based on the need to construct a certain image to the exterior. Roper et al. (2013) shows how complex are the factors behind perceptions on luxury items. Furthermore, affective attitude, materialism, and self-presentation predict consumer likelihood to purchase luxury brands (Arli, Cherrier, & Tjiptono, 2016). Thus, the second cluster, which encompasses key authors on the scope of masstige. Paul (2015, 2018, 2019) develops a new theoretical model to support masstige marketing strategy, contributing with the Masstige Mean Score (MMS). He argues that masstige value is the best indicator of the brand value/equity in the long term. Kumar et al. (2020) understands that masstige value increases with best-selling brands, first mover brands to a foreign market and competition. Kapferer (2014), on its turn, studies the artification - the process of transforming a brand into a piece of art, which seems to be a factor for value aggregation to the luxury brand.

## CONCLUSIONS AND IMPLICATIONS FOR THEORY AND PRACTICE

Our work proposed mainly to understand the underlying relationships between brand masstige and brand happiness. Using a sample of 138 scientific documents from the literature about the masstige and brand happiness, we investigated the intellectual and conceptual structure of the fields, identified the most influential research perspectives, and proposed a future research agenda. Moreover, we examined the conceptual models that cover the relationship between both constructs.

## ACKNOWLEDGMENT

*Keywords: Masstige Strategy; Brand Happiness, Literature Review.*

## REFERENCES

Arli, D., Cherrier, H., & Tjiptono, F. (2016). God blesses those who wear Prada: Exploring the impact of religiousness on attitudes toward luxury among the youth of Indonesia. Marketing Intelligence & Planning.

Bellezza, S., Paharia, N., & Keinan, A. (2017). Conspicuous Consumption of Time: When Busyness and Lack of Leisure Time Become a Status Symbol. Journal of Consumer Research, 44(1), 118-138. doi:10.1093/jcr/ucw076

Bettingen, J.-F., & Luedicke, M. K. (2009). Can brands make us happy? A research framework for the study of brands and their effects on happiness. ACR North American Advances.

Bruhn, M., & Schnebelen, S. (2017). Brand Happiness: The Searching and Finding of the "Holy Grail" of Marketing. Die Unternehmung, 71(4), 464-490.

Callon, M., Courtial, J.-P., Turner, W. A., & Bauin, S. (1983). From translations to problematic networks: An introduction to co-word analysis. Social Science Information, 22(2), 191-235.

Choi, Y. G., & Hyun, S. S. (2017). Relationships between brand experiences, personality traits, prestige, relationship quality, and loyalty. International Journal of Contemporary Hospitality Management.

Dunn, L., & Hoegg, J. (2014). The Impact of Fear on Emotional Brand Attachment. Journal of Consumer Research, 41(1), 152-168. doi:10.1086/675377

Egghe, L., & Rousseau, R. (2002). Co-citation, bibliographic coupling and a characterization of lattice citation networks. Scientometrics, 55(3), 349-361.

Ferreira, J. J. M., Fernandes, C. I., & Ratten, V. (2016). A co-citation bibliometric analysis of strategic management research. Scientometrics, 109(1), 1-32. doi:10.1007/s11192-016-2008-0

Guo, Y.-M., Huang, Z.-L., Guo, J., Guo, X.-R., Li, H., Liu, M.-Y., . . . Nkeli, M. J. (2021). A bibliometric analysis and visualization of blockchain. Future Generation Computer Systems, 116, 316-332.

Hartmann, P., & Apaolaza-Ibáñez, V. (2010). Beyond savanna: An evolutionary and environmental psychology approach to behavioral effects of nature scenery in green advertising. Journal of Environmental Psychology, 30(1), 119-128. doi:https://doi.org/10.1016/j.jenvp.2009.10.001

Kapferer, J.-N. (2014). The artification of luxury: From artisans to artists. Business Horizons, 57(3), 371-380.

Kessler, M. M. (1963). Bibliographic coupling between scientific papers. American documentation, 14(1), 10-25.

Kumar, A., Paul, J., & Starčević, S. (2021). Do brands make consumers happy?-A masstige theory perspective. Journal of Retailing and Consumer Services, 58, 102318.

Kumar, A., Paul, J., & Unnithan, A. B. (2020). 'Masstige'marketing: A review, synthesis and research agenda. Journal of Business Research, 113, 384-398.

Lewinski, P., Fransen, M. L., & Tan, E. S. (2014). Predicting advertising effectiveness by facial expressions in response to amusing persuasive stimuli. Journal of Neuroscience, Psychology, and Economics, 7(1), 1.

Merigó, J. M., Mas-Tur, A., Roig-Tierno, N., & Ribeiro-Soriano, D. (2015). A bibliometric overview of the Journal of Business Research between 1973 and 2014. Journal of Business Research, 68(12), 2645-2653. doi:https://doi.org/10.1016/j.jbusres.2015.04.006

Mishra, A., Dash, S. B., & Cyr, D. (2014). Linking user experience and consumer-based brand equity: the moderating role of consumer expertise and lifestyle. Journal of Product & Brand Management.

Paul, J. (2015). Masstige marketing redefined and mapped. Marketing Intelligence & Planning, 33(5), 691-706. doi:10.1108/MIP-02-2014-0028

Paul, J. (2018). Toward a'masstige'theory and strategy for marketing. European Journal of International Management, 12(5-6), 722-745.

Paul, J. (2019). Masstige model and measure for brand management. European Management Journal, 37(3), 299-312.

Perianes-Rodriguez, A., Waltman, L., & Van Eck, N. J. (2016). Constructing bibliometric networks: A comparison between full and fractional counting. Journal of Informetrics, 10(4), 1178-1195.

Pounders, K., Kowalczyk, C. M., & Stowers, K. (2016). Insight into the motivation of selfie postings: Impression management and self-esteem. European Journal of Marketing.

Roper, S., Caruana, R., Medway, D., & Murphy, P. (2013). Constructing luxury brands: exploring the role of consumer discourse. European Journal of Marketing, 47(3/4), 375-400. doi:10.1108/03090561311297382

Schmitt, B., Joško Brakus, J., & Zarantonello, L. (2015). From experiential psychology to consumer experience. Journal of Consumer Psychology, 25(1), 166-171. doi:https://doi.org/10.1016/j.jcps.2014.09.001

Schnebelen, S., & Bruhn, M. (2018). An appraisal framework of the determinants and consequences of brand happiness. Psychology & Marketing, 35(2), 101-119.

Zhang, J., Chen, M., Xie, Z., & Zhuang, J. (2022). Don't fall into exquisite poverty: The impact of mismatch between consumers and luxury brands on happiness. Journal of Business Research, 151, 298-309.

# THE IMPACT OF TELEWORKING STRESSORS ON BURNOUT: A MODERATION OF STRESS COPING STRATEGIES

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## ABSTRACT

One of the biggest challenges in recent years is employees burnout and stress due to the impact of the COVID pandemic on anxiety, fatigue, depression and sleep disturbances, i.e. the mental health of employees (Taylor et.al., 2020; Chirico et al., 2021). Burnout affects not only the individuals who experience it but also those around them and the organisation where they work (Salvagioni et al., 2020). As the mental health and well-being of employees are among the key factors that define the long-term effectiveness of organisations, interest in this topic in the context of teleworking is not waning. Previous research shows that teleworkers are affected by slightly different environmental stressors than in the regular workplace, such as isolation (Wang et. al., 2020); increased workload (Tavares et.al. 2020; Shao et.al. 2021), and lack of information (Weinert et. al., 2015). Employees experience more anxiety and stress due to role ambiguity (Weinert et.al., 2015); work-family conflicts (Wang et.al. 2021; Camacho, Barrios 2022), which may influence burnout in remote working.

A critical question is whether appropriate stress coping strategies help the employee to avoid experiencing burnout when exposed to the stressors of remote working.  The aim of this study is to investigate the effect of telework stressors on employee burnout by moderating stress coping strategies. A structured survey is used to achieve this aim. 400 respondents working remotely, representing different organisations in Lithuania, were interviewed. An online survey platform was used to conduct the research. The survey results show that the stress of teleworking positively impacts burnout but that individual stressors have different effects. High workload, too many tasks and responsibilities predict higher burnout. Autonomy and the ability to plan one's agenda reduce burnout; conversely, employees who do not have this possibility tend to be more burnt out. The influence of isolation, lack of information, role ambiguity and work-family conflicts as stressors of teleworking on burnout was not confirmed.

The scientific literature review and the empirical study provide an organizing frame of reference for scholars and managers. First, for scholars, this study contributes to filling a gap in the literature by expanding the field of burnout research by identifying the effects of stress coping strategies on the

relationship between telework stressors and burnout. Second, the study confirmed the moderating effect of social support, problem-solving and avoidance strategies on the relationship between teleworking stressors and burnout; therefore, it can be concluded that using social support and problem-solving strategies helps employees manage stress and thus avoid burnout syndrome. In the case of the avoidance strategy, it is possible that by distancing oneself from the stressful situation and trying to divert attention away from the problem, the stress experienced is reduced and the likelihood of burnout becomes negligible. Nevertheless, the moderating effect of the emotional discharge coping strategy was not confirmed; therefore, the study highlights two related concerns for managers. First, the research reveals significant statistical relationships between the stress of teleworking and burnout as a whole; however, individual stressors have different effects. Second, the moderating effect of the emotional discharge coping strategy was not confirmed; however, the moderating effect of social support, problem-solving and avoidance strategies on the relationship between teleworking stressors and burnout was confirmed. In other words, the higher the evaluation of social support, problem-solving and avoidance strategies, the lower professional burnout. For the managers of organizations, it is essential to consider the significance of the interrelation between the stress of teleworking and burnout in both extraordinary pandemic and also ordinary time. For scholars is essential to consider the limitations of this study, that include, firstly, that all measurements were based on self-reported data and reflected the subjective perceptions of the respondents. More detailed results can be obtained using more objective measures. Secondly, our study is geographically and culturally limited, as only working residents of the Republic of Lithuania participated. Thus, results from other Eastern European countries may reveal more convincing aspects of the problem.

*Keywords: teleworking stressors, employee burnout, stress coping strategies*

## REFERENCES

Camacho S., and Barrios A. (2022), "Teleworking and technostress: early consequences of a COVID-19 lockdown". Cognition, Technology & Work, Vol. 4, No. 3, pp. 441-457. https://doi.org/10.1007/s10111-022-00693-4

Chirico F., Ferrari G., Nucera G., Szarpak L., Crescenzo P. and Ilesanmi O. (2021), "Prevalence of anxiety, depression, burnout syndrome, and mental health disorders among healthcare workers during the COVID-19 pandemic: a rapid umbrella review of systematic reviews", J Health Soc Sci, Volume 6, No. 2, pp. 209-220. DOI 10.19204/2021/prvl7

Tavares F., Santos E., Diogo A. and Ratten V. (2020), "Teleworking in portuguese communities during the COVID-19 pandemic", Journal of Enterprising Communities: People and Places in the Global Economy, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JEC-06-2020-0113

Taylor S., Landry C. A., Paluszek M. M., Fergus T. A., McKay D., and Asmundson G. J. (2020), "COVID stress syndrome: Concept, structure, and correlates", Depression and anxiety, Vol. 37, No. 8, pp. 706-714. https://doi.org/10.1002/da.23071

Salvagioni D. A. J., Mesas A. E., Melanda F. N., Dos Santos H. G., González A. D., Girotto E. and de Andrade S. M. (2020), "Prospective association between burnout and road traffic accidents in teachers", Stress and Health, Vol. 36, No.5, pp. 629-638. https://doi.org/10.1002/smi.2958

Shao Y., Fang Y., Wang M., Chang C. H. D. and Wang, L. (2021), "Making daily decisions to work from home or to work in the office: The impacts of daily work-and COVID-related stressors on next-day work location", Journal of Applied Psychology, Vol.106, No.6, pp.825-838. https://psycnet.apa.org/doi/10.1037/apl0000929

Weinert C., Maier C., and Laumer S. (2015), "Why are teleworkers stressed? An empirical analysis of the causes of telework-enabled stress", Wirtschaftsinformatik Proceedings, No. 94. https://aisel.aisnet.org/wi2015/94

Wang W., Albert L. and Sun, Q. (2020), "Employee isolation and telecommuter organizational commitment", Employee Relations, Vol.42, No.3, pp. 609-625. https://doi.org/10.1108/ER-06-2019-0246

Wang B., Liu Y., Qian J. and Parker, S. K. (2021), "Achieving effective remote working during the COVID-19 pandemic: A work design perspective", Applied psychology, Vol. 70. No.1, pp. 16-59. https://doi.org/10.1111/apps.12290

# GREEN EVA AS A TOOL FOR THE DETERMINATION OF THE GREEN ECONOMIC VALUE ADDED OF THE ENVIRONMENTALLY-SUSTAINABLE PROJECTS

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## ABSTRACT

*Purpose* – propose a conceptual model for the evaluation of the Green Value Added (Green EVA ) of the environmentally sustainable projects and empirically implement the model based on the case of the city of Vilnius.

*Research methodology* – 1) scientific literature on sustainability, green project management, and determination of Economic Value Added (EVA); 2) selection of the environmental indicators for the evaluation of the city's and project's environmental performance; 3) allocation of weights to the environmental indicators; 4) evaluation of Green EVA of the green project.

*Originality / Value* – the proposed conceptual model for the estimation of the Green EVA for environmentally-sustainable projects can serve as a tool for the evaluation of the environmental impact of the project on the Economic Value Added (EVA) of the city, county or country from the perspectives of the green economy and sustainability.

## THEORETICAL IMPLICATIONS FOR THE VALUE CREATION OF THE ENVIRONMENTALLY-SUSTAINABLE PROJECTS

The term sustainability can often be described with the ability to preserve a certain condition for a long period of time without fluctuations in the state of these conditions (Chakrabarti & Chakrabarti, 2017; Mensah, 2019). Therefore, sustainable development is a strategy that aims to preserve resources for future generations (Mensah, 2019). Both terms are widely investigated in academia and are in the process of implementation by governments, institutions, and businesses. The increased interest in this methodology has been stipulated by global environmental challenges and the mitigation of climate change.

The growing interest in sustainable development has led to the appearance of new products, services, investment options, project types, and financing ways. Academics (Arestis & Sawyer, 2022; Kahlenborn et al., 2017; Migliorelli, 2021; Migliorelli & Dessertine, 2019) align the definition of

sustainable finance with sustainable development. Here, sustainable development includes environmental, social, economic, and governance concerns, whereas finance spans from traditional to low-carbon, climate, green, socio-environmental, and sustainable. Green investments are considered to have a positive impact on the environment, economy and organisations adopting green investment strategies (Chitmiea et al., 2021). Green investments involve investing in environmentally beneficial technologies (Ivanova et al., 2021). The aim of green projects is to facilitate environmental preservation, responsible and effective use of resources, and reduce climate change hazards (Ivanova et al., 2021).

The concept of value creation is widely investigated on a company level. One of the common measures of the ability of a company to create value is estimation of the economic value added. Academics have further developed the concept to address sustainability concerns. The pioneers in the studies of sustainable economic value added (SVA) are Figgie & Hahn. Academics propose that the SVA is a metric that compares the total of all expenses and revenues to changes in organisational eco- and social efficiency as a result of the business's wealth creation (Figge & Hahn, 2004, 2002). Researchers have also introduced a benchmark component to the valuation concept, as it plays an important role in portraying the company's performance against the benchmark.

The concept of SVA has been further analysed with the view that the main foundation of this method is related to the environmental pillar and only to a certain degree of the social pillar of the company's sustainability (Straková, 2015). Researchers (Kassem et al., 2016) have proposed the SVA method through the application of the relevant ESG indicators and the corresponding weights. According to the authors, shifting one of the indicators to a negative direction will have a negative effect on the SVA value. Kassem et al. (2016) propose the following formula for the calculation of the SVA:

$$SVA = EVA_C - \sum_{i=1}^{n} \left( \frac{w_{i,c} * EI_{i,c}}{w_{i,b} * EI_{i,b}} * EVA_b \right) - \sum_{j=1}^{m} \left( \frac{w_{j,c} * SI_{j,c}}{w_{j,b} * SI_{j,b}} * EVA_b \right) - \sum_{l=1}^{k} \left( \frac{w_{l,b} * GI_{l,c}}{w_{l,b} * GI_{l,b}} \right) * EVA_b \quad (1)$$

Where *EI, SI, and GI* stand for the environmental, social and governance indicators, respectively, $w$ denotes the weight of the indicator, $c$ denotes the company, and $b$ denotes the benchmark.

Scholars (Kassem et al., 2016) propose that the benchmark estimates and weights of the indicators can be ranked via the DEA model (Kasem et al., 2015) which helps to put alongside comparable companies, products, services, etc.

Academics (Jankalová & Kurotová, 2020) also have studied the SVA method proposed in previous research and concluded that, in terms of a company valuation, further analysis of variables which influence sustainable performance and SVA needs to take place to distinguish the dominant indicators across industries, various types and sizes of companies.

The SVA method described so far can be applied to the valuation of the sustainable economic value of the company. The scientific literature does not provide a clear path for the evaluation of the sustainable value added of green and environmentally sustainable projects.

## PROPOSED RESEARCH METHODOLOGY

The proposed research methodology is presented in Fig. 1. It consists of the four phases. The proposed calculation formula for the Green EVA measure is formula no. 2. The rationale behind the conceptual model and the formula is based on the conceptualisation by Kassem et al. (2016) where environmental performance is measured with a set of indicators and the corresponding weights.

| Phase 1 | Selection of environmental indicators |
|---|---|
| Phase 2 | Expert valuation of environmental indicators' weights |
| Phase 3 | Ranking indicators with DEA |
| Phase 4 | Calculation of city's EVA and Green EVA of the project |
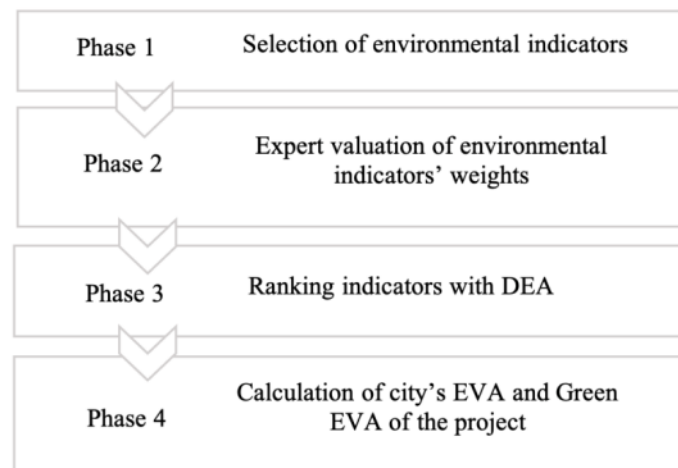
Fig. 1. Proposed conceptual model for the Green EVA (source: compiled by authors)

The distinguishing feature of the Green Eva methodology is the evaluation of the environmental performance of the project and the measurement of its impact on the city, county and country where this project is being implemented. For example, if the project creates positive value, the overall economic value added of the city is increasing.

$$Green\ EVA = EVA_{City} + \sum_{i=1}^{n} \left( \frac{w_{i,project} * EI_{i,project}}{w_{i,city} * EI_{i,city}} * EVA_{city} \right) \tag{2}$$

Where $EVA_{city}$ – EVA of the city, county, country, $w$ denotes the weight of the indicator, and $EI$ denotes the environmental indicator.

*Keywords: Green EVA, value creation, green projects, environmental performance, waste management.*

## REFERENCES

Arestis, P., & Sawyer, M. (2022). Economic Policies for Sustainability and Resilience. In Economic Policies for Sustainability and Resilience. Palgrave Macmillan UK. https://doi.org/10.1007/978-3-030-84288-8

Chakrabarti, A. & Chakrabarti, D. (2017). Research into Design for Communities, Volume 2. Proceedings of ICoRD 2017. Smart Innovation, Systems and Technologies. In Smart Innovation, Systems and Technologies, Vol. 2. https://doi.org/10.1007/978-981-10-3521-0_32

Chitmiea, A., Minciu, M., Manta, A., Ciocoiu, C. N. & Veith, C. (2021). The Drivers of Green Investment: A Bibliometric and Systematic Review. Sustainability, Vol. 13 No. 3507. https://doi.org/10.3390/su13063507

Figge, F., & Hahn, T. (2004). Sustainable Value Added - Measuring corporate contributions to sustainability beyond eco-efficiency. Ecological Economics, Vol. 48 No. 2, pp. 173-187. https://doi.org/10.1016/j.ecolecon.2003.08.005

Figge, F., & Hahn, T. (2002). Sustainable Value Added. Corporate Social Responsibility – Governance for Sustainability, pp. 1-21.

Ivanova, N. G., Katsyuba, I. A., & Firsova, E.A. (2021). Green finance. IOP Conference Series: Earth and Environmental Science, Vol. 689 No. 1. https://doi.org/10.1088/1755-1315/689/1/012003

Jankalová, M., & Kurotová, J. (2020). Sustainability assessment using economic value added. Sustainability (Switzerland), Vol. 12 No. 1, pp. 1-19. https://doi.org/10.3390/su12010318

Kahlenborn, W., Annica, C., Georgiev, I., Eisinger, F., & Hogg, D. (2017). Defining 'green' in the context of green finance (October Issue). https://doi.org/10.2779/285586

Kasem, E., Trenz, O., Hřebíček, J., & Faldík, O. (2015). Key Sustainability Performance Indicator Analysis for Czech Breweries. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, Vol. 63 No. 6, pp. 1937–1944.                                                                                                                        https://doi.org /10.11118/201563061937

Kassem, E., Trenz, O., Hřebíček, J., & Faldík, O. (2016). Sustainability Assessment Using Sustainable Value Added. Procedia – Social and Behavioral Sciences, Vol. 220, pp. 177–183. https://doi.org/10.1016/j.sbspro.2016.05.482

Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. Cogent Social Sciences, Vol. 5 No. 1. https://doi.org/10.1080/23311886.2019.1653531

Migliorelli, M. (2021). What Do We Mean by Sustainable Finance? Assessing Existing Frameworks and Policy Risks. Sustainability, Vol. 13 No. 975. https://doi.org/ 10.3390/su13020975

Migliorelli, M. & Dessertine, P. (2019). The Rise of Green Finance in Europe: Opportunities and Challenges for Issuers, Investors, and Marketplaces. http://www.palgrave.com/gp/series/14621

Straková, J. (2015). Sustainable value added as we do not know it. Business: Theory and Practise, Vol. 16 No. 2, pp. 168–173. https://doi.org/10.3846/btp.2015.453

# ETHICAL IDEALISM AND EMPLOYEE ENGAGEMENT: THE ROLE OF GRIT

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## ABSTRACT

Increased levels of employee burnout (e.g., Schaufeli et al., 2008) have instigated researchers to investigate work engagement (e.g., Schreurs et al., 2014). The main groups of antecedents of work engagement have included: (1) organizational factors (e.g., Decuypere & Schaufeli, 2020); (2) job factors (e.g., Farndale & Murrer, 2015; Stefanidis & Strogilos, 2021); and (3) individual factors (e.g., Schaufeli & Bakker, 2004). Nevertheless, the relationship between individual ethical dispositional characteristics and work engagement has received only sparse attention in the literature (Roof, 2015), with the focus being primarily on the healthcare industry (e.g., Zahrah et al., 2019). Interestingly, a recent study (Stefanidis et al., 2023) reported ethical idealism to positively predict employee levels of work engagement, a line of inquiry we follow in this study. We, consequently, examine the relationship between ethical idealism and work engagement, investigating the role of grit, a personality trait considered an antecedent of workplace outcomes, including employee retention, work engagement, and job performance (Duckworth, 2009).

Much of the research on work engagement has been conducted in Western countries, leading to calls for studies in more diverse contexts (Schaufeli et al., 2019). Given that the Arab world has become an attractive destination for an increasing number of international investors and corporations (Hutchings & Weir, 2006) and that it is culturally diverse from western countries (House, et al., 2004), in this research, we focus on investigating the work engagement of employees in Lebanon. To date, the limited number of studies that have been conducted in the Middle East region have only rendered diverse findings (Dirani, 2006; Robertson et al., 2001; Sidani & Gardner, 2000).

We administered a survey questionnaire translated from English into Arabic to 317 employees in organizations in Lebanon. We conducted regression analysis in PROCESS (Hayes, 2022) to examine the mediating effect of the two dimensions of grit, namely consistency of interest and perseverance of effort, on the relationship between ethical idealism and work engagement. The research findings indicated that the impact of ethical idealism on both consistency of interest and perseverance of effort was positive. Similarly, both perseverance of interest and consistency of effort had a positive impact

on employee levels of work engagement. However, although perseverance of effort fully mediated the relationship between ethical idealism and work engagement, consistency of interest mediated only partially this relationship. We refine theory of work engagement by nesting it within the Arab cultural context, and we discuss the contribution of our findings to human resource management scholarship and practice. Recommendations for future research are offered.

*Keywords: grit; ethics; work engagement; Arab world; perseverance of effort; consistency of interest*

## REFERENCES

Decuypere, A. and Schaufeli, W. (2020), "Leadership and work engagement: Exploring explanatory mechanisms", German Journal of Human Resource Management: Zeitschrift für Personalforschung, Vol. 34 No. 1, pp. 69-95.

Dirani, K.M. (2006), "Exploring socio-cultural factors that influence HRD practices in Lebanon", Human Resource Development International, Vol. 9 No. 1, pp. 85–98.

Duckworth, A.L., Quinn, P.D. and Seligman, M.E.P. (2009), "Positive predictors of teacher effectiveness", The Journal of Positive Psychology, Vol. 4 No. 6, pp. 540-547.

Farndale, E. and Murrer, I. (2015), "Job resources and employee engagement: A cross-national study", Journal of Managerial Psychology, Vol. 30 No. 5, pp. 610–626.

Hayes, A. F. (2022), Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3rd edition). New York: The Guilford Press.

House, R. J., Hanges, P., Javidan, M., Dorfman, P. and Gupta, V. (2004), Culture, leadership, and organizations. Sage Publications: Thousand Oaks, California.

Hutchings, K. and Weir, D. (2006), "Guanxi and Wasta: A comparison", Thunderbird International Business Review, Vol. 48 No. 1, pp. 141-56.

Robertson, C.J., Al-khatib, J.A., Al-Habib, M., and Lanoue, D. (2001), "Beliefs about work in the Middle East and the convergence versus divergence of values", Journal of World Business, Vol. 36 No. 3, pp. 223-244.

Roof, R.A. (2015), "The association of individual spirituality on employee engagement: The spirit at work", Journal of Business Ethics, Vol. 130 No. 3, pp. 585–599.

Schaufeli, W.B. and Bakker, A.B. (2004), "Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study", Journal of Organizational Behavior, Vol. 25 No. 3, pp. 293–315.

Schaufeli, W.B., Taris, T.W. and van Rhenen, W. (2008), "Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being?", Applied Psychology: An International Review, Vol. 57 No. 2, pp. 173–203.

Schaufeli, W.B., Shimazu, A., Hakanen, J., Salanova, M. and DeWitte, H. (2019), "An ultra-short measure for work engagement: The UWES-3 validation across five countries", European Journal of Psychological Assessment, Vol. 35 No. 4, pp. 577-591.

Schreurs, B.H.J., Van Emmerik, Ij. H., Van den Broeck, A. and Guenter, H. (2014), "Work values and work engagement within Teams: The mediating role of need satisfaction", Group Dynamics Theory Research and Practice, Vol. 18 No. 4, pp. 267-281.

Sidani, Y.M. and Gardner, W.L. (2000), "Work values among Lebanese workers", The Journal of Social Psychology, Vol. 140 No. 5, pp. 597-607.

Stefanidis, A. and Strogilos, V. (2021), "Perceived organizational support and work engagement of employees with children with disabilities", Personnel Review, Vol. 5 No. 1, pp.186-206.

Stefanidis, A., Banai, M. and Dagher, K.G. (2023), "Socio-cultural capital in the Arab workplace: Wasta as a moderator of the relationship between ethical idealism and work engagement", Employee Relations: An International Journal, Vol. 45 No. 1, pp. 21-44.

Zahrah, N., Aziz, A. and Abdul Hamid, S. (2019), "The role of moral competence in enhancing work engagement among nurses", International Journal of Management, Accounting and Economics, Vol. 6 No. 2, pp. 99-112.

# ECONOMIC SHOCKS AND EFFICIENCY: THE CASES OF LITHUANIA AND LATVIA

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## ABSTRACT

The challenges of recent years, including the economic shocks generated by the COVID-19 pandemic and the Russian–Ukrainian War, have heightened uncertainty in the economy. COVID-19 affected all economic sectors and caused a global economic downturn (Lace, 2022). Researchers from various countries have analysed aspects of this downturn, including the financial health of companies (Lace, 2022), the labour market (Ahrendt et al., 2020; 2021), work conditions and working hours (Eurostat, 2020), remote work (Wrycza and Maślankowski, 2020) and general impacts on business (Subaciene et al., 2022). This study investigates accounting specialists' perceptions of the changes in employee and company efficiency during the economic crisis provoked by the COVID-19 pandemic. Latvia and Lithuania were chosen as cases because they have similar economic, political and cultural histories, and their development was initiated under the same conditions, and they are developing at a similar level. The purpose of the research was to evaluate accounting specialists' perceptions of the changes in the efficiency of employees and companies. The study has the following objectives: 1) to analyse the changes in work conditions under quarantine and non-quarantine regimes; 2) to evaluate the changes in employee work efficiency; and 3) to assess the changes in company performance efficiency. The research employed an online questionnaire administered to accountants at various levels. A total of 387 responses were received; 182 were from Lithuanian enterprises and 205 from Latvian enterprises. The sample is sufficiently large to make the data statistically reliable at the 95% confidence level when the population is 100 million (Tamaševičius, 2015). Descriptive statistical data analysis methods were used for the evaluation of the survey results.

The first part of the questionnaire was devoted to the evaluation of the perception of accounting specialists of employees' efficiency of work in response to the shock-induced change in work conditions. The results show that even under usual conditions (non-quarantine), employees were able to work online for most of their working time. However, this opportunity was mainly taken up by employees of companies providing accounting services; in addition, Lithuanian respondents had greater online work opportunities than their Latvian counterparts. Under the quarantine regime, there was a slight increase in remote work opportunities. There was also a statistically significant difference between the countries in the share of work conducted online. Possibility to work online for more than

75% of their working time had 65.4% of Lithuanian employees and 47.3% of Latvian employees. When working online rather than in the office, the work efficiency of 34.2% of respondents increased, a quarter of respondents indicated a decrease in efficiency, and the same number experienced no change in efficiency. The respondents' opinions on their quarantine-period work efficiency, given the change to online work, were statistically significantly different. A total of 103 respondents identified an increase in work efficiency under the non-quarantine regime and only 85 under the quarantine regime; a decrease in efficiency was reported by 62 respondents under the non-quarantine regime and by 80 respondents under the quarantine regime. For Lithuanian companies, an increase in work efficiency was reported by 45.6% of respondents; in Latvia, only 11.8% of respondents reported an increase. A total of 73.9% of respondents agreed with the statement that the changes in form from in-office to online work changed their routine and opportunities to choose how they work; 21.7% disagreed. The results show statistically significant differences between countries: in Lithuania, 87.4% of respondents reported changes in their work routine compared to 56.4% in Latvia.

The second part of the questionnaire evaluated the perception of accounting specialists on the efficiency of company activities. According to the analysis, 58.7% of respondents indicated they saw an impact on company efficiency under the quarantine regime, while 35.4% did not. In the comparison of countries, the impact of the quarantine regime on efficiency was perceived by 73.1% of Lithuanian respondents and 45.9% of Latvian respondents. An increase in sales revenue level under the quarantine regime was reported by 13.7% of respondents, 43.7% reported a decrease, and 40% said there was no change. Only 3.4% of Latvian respondents indicated an increase in sales revenue, 50.7 % reported no change in sales revenue, Lithuanian respondents – 25.3% and 28%, respectively. In the full sample of accounting specialists, 44.4% reported that the cost of sales remained the same under both regimes. An increase was reported by 25.3% respondents and a decrease by 26.4% of respondents. The opinion of accounting specialists on the impact on profit was distributed as follows: 40.6% said there was no change, 29.3% reported a decrease, and 14% reported an increase. Salaries remained the same for 57.1% of respondents, decreased for 23.3%, and increased for 16.8%. The level of investments remained the same in 42.9%, decreased in 26.1%, and increased in 25.8% of companies. The survey results show that even before the economic shock and quarantine restrictions, employees had opportunities to work remotely. There was a slight increase in remote work during the quarantine period, and 22% of respondents reported an increase in work efficiency during that period. According to the perception of accounting specialists, the main financial indicators remained the same for around 40% of companies; there was no significant change in efficiency as companies found a way to adapt to the economic shock. Future research in the field could include a comparative analysis of companies' financial indicators during the periods of non-economic shocks and economic shocks.

*Keywords: economic shock, efficiency, perception, Lithuania, Latvia.*

## REFERENCES

Ahrendt, D., Cabrita, J.,Clerici, E., Hurley, J.; Leončikas, T., Mascherini, M., Riso, S., Sandor, E. (2020), Living, Working and COVID-19. Available at: https://www.eurofound.europa.eu/publications/report/2020/living-working-and-covid-19

Ahrendt, D., Cabrita, J.,Clerici, E., Hurley, J.; Leončikas, T., Mascherini, M., Riso, S., Sandor, E. (2021), Living, Working and COVID-19 (Update April 2021): Mental health and trust decline across EU as pandemic enters another year.   Available at: https://www.eurofound.europa.eu/publications/report/2021/living-working-and-covid-19-update-april-2021-mental-health-and-trust-decline-across-eu-as-pandemic

Eurostat (2020), Fall in hours worked more visible for women in Q1 Available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200714-1

Lace, N. (2022), "Crisis-Resilience of Enterprises and Overcoming the Negative Consequences of Covid-19", Paper presented at 21st International Conference Economy & Business, 22-25 August 2022 in Burgas, Bulgaria.

Subačienė, R., Tamulevičienė, D., & Christauskas, Č. (2022) "Covid-19 Pandemic Impact on Business: Case of Lithuania", In J. Dyczkowska (Ed.), Accounting and Business in a Sustainable Post--Covid World: New Perspectives and Challenges (pp. 26-44). Wroclaw: Publishing House of Wroclaw University of Economics and Business. DOI: 10.15611/2022.997.9.02

Tamaševičius, V. (2015), Tyrimų metodai (Research methods). Vilnius: Vilnius University Press

Wrycza S., Maślankowski J.(2020), "Social Media Users' Opinions on Remote Work during the COVID-19 Pandemic", Thematic and Sentiment Analysis. Systems Management, 37:4, 288-297, DOI: 10.1080/10580530.2020.1820631.

# THE FEATURES AND FUNCTIONALITIES OF MOBILE APPLICATIONS (APPS) IN THE FASHION INDUSTRY AND THEIR IMPACT ON CONSUMER PURCHASE INTENTION: IMPLICATIONS FOR THE METAVERSE

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## ABSTRACT

The rapid growth and widespread use of mobile technology has had a significant impact on many industries, including the clothing, textile, and fashion industries. In recent years, the use of mobile applications (apps) has become increasingly popular in these sectors, providing a convenient and accessible platform for consumers to engage with brands and make purchases. In the past decade much research has focused on the evolution of the use of this technology however, limited research exists on understanding how consumers interact with apps and the extent to which they impact on consumer purchase intention, As mobile technology and consumer expectations are constantly evolving. These include the use of Augmented Reality (AR), Virtual Reality (VR), 3D mobile scan applications, and how these technologies are incorporated into the metaverse (Idrees et al 2023a, Idrees 2023b). For fashion retailers to remain competitive, businesses and developers need to be proactive in incorporating new features and capabilities into their mobile apps and to understand the subsequent implications for evolving retail platforms such as the metaverse. For example, some fashion retailers are trying to leverage augmented reality (AR) to provide consumers with details on deals, products, and locations (Xue, 2023).

The aims of this paper are thus twofold. First, the paper aims to assess the mobile apps features and functionalities in the fashion industry and their impacts on consumer purchase intention. Second, this paper, based on the call by Idrees et al (2023a) aims to bridge a gap in the literature to examine the impact and implications of mobile apps for the metaverse amongst major fashion retailers.

A three-part questionnaire was developed and sent to the targeted participants (n=100). The results critique the various functions and benefits of these mobile apps, including personalization, convenience, and accessibility, as well as their impact on the consumer purchase intention; whilst considering the implications for the metaverse.

The findings revealed the benefits and drawbacks of using mobile apps for shopping and purchasing, and the factors that influence consumer adoption and usage. Additionally, the effectiveness of different features and functionalities of mobile apps, such as personalization, convenience, and accessibility, were examined in terms of their impact on driving consumer purchase intention. Furthermore, the

challenges and limitations of mobile applications in the fashion industry, including privacy and security concerns, are explored and are presented in a coherent framework (Hwang, 2023). Finally, the paper provides insights and recommendations for businesses, developers, and other stakeholders looking to capitalise on the potential of mobile apps in the clothing, textile, and fashion industries, with a focus on the metaverse.

*Keywords: mobile, applications, purchase intention, fashion, consumer*

## REFERENCES

Hwang, Y., Shin, H., Kim, K. and Jeong, S.H., 2023. The Effect of Augmented Reality and Privacy Priming in a Fashion-Related App: An Application of Technology Acceptance Model. Cyberpsychology, Behavior, and Social Networking, 26(3), pp.214-220.

Idrees, S., Gill, S. & Vignali, G. (2023a) Mobile 3D Body Scanning Applications: A Review of Contact-Free AI Body Measuring Solutions for Apparel. Journal of The Textile Institute

Idrees, S., Vignali, G. & Gill, S. (2023b). Interactive Marketing with Virtual Commerce Tools: Purchasing Right Size and Fitted Garment in Fashion Metaverse. Edited by C L Wang in The Palgrave Handbook of Interactive Marketing ISBN 978-3-031-14960-3 https://doi.org/10.1007/978-3-031-14961-0

Xue, L., Parker, C.J. and Hart, C.A., 2023. How augmented reality can enhance fashion retail: a UX design perspective. International Journal of Retail & Distribution Management, 51(1), pp.59-80.

# SOCIAL INNOVATION THROUGH STUDENT ENTREPRENEURSHIP

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## ABSTRACT

We have embedded critical management studies in our business and management undergraduate and postgraduate courses to offer a purposeful outlet for department research that helps students see and challenge prevailing institutional and societal norms.

In our recently launched final-year Community Project unit on our undergraduate course, 90 students are working with local communities to deliver a project in partnership with a social enterprise to contribute to a social innovation that will help solve a community-related problem or exploit a community-related opportunity that meets a recognised social need within a city borough. Students map the social enterprise ecosystem of all ten boroughs within Greater Manchester in the United Kingdom, aligning an intervention to key social objectives of the Greater Manchester Combined Authority, local borough strategy, and within the social enterprise ecosystem of the borough, culminating in an event in partnership with a social enterprise (GMCA, 2021). Examples of projects included co-hosting a panel discussion on women's safety in Manchester city centre, and co-creating a networking event to connect urban allotments with local foodbanks.

This builds on from an earlier unit, where over 600 students apply their entrepreneurial skills to a real-world community problem. A unit that was launched in the pandemic, to offer a practical way for students to engage remotely with struggling communities and community organisations. This unit works in partnership with a range of stakeholders: local government, social enterprises, housing associations and volunteer organisations.  Students develop skills in research, analysis, teamwork, ideation, mock prototyping and creative video creation. The unit develops innovative responses from students working in teams to address community problems situated within a particular borough's policy landscape within Greater Manchester. Students identify local trigger cases (such as ageing ethnic population, littering, homelessness, women's safety and high street renewal), research the problem and policy landscape, analyse the issues and then create viable social enterprise solutions with identified funding.

The importance of students understanding the social enterprise ecosystem of the district and borough in which the University is key to helping develop meaningful and lasting relationships with key partners. These projects have a sustained positive impact on real-world community challenges that are important to the ecosystem of the district and borough in which our University is located. These

projects contribute to the University's civic agenda (Greater Manchester Universities, 2021; Manchester Metropolitan University, 2022) and develop responsible citizens of the future (Henfrey, 2022; United Nations, 2015; SDSN, 2022).

*Keywords: Social Innovation, Community, Social Impact, Civic Society, Student Entrepreneurship, Civic Partnership, Social Enterprise Eco-System, Experiential Learning, Responsible Citizens, Social Justice*

## REFERENCES

Greater Manchester Combined Authority. (2021). Greater Manchester Strategy 2021-2031. Available online: https://aboutgreatermanchester.com/media/jlslgbys/greater-manchester-strategy-our-plan.pdf [Accessed 20th June 2023].

Greater Manchester Universities. (2021) Civic University Agreement. Available Online: https://www.greatermanchesteruniversities.org/ [Accessed 20th June 2023].

Henfrey, T., Feola, G., Penha-Lopez, G., & Sekulova, F. (2022). Rethinking the sustainable development goals: Learning with and from community-led initiatives. Sustainable Development, 31, 211-222.

Manchester Metropolitan University. (2022). Our strategy: Our ambition for the future. Available Online: https://www.mmu.ac.uk/sites/default/files/2022-04/Manchester-Met-Strategy-Booklet-2022.pdf. [Accessed 20th June 2023].

Reeves, A. (2019). Classroom collaborations: Enabling sustainability education via student-community co-learning. International Journal of Sustainability in Higher Education, 20, 1376-1392.

SDSN. (2020). Accelerating education for the SDGs in universities: A guide for universities, colleges, and tertiary and higher education institutions. SDSN, New York.

United Nations. (2015). Transforming our world: the 2030 agenda for sustainable development. United Nations, New York.

# UNDERSTANDING CONSUMERS OF GREEN COSMETICS ADOPTING A STIMULUS-ORGANISM-RESPONSE APPROACH

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## ABSTRACT

## RESEARCH GAP AND STUDY AIM

Green cosmetics are becoming increasingly popular among consumers and their market it is expected to reach a value of $ 54.5 billion in 2027 (Sadiq et al., 2021), thanks to the growing consumers' interest towards healthy and environmentally friendly products (Mansoor et al., 2022; Kumar et al., 2021). However, despite this growing interest, most consumers continue to prefer conventional cosmetics, in fact, green cosmetics, according to the latest available data, accounted for only 15% of the overall cosmetic market value (Sadiq et al., 2021). To date, it is not clear why there is this discrepancy between growing interest and low market share. It is assumed that there are several inhibitors that work as a deterrent to the purchase of green cosmetics. Previous studies on consumers' intention to purchase green cosmetics have mainly focused on facilitators of the decision-making process, while little is known about the barriers (inhibitors) that inhibit the intention to purchase green cosmetics (Sadiq et al., 2021). Therefore, this study aims to bridge this gap, trying to better explain the factors affecting purchase intention towards green cosmetics of a probabilistic sample of Italian consumers. To reach this aim the stimulus-organism-response (SOR) paradigm was chosen as a theoretical framework (Mehrabian and Russell, 1974). The SOR paradigm allows us to understand the interconnection among external stimuli (S), that come from the surrounding environment, such as (health consciousness and environmental concern), the organism (O), represented by consumers' internal state, characterized by a set of facilitators (personal attitudes and social norms) and a set of inhibitors (value and risk barriers). Finally, the interconnection between stimuli (S) and organism (O) determines the consumers' final response (R), that is the purchase intention.

## MATERIALS AND METHODS

Data were collected by a professional marketing agency through an online survey conducted in Italy in October 2022 on a probabilistic sample of 1008 Italian consumers of cosmetics. The mean age of respondents is 49.72 (SD= 15.25) years and 76% are female. To analyse and verify the relationships proposed in the conceptual model, the partial least square-structural equation modelling (PLS-SEM) method has been adopted (Hair et al., 2019). To measure the constructs, the following pre-validated

scales have been utilized: health consciousness with nine-item scale from Gould (1988); environmental concern with six-item scale from Knight (2008); attitudes and social norms with five-item and three-item scales both from Ghazali et al. (2017); value barrier with three-item scale from Sadiq et al. (2021); risk barrier with three-item scale from Sadiq et al. (2021) and Tandon et al. (2021). Each utilized item has been measured on a 5-point Likert scale ranging from 'Totally disagree' to 'Totally agree'. Finally, purchase intention has been generated with the respondents' probability to buy a green cosmetic in the future, resulting in a score ranging from zero to ten.

## RESULTS AND DISCUSSION

As regards the measurement model, all values of composite reliability (CR), rho_A and Cronbach's alpha ($\alpha$) are above 0.7 values showing a constructs' reliability, while items with weak factor loadings have been eliminated (Hair et al., 2019). Moreover, since the average variance extraction (AVE) is over the threshold value of 0.5, and square root of each construct's AVE is greater than the inter-structural correlation, the convergent and discriminant validity of model are confirmed (Hair et al., 2019). Finally, since all constructs have a variance inflation factor (VIF) value below 3.3 there is no critical level of multicollinearity concern as well as the Harman one-factor test has shown the absence of a common bias (Gallagher et al., 2022). The results of structural model show that external stimuli positively influence attitudes and above all social norms, highlighting that health and environment are key stimuli for consumers of green cosmetics (Kumar et al., 2021; Ghazali et al., 2017). Surprisingly, a greater healthy and environmentally awareness negatively affects value barrier, while risk barrier is weakly influenced only by environmental concern. This is because the more consumers are aware, the more they have doubts about the real benefits of green cosmetics compared to conventional ones, being confused for the lack of a standard regulation and labelling framework (Sadiq et al., 2021). Value barrier, in fact, has the stronger inhibitory force on purchase intention than risk barrier, highlighting that firstly consumers are aware that in the current market there are several not clear products and, subsequently they do not recognize a price premium for these products that are considered also greenwashed (Sadiq et al., 2021). Conversely, findings show that even if both facilitators are two important drivers in decision-making process of green cosmetics (Ali et al., 2022), consumers attribute increasingly importance to other people choices rather than their individual feelings (Mansoor et al., 2022). Finally, results show that product knowledge moderates the relationships between environmental concern and value barrier, as well as between social norms and value barrier and purchase intention, confirming that it plays a key role in green cosmetic consumers (Ghazali et al., 2017).

## CONCLUSIONS

The establishment of a specific regulation framework could increase purchase intention towards green cosmetics especially in more healthy and environmental conscious consumers, reducing their confusion and perceiving them as added value products. Moreover, since the product knowledge moderates effects of the most significant facilitators and inhibitors (i.e., social norms and value barrier), it appears evident that the adoption of effective firms' advertisements involving celebrities or influencers as well as specific education campaigns could improve purchase intention towards these more sustainable products.

*Keywords: Keywords: Consumer behaviour; Facilitators; Inhibitors; Product knowledge; Purchase intention; Stimulus-Organism-Response.*

## REFERENCES

Ali, S., Usama Javed, H.M., Ali, W. and Zahid, H. (2022), "Decoding men's behavioral responses toward green cosmetics: an investigation based on the belief decomposition approach", Journal of Environmental Planning and Management, 1-28.

Gallagher, R., Raimondo, M. and Caracciolo, F. (2022), "Eating the "inedible": How to improve the consumption of the perceived inedible parts of fruits and vegetables in Ireland and Italy?", Food Quality and Preference, 99, 104548.

Ghazali, E., Soon, P.C., Mutum, D.S. and Nguyen, B. (2017), "Health and cosmetics: Investigating consumers' values for buying organic personal care products", Journal of Retailing and Consumer Services, 39, 154-163.

Gould, S.J. (1988), "Consumer attitudes toward health and health care: a differential perspective", J. Consum. Aff. Vol. 22 No. 1, pp. 96–118.

Hair, J. F., Risher, J. J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", European Business Review, Vol. 31 No. 1, pp. 2–24.

Knight, A. J. (2008). "Bats, snakes and spiders, Oh my! How aesthetic and negativistic attitudes, and other concepts predict support for species protection". Journal of Environmental Psychology, Vol. 28 No. 1, pp. 94-103.

Kumar, S., Dhir, A., Talwar, S., Chakraborty, D. and Kaur, P. (2021), "What drives brand love for natural products? The moderating role of household size", Journal of Retailing and Consumer Services, 58, 102329.

Mansoor, M., Saeed, A., Rustandi Kartawinata, B. and Naqi Khan, M.K. (2022), "Derivers of green buying behavior for organic skincare products through an interplay of green brand evaluation and green advertisement", Journal of Global Fashion Marketing, Vol. 13 No. 4, pp. 328-343.

Mehrabian, A. and Russell, J.A. (1974), An Approach to Environmental Psychology, The MIT Press.

Sadiq, M., Adil, M. and Paul, J. (2021), "An innovation resistance theory perspective on purchase of eco-friendly cosmetics", Journal of Retailing and Consumer Services, 59, 102369.

Tandon, A., Jabeen, F., Talwar, S., Sakashita, M. and Dhir, A. (2021), "Facilitators and inhibitors of organic food buying behavior", Food Quality and Preference, 88, 104077.

# IMPROVING INVENTORY DECISIONS WITH THE OPTIMIZATION PROCESS.

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## ABSTRACT

Supply Chain Management is a field of growing interest for businesses, government agencies, and researchers. It consists of the management of material, information, and financial flows in a logistics distribution network composed of vendors, manufacturers, distributors, and customers. A business delivers its products to its customers by using a logistics distribution network. Typically, a network consists of product flows from the producers to the customers through transshipment points, warehouses, and retailers. In addition, involves a methodology for handling the products in each of the levels of the logistics distribution network (the choice of an inventory policy, or the transportation modes to be used). Designing and controlling a logistics distribution network involves different levels of decision-making, which are not independent of each other but exhibit interactions. The options and corresponding costs experienced at that level clearly depend on choices made at the longer-term tactical level. The study of the optimization problem in the Supply Chain will integrate transportation and inventory decisions, to improve the logistics distribution network. This paper presents a model for improving inventory decisions with the optimization process.

*Keywords: Supply chain management, cost, logistic distribution, optimization.*

# WORKPLACE FLEXIBILITY PRACTICES AND ORGANIZATIONAL PERFORMANCE: ANALYZING THE ROLES OF LEADERSHIP, ICT AND TRUST

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## ABSTRACT

Workplace flexibility practices gained momentum during the last years as it is beneficial for employees as well as organizations, e.g., in recruiting and retaining highly qualified employees in the war for talent (Beham et al., 2015; Illegems and Verbeke, 2004; Illegems et al., 2001; Iscan and Naktiyok, 2005; Kossek et al., 2006). Especially the flexibility to work where and when enables employees – and is therefore advantageous for those – to work anytime and anywhere, like in cafes, train stations etc. (Hill et al., 2008; Kingma, 2016; Oldenburg, 2001, 1999; Oldenburg and Brissett, 1982).

This work is re-visiting previous research which raised the claim for analyzing all types of workplace flexibility practices in one all-encompassing model in small and medium sized enterprises (SMEs) (Tirrel et al., 2021a). Theoretically, it is based on the flexibility firm theory (Chatterjee et al., 2022; Rodgers, 1992). Previous studies, like that of Martínez-Sánchez et al. (2008) as well as Whyman and Petrescu (2015) focus on certain individual but not all comprehensive workplace flexibility practices. However, this combined analysis offers the possibility to identify and analyze interdependencies between workplace flexibility practices (Whyman and Petrescu, 2015). Moreover, previous research is lacking the aspects of information and communication technology (ICT) as well as trust when researching flexible work. Especially the combination of ICT and leaderships calls for heightened attention (Chatterjee et al., 2023; Van Wart et al. 2017; Tirrel et al., 2022, 2021b) as information sharing and communication are possible without working at the same location or time (Cowan, 2014; Darics, 2020; Hou, 2020; Kingma, 2016; Sharpp et al., 2019). This comprises the gap for this research and leads to the following research questions:

RQ1:    Is there any influence of workplace flexibility practices on company performance?

RQ2:    How can workplace flexibility practices influence each other?

RQ3:    Is there any influence of (1) leadership, (2) ICT or (3) trust on flexible work?

Thus, a conceptual framework based on existing literature and qualitative research (Tirrel et al., 2021a) will be analyzed using partial least squares structural equation modeling (PLS-SEM) (Hair et al., 2022).

Thus, hypotheses were derived which will be analyzed using SmartPLS version 3.3.9 (Ringle et al.,

2015). According to Henseler (2017), this is the most comprehensive software for PLS-SEM analysis. After the measurement model analysis, the structural model will be analyzed, enabling the researcher to assess the significance and relevance of relationships (Hair et al., 2022). In addition, advanced PLS-SEM analysis, i.e., moderation and mediation analysis, will be conducted. Finally, the authors will present a validated model with its evaluated relationships.

It is anticipated that the relevance of workplace flexibility practices in relation to SME performance is identified. This will make it easier for companies to decide whether to introduce and use workplace flexibility practices. Moreover, insights will be provided on how leadership works in flexible work arrangements and how ICT intervenes the relationship between leadership and working flexibly. Therefore, this study contributes to the theory of leadership as it is influenced by the skilled use of ICT. Furthermore, the analysis of the conceptual framework on workplace flexibility practices with their interrelations contributes to new knowledge.

*Keywords: workplace flexibility practices, leadership, information and communication technology, structural equation modeling, small and medium sized enterprises (SMEs)*

## REFERENCES

Beham, B., Baierl, A. and Poelmans, S. (2015), "Managerial telework allowance decisions – a vignette study among German managers", International Journal of Human Resource Management, Vol. 26 No. 11, pp. 1385-1406.
Chatterjee, S., Chaudhuri, R., Vrontis, D. and Giovando, G. (2023), "Digital workplace and organization performance: Moderating role of digital leadership capability", Journal of Innovation & Knowledge, Vol. 8, 100334.
Chatterjee, S., Chaudhuri, R. and Vrontis, D. (2022), "Does remote work flexibility enhance organization performance? Moderating role of organization policy and top management support", Journal of Business Research, Vol. 139, pp. 1501-1512.
Cowan, L.D. (2014), "E-Leadership: Leading in a virtual environment - guiding principles for nurse leaders", Nursing economic$, Vol. 32 No. 6, pp. 312-322.
Darics, E. (2020), "E-leadership or "How to be boss in instant messaging?" The role of nonverbal communication", International Journal of Business Communication, Vol. 57 No. 1, pp. 3-29.
Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2022), A primer on partial least squares structural equation modeling, third edition, Thousand Oaks: Sage Publications.
Henseler, J. (2017), "Partial least squares path modeling", In: Leefang, P.S.H., Wieringa, J.E., Bijmolt, T.H.A. and Pauwels, K.H. eds. Advanced methods for modeling markets, Cham: Springer, pp. 361-381.
Hill, J.E., Grzywacz, J.G., Allen, S., Blanchard, V.L., Matz-Costa, C., Shulkin, S. and Pitt-Catsouphes, M. (2008), "Defining and conceptualizing workplace flexibility", Community, Work & Family, Vol. 11 No. 2, pp. 149-163.
Hou, C. (2020), "The effects of IT infrastructure integration and flexibility on supply chain capabilities and organizational performance: An empirical study of the electronics industry in Taiwan", Information Development, Vol. 36 No. 4, pp. 576-602.
Illegems, V. and Verbeke, A. (2004), "Telework: What does it mean for management?", Long Range Planning, Vol. 37 No. 4, pp. 319-334.
Illegems, V., Verbeke, A. and S'Jegers, R. (2001), "The organizational context of teleworking implementation", Technological Forecasting and Social Change, Vol. 68 No. 3, pp. 275-291.
Iscan, O.F. and Naktiyok, A. (2005), "Attitudes towards telecommuting: The Turkish case", Journal of Information Technology, Vol. 20 No. 1, pp. 52-63.
Kingma, S.F. (2016), "The constitution of 'third workspaces' in between the home and the corporate office", New Technology, Work and Employment, Vol. 31 No. 2, pp. 176-193.

Kossek, E.E., Lautsch, B.A. and Eaton, S.C. (2006), "Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work-family effec-tiveness", Journal of Vocational Behavior, Vol. 68 No. 2, pp. 347-367

Martínez-Sánchez, A., Pérez-Pérez, M., Vela-Jiménez, M.J. and de-Luis-Carnicer, P. (2008), "Telework adoption, change management, and firm performance", Journal of Organizational Change Management, Vol. 21 No. 1, pp. 7-31.

Oldenburg, R. (2001), "Introduction", in:Oldenburg, R. (Ed.), Celebrating the third place. Inspiring stories about the "great good places" at the heart of our communities, Marlowe & Company, New York, pp. 1-8.

Oldenburg, R. (1999), The great good place. Cafés, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community, Da Capo Press, a member of Perseus Books Group, New York, Cambridge, MA.

Oldenburg, R. and Brissett, D. (1982), "The third place", Qualitative Sociology, Vol. 5 No. 4, pp. 265-284.

Ringle, C.M., Wende, S. and Becker, J. (2015), SmartPLS 3 [Internet]. Boenningstedt: SmartPLS GmbH. Available from <https://www.smartpls.com> [Accessed 17 March 2022].

Rodgers, C.S. (1992), "The flexible workplace: What have we learned?", Human Resource Management, Vol. 31, No. 3, pp. 183-199.

Sharpp, T.J., Baker, D., Lovelace, K. and Cowan, L.D. (2019), "Perspectives of nurse managers on information communication technology and e-leadership", Journal of Nursing Management, Vol. 27 No. 7, pp. 1554-1562.

Tirrel, H., Kaufmann, H.R. and Winnen, L. (2022), "Introducing a new technological scale for virtual leadership", In: Vrontis, D., Weber, Y. and Tsoukatos, E. eds. 15th Annual Conference of the EuroMed Academy of Business – Sustainable Business Concepts and Practices, Palermo, Italy, EuroMed Press, pp. 1433-1435.

Tirrel, H., Kaufmann, H.R. and Winnen, L. (2021a), "Why not to work in flexible workplaces? A systematic literature review and development of a conceptual framework for SMEs", International Review of Entrepreneurship (IRE), Vol. 19 No. 4, pp. 555-584.

Tirrel, H., Kaufmann, H.R. and Winnen, L. (2021b), "Using information and communication technology in leadership – development of a scale", in 14th Annual Conference of the EuroMed Academy of Business – Contemporary Business Concepts and Strategies in the new Era, virtual conference, EuroMed Press, pp. 1011-1013.

Van Wart, M., Roman, A., Wang. X. and Liu, C. (2017), "Integrating ICT adoption issues into (e-)leadership theory", Telematics and Informatics, Vol 34 No. 5, pp. 527-537.

Whyman, P.B. and Petrescu, A.I. (2015), "Workplace flexibility practices in SMEs: Rela-tionship with performance via redundancies, absenteeism, and financial turnover", Journal of Small Business Management, Vol. 53 No. 4, pp. 1097-1126.

# VARIABLE MAPPING AS A NEW METHOD IN BIBLIOMETRICS

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## ABSTRACT

This article aims to identify to what extent variable mapping - a new approach to science mapping – can improve research problem formulation and content/thematic analysis for literature reviews.

Science mapping is one of the key techniques in bibliometric analysis and it states for visual data presentation (Chen, 2017). Its classic approach that dominates today consists of mapping areas, keywords, terms, authors, or citations (León-Castro et al., 2021). The use of science mapping software tools (i.e., VOSviewer, SciMAT, Pajek) in recent publications involves the implementation of a literature review (Moral- Muñoz et. Al., 2020, McAllister et al., 2022) and it is helpful in areas with a relatively high number of publications, such as integrated marketing communications or digital marketing (Aksoy et al., 2021, Leon-Castro et al., 2021, Gao et al. 2021). Science mapping helps other researchers to understand the main areas of research thanks to the possibility of quick analysis of annual literature volume, leading countries, journals, authors and critical subject clusters (Avila - Robinson & Wakabayashi, 2018). However, this approach is relatively general and makes it impossible to draw precise conclusions about the studied literature.

Variable mapping is a new method of literature mapping which offers a new perspective on the results of scientific research presentation (Tomczyk, 2022). It enables the clustering of variable, not just keywords, scientific articles or authors. From a practical point of view, it can be the basis for the development of an application that could improve scientists' work on literature reviews.

This article answers the question wether variable mapping takes advantage over the classic science mapping approach in terms of research problem formulation and content/thematic analysis.

In the study, an IDI method was used. A group of 7 expert scientists from Poland compares a classic keyword map made with VOSviewer with a variable map made manually by the author of this article using the same group of 5 example scientific articles on customer ideation. The scientists were assesing the usefulness of both maps in the field of research problem formulation and content/thematic analysis. The analysis shows the advantage of variable mapping in the research problem formulation and thematic/content analysis. The variable map helps to identify the research gap in much more visible and clear way than the classic one. The associations between variables stand for the current state of art presentation in the particular field. The researchers emphasize the high level of unambiguity and adequacy of the variable map. They indicate that the classic metadata map shapes the metapicture of science, while the map of variables shapes its real one.

The abstract compared science maps made with the classic science mapping approach (VOSviewer) and the variable mapping method. We verified the usefulness of both approaches in research problem formulation and thematic/content analysis. The results of the analysis show that variable mapping in both cases is more effective than classic mapping.

Demonstrating the advantage of the new approach over the classic one may be a significant step towards developing a new way of the synthesis of literature and its reviews. The limitation of this method is the use only for the analysis of quantitative research. The directions of future research include further testing of its adequacy to describe the scientific achievements in a given field (not only management) and testing the prototype of the web application for such maps creation.

*Keywords: science mapping, variable mapping, scientometrics, bibliometrics, VOSviewer, customer ideation, Poland*

## REFERENCES

Aksoy, N. C., Kabadayi, E. T., & Alan, A. K. (2021). Digital Marketing: Reviewing the Field Through Science Mapping Technique. Handbook of Research on Technology Applications for Effective Customer Engagement, IGI Global, 141-162.

Ávila-Robinson A. & Wakabayashi N. (2018), „Changes in the structures and directions of destination management and marketing research: A bibliometric mapping study, 2005–2016", Journal of Destination Marketing & Management, Vol. 10, 101-111.

Chen, C. (2017). Science Mapping: A Systematic Review of the Literature. Journal of Data and Information Science, 2(2), 1–40.

Gao, P., Meng, F., Mata, M. N., Martins, J. M., Iqbal, S., Correia, A. B. & Farrukh, M. (2021). Trends and future research in electronic marketing: A bibliometric analysis of twenty years. Journal of Theoretical and Applied Electronic Commerce Research, 16(5), 1667-1679.

León-Castro, M., Rodríguez-Insuasti, H., Montalván-Burbano, N., & Victor, J. A. (2021). Bibliometrics and Science Mapping of Digital Marketing. Smart Innovation, Systems and Technologies (Vol. 205, Issue March). Springer Singapore, 95-107.

McAllister, J. T., Lennertz, L., & Atencio Mojica, Z. (2022). Mapping a discipline: a guide to using VOSviewer for bibliometric and visual analysis. Science & Technology Libraries, 41(3), 319-348.

Moral-Muñoz, J. A., Herrera-Viedma, E., Santisteban-Espejo, A., & Cobo, M. J. (2020). Software tools for conducting bibliometric analysis in science: An up-to-date review. Profesional de La Informacion, 29(1), 1–20.

Tomczyk, P. (2022). The picture of the science - path meta-modelling. An example of management sciences. Manuscript presented at the EMAC Annual Conference 2022, Budapest.

# DEVELOPING A NEW MODEL OF MEASURING INTELLECTUAL CAPITAL AND UNACCOUNTED INTANGIBLES IN AN INTEGRATED THINKING CONTEXT.

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## ABSTRACT

Much more attention to intangibles has been given by a new conceptualisation of the firm that was born in the last millennium. Nowadays, intangibles are becoming determinants of the economic and financial firm's value (Canibano *et al.*, 2000). As a matter of fact, a new visualisation of the economy has been growing, characterised by a virtual component. Therefore, this on-going progress of the growing-relevance of the intangibles has been leading, for some cases, to consider that intangible assets are worth. This progress conducted the enterprises to review the business models, mainly influenced by exceeding the value of investments in tangibles with reference to intangible assets (Chiucchi and Dumay, 2015, Haskel and Westlake, 2017). Thus, it emerges the need for deserving attention to intangible assets and intellectual capital (Garanina *et al.*, 2020). According to the existing literature, it is not so easy to identify precise boundaries between intangible assets and intellectual capital. Generally, European academics refer to "intellectual capital" whereas in the USA it is used to say "intangible asset" (Cuozzo *et al.*, 2017; Lev, 2000). Often, these terminologies are interchangeable (Caddy, 2000). Since the on-going development of the investment-attitude towards this virtual economy, it is worth noting that the prominence of the intellectual capital is worth nowadays (Dumay, 2016). Intellectual capital has been investigating and debating for a long time, and, despite this wide scenario of discussion, scholars are still struggling with the definition of its boundaries. This is mainly due to the presence of many definitions that, in several cases, are similar to the others. For instance, the intellectual capital has been defined as the possession of the knowledge, applied experience, organisational technology, customer relationships, and professional skills (Edvinsson and Malone, 1997), the economic value of the organisational and the human capital (Organisation for Economic Co-operation and Development, 1999) or is a competitive advantage that companies and employees possess and it is a whole set of knowledge (Bontis, 2001). According to Edvinsson and Malone (1997) the intellectual capital consists of three main components. The first one is the human capital that is the knowledge, skills and expertise owned by individuals. It corresponds to the individual expertise, values, attitudes, motivations, behaviours and skills to transfer knowledge among contexts (Bontis, 1998). It can be considered as a key driver of corporate reputation because of the positive influence

with various measures of financial performance (Ginesti *et al.*, 2018). The second component is the organisational capital that allows the human capital to express its effects. Generally, this depends on the owning of patents, licences or databases. The last component is the relational capital that relies on the interdependencies with stakeholders. These premises have highlighted the linkage of the intangible assets and intellectual capital with corporate's performance (Bayraktaroglu *et al.*, 2019), firm value (Orens *et al.*, 2009) and innovation (Buenechea-Elberdin, 2017), among the others. In summary, intangible assets and intellectual capital are drivers of value creation. The value creation process is linked to the main aim provided by the IIRC in the definition of integrated thinking. In more detail, the integrated thinking is defined as (IIRC, International IR Framework 2021, p. 3): "*the active consideration by an organisation of the relationships between its various operating and functional units and the capital that the organisation uses or affects. Integrated thinking leads to integrated decision-making and actions that consider the creation, preservation or erosion of value over the short, medium and long term*". Prior academics have identified a measure of determining a level of integration of financial and non-financial aspects into the company's strategy, governance and performance (Busco *et al.*, 2019). Such a level has been defined as the level of integrated thinking and reporting (ITR). Thus, the research aims at investigating whether the disclosure about unaccounted intangibles and intellectual capital (Disc_Int_IC) – measured according to the academic debate about it (e.g., Schiemann *et al.*, 2014) – positively or negatively affects the level of ITR. The research employs an empirical analysis based on the first 5,000 companies with the highest market capitalization, listed in Europe Stock Market. All data have been derived from Datastream Thomson Reuters by focusing on the last available items. This procedure allows the development of the ITR_Score and the Disc_Int_IC_Score. Both of them rely on KPIs previously studied by the academic literature (Schiemann *et al.*, 2014; Busco *et al.*, 2019). Therefore, the authors expect that Disc_Int_IC positively affects the level of ITR.

The research has theoretical and practical implications. From the practical side, it may be framed as an instrumental asset mainly anchored to this innovative mind-set proposed by the integrated thinking for delineating the enterprise value and its performance. Theoretically, it is a way for enriching the research about the assessment of unaccounted intangible assets in a context of integrated reporting.

*Keywords:* intangible assets, intellectual capital, integrated reporting, integrated thinking

## REFERENCES

Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. Journal of Intellectual Capital.
Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. Management decision, 36(2), 63-76.

Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. International journal of management reviews, 3(1), 41-60.

Buenechea-Elberdin, M. (2017). Structured literature review about intellectual capital and innovation. Journal of Intellectual capital.

Busco, C., Malafronte, I., Pereira, J., & Starita, M. G. (2019). The determinants of companies' levels of integration: does one size fit all?. The British Accounting Review, 51(3), 277-298.

Caddy, I. (2000). Intellectual capital: recognizing both assets and liabilities. Journal of intellectual capital;

Canibano, L., M. Garcia-Ayuso, and P. Sanchez, 2000, Accounting for intangibles: a literature review, Journal of Accounting Literature19, 102–130;

Chiucchi, M. S., & Dumay, J. (2015). Unlocking intellectual capital. Journal of Intellectual Capital;

Cuozzo, B., Dumay, J., Palmaccio, M., & Lombardi, R. (2017). Intellectual capital disclosure: a structured literature review. Journal of Intellectual Capital, 18(1), 9-28.

Dumay, J. (2016), "A critical reflection on the future of intellectual capital: from reporting to disclosure", Journal of Intellectual Capital, Vol. 17 No. 1, pp. 168-184;

Edvinsson, L., & Malone, M. S. (1997). Intellectual Capital (HarperBusiness, New York, NY).

Garanina, T., Hussinki, H., & Dumay, J. (2021). Accounting for intangibles and intellectual capital: A literature review from 2000 to 2020. Accounting & Finance, 61(4), 5111-5140.

Ginesti, G., Caldarelli, A., & Zampella, A. (2018). Exploring the impact of intellectual capital on company reputation and performance. Journal of Intellectual Capital.

Haskel, J., & Westlake, S. (2017). Capitalism without capital. In Capitalism without Capital. Princeton University Press.

Lev, B. (2000). Intangibles: Management, measurement, and reporting. Brookings institution press;

Orens, R., Aerts, W., & Lybaert, N. (2009). Intellectual capital disclosure, cost of finance and firm value. Management Decision.

Petty, R., & Guthrie, J. (2000). Intellectual capital literature review: measurement, reporting and management. Journal of intellectual capital, 1(2), 155-176.

Schiemann, F., Richter, K., & Günther, T. (2015). The relationship between recognised intangible assets and voluntary intellectual capital disclosure. Journal of applied accounting research.

# TERRITORIAL MARKETING AS A LOCAL DEVELOPMENT STRATEGY: TWO CASE STUDIES FROM AN ITALIAN REGION

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## ABSTRACT

The objective of the paper is to analyse the impact that territorial marketing strategies adopted by companies can have on local development. To this end, two case studies of companies have been selected, due to their strong ties with the territory. In fact, products and services offered to their target customers are intrinsically linked to both the culture and the morphological characteristics of the place where they are located, which cannot be reproduced elsewhere. More in detail, both cases are multi-generation family-run farms specialising in the production of organic pasta (company A) and wine (company B) respectively.

Territorial marketing refers to a complex of activities that have, as their purpose, the definition of projects, programmes, and strategies aimed at guaranteeing the long-term development of a given area (Dinis, 2004; Hassib and Ibtissem, 2018). Territorial marketing activities, whatever geographical area they refer to, start from an accurate analysis of two aspects: i) the cultural and naturalistic strengths of the territory, and ii) the target of users potentially interested (Bagautdinova *et al.*, 2012). With reference to the second aspect, it is a matter of identifying the catchment area, which can be, for example, national, international, families, young people, etc. Indeed, territorial marketing becomes effective when it succeeds in attracting the right target, i.e. tourism in line with the area's characteristics (Florek, 2003). Successful strategies highlight the strengths of an area and thus enable entire geographical areas to be revalued. In this sense, the activity aims to build a strong place brand identity capable of driving regional development (Kotler and Gertner, 2004).

To understand the impact territorial marketing strategies have on regional development in the Marche region, we adopted a case study approach (Tellis, 1997). The case study methodology is useful for understanding the "how" and "why" the occurrence of certain events; it allows to examine phenomena and processes of a complex nature, as well as to compare new empirical results with those obtained from previous studies (Yin, 2018). Several authors have already conducted several studies to analyse separate aspects related to territorial marketing and regional/local development (Bagautdinova *et al.*, 2012; Lerro and Schiuma. 2009; Semian and Chromý, 2014). However, it is not possible to identify a specific pattern valid for every region, company, product and/or service. Hence the need to adopt the case study methodology emerges, in order to consider the peculiarities of the different processes implemented by companies, each of which is characterized by a high level of uniqueness.

Company A was founded in 1971 with the mission to regenerate inner areas at risk of depopulation with initiatives aimed at enhancing and supporting the ancient farming civilisation. The company began its activity by initially producing milk and dairy products, and then increasingly concentrated on the sale of Italian wheat flour and 100% wholemeal pasta. In 1978, the first single-brand shop for organic products was opened and the first organic farming course of national relevance was held at the firm's headquarter. Towards the end of the 1990s, the company decides to promote various initiatives to foster the founder's thoughts on organic farming and the valorisation of the area's artistic and natural beauty. A Bed-and-Breakfast and a restaurant were established, with the goal of diversifying the company's activities and providing its customers with a taste of rural life in the past, inextricably linking the experience to the values represented by the brand. This strategy was subsequently revised and improved by adding guided tours, aimed at school-age children and their families, designed to shape a culture of food well-being. Company B was founded in 1800 originally as an oil mill. After succeeding in producing an outstanding extra virgin olive oil, the company decided to replicate the success of the oil mill by starting wine production with twenty-seven hectares of vineyards. However, this conversion only received a substantial boost in 1994, with an additional nineteen hectares planted. Today, the company owns fifty hectares of vineyards that guarantee an annual production of around 250,000 bottles. In order to take advantage of the beauty of the area and attract tourists, a Country House and two farmhouses were established, with the aim of promoting the company's local specialities and the quality of its products. The realisation of these facilities provided the opportunity not only to promote the local culinary tradition but also to immerse the guests into traditional production methods through participation in guided tours of the farm complex.

The results show that, according to a territorial marketing perspective, the rural areas and their resources should be seen as a valuable product and marketing actions should be developed to contribute to the value creation process. Not all the approaches can be successful at the first attempt, and the cases analysed reveal a process of continuous improvement in which initial experiments, failures, and subsequent revisions and improvements alternate, not necessarily following this order. The internal and external territorial marketing actions undertaken by the two case firms aimed at achieving two complementary objectives: a) to make the territories more competitive and b) to provide the conditions for the settlement of an active segment of the population by stimulating local entrepreneurship, thus breaking the negative circle in which the absence of economic activities undermines the future development of the territory (Musso and Esposito, 2018). In particular, entrepreneurship has been recognized to be a key factor for the development of rural areas (Pugh and Dubois, 2021), which have been suffering the effects of unbalanced economic development for years (Korsgaard, 2015a). In order to counter this ongoing trend, the central role of entrepreneurship in

regional development processes is recognised (Korsgaard et al, 2015a; Korsgaard et al, 2015b), especially by Small and Medium-sized Enterprises (SMEs), which do not require large infrastructures or substantial resources to operate in an area characterised by the scarcity of these elements (Barca et al., 2014). Accordingly, the theoretical reasoning carried out in this paper makes it clear that the inclusion of rural areas in the global economy represents an opportunity for their survival, which, in the Italian case, have been affected by economic and demographic decline for more than twenty years now.

*Keywords: local development, rural areas, territorial marketing, place brand identity.*

## REFERENCES

Bagautdinova, N., Gafurov, I., Kalenskaya, N. and Novenkova, A. (2012), "The Regional Development Strategy Based on Territorial Marketing (The Case of Russia)", World Applied Sciences Journal, Vol 18, pp. 179-184.

Barca, F., Casavola, P. and Lucatelli, S. (2014) "Strategia nazionale per le aree interne: definizione, obiettivi, strumenti e governance", Materiali UVAL, No. 31, pp. 1-68.

Dinis, A. (2004), "Territorial Marketing: A useful tool for competitiveness of rural and peripheral areas", in Information and communication technologies in tourism 2007 proceedings of the international conference in Porto, Portugal, 2004, European Regional Science Association (ERSA), Lovain-la-Neuve, pp. 1-17.

Florek, M. (2005), "Territorial marketing: theoretical issues and empirical surveys in Wielkopolska communes", Quaderno di ricerca, Vol. 2 No. 1, pp. 1-28.

Hassib, R. and Ibtissem, S. (2018), "Territorial marketing: A tool for developing the attractiveness of territories", A|Z ITU, Vol. 15 No. 3, pp 61-69.

Korsgaard, S., Ferguson, R. and Gaddefors, J. (2015a) "The best of both worlds: how rural entrepreneurs use placial embeddedness and strategic networks to create opportunities", Entrepreneurship & regional development, Vol. 27, pp. 574-598.

Korsgaard, S., Müller, S. and Tanvig, H. W. (2015b) "Rural entrepreneurship or entrepreneurship in the rural–between place and space", International Journal of Entrepreneurial Behavior & Research, Vol. 21 No. 1, pp. 5-26.

Kotler, P. and Gertner, D. (2004), "Country as a brand, product and beyond: A place marketing and brand management perspective", in Morgan N. et al. (Ed.), Destination branding, Elsevier Butterworth-Heinemann, Burlington, MA, pp. 40-56.

Lerro, A. and Schiuma, G. (2009), "Knowledge-based dynamics of regional development: the case of Basilicatan region", Journal of Knowledge Management, Vol. 13 No. 5, pp. 287-300.

Musso, F. and Esposito G.F. (2018), "Industrial Policies and Institutional Sustainability. The Case of Inner Areas in Italy", in Mărginean S., Ogrean C., Orăștean R. (Eds.), Innovative Business Development – A Global Perspective, Springer Nature Switzerland, Cham, pp. 219-239.

Pugh, R. and Dubois, A. (2021) "Peripheries within economic geography: Four "problems" and the road ahead of us", Journal of Rural Studies, Vol. 87, pp. 267-275.

Semian, M. and Chromý, P. (2014), "Regional identity as a driver or a barrier in the process of regional development: A comparison of selected European experience", Norsk Geografisk Tidsskrift-Norwegian Journal of Geography, Vol. 68 No. 5, pp. 263-270.

# SUSTAINABLE SUPPLY CHAIN AND ESG SCORE: A SYSTEMATIC LITERATURE REVIEW

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## ABSTRACT

Recent global events, including the Covid-19 pandemic, global warming, and economic disparities, have led to a greater focus on what is ethically sound rather than solely on what is financially lucrative (Verbeke, 2020; Donaldson, 2023). As a result, the ESG (Environmental, Social, and Governance) approach has emerged as a holistic view of the factors that need to be integrated at different levels (Shu, 2023). This approach is being incorporated by investors, asset managers, and service providers worldwide to promote social responsibility in the industry, cooperate on this front, and document their activities and progress (Perote et al., 2023). In recent years, attention has also been given to the supply chain, and themes such as resilience are scrutinized to better prepare for future unforeseen events. The article investigates the relationship between ESG and the supply chain, two extremely relevant literature streams (Miralles-Quirós et al., 2019; Chen et al., 2023). In particular, it investigates the most recent research advancements in ESG and supply chain topics and the gaps in past literature. Finally, the research concludes with a few considerations about the future research directions for ESG and the supply chain. The researchers attempted to address these research questions by systematically reviewing extant body of research, analyzing descriptive statistics on published research and examining the methodology used in prior studies.

Our systematic review provides numerous theoretical insights that will aid future scientific research on the examined topics. Having a clear understanding of supply chain and ESG effects on companies is also of great importance. It tries to highlight if there is a link between a company's performance and its attention to ESG factors, just as if proper supply chain management could be linked to risk management. The article concludes with a summary and a reflection on possible future developments that research can undertake on the literature streams. The researcher carried on a systematic literature review (SLR) using a string of keywords, including "ESG*" or "Environmental Social Governance" and "Supply Chain*," to obtain a dataset of sixty relevant articles. The Scopus database was used as the primary source of the documents in the study, which is regarded as the most comprehensive and widely used peer-reviewed journal database (Cunill et al., 2019; Khatib et al., 2021). All articles included in the final sample were published in peer-reviewed journals, and their abstracts and conclusions were individually read and analyzed by the researchers. VOSViewer and RStudio tools were used to conduct a common keyword analysis, and to analyze the primary authors, annual

scientific production, most relevant sources, and most prolific countries. The results show a clear increase in the production of literature in recent years, indicating a growing interest in the examined topics. The article goes on providing an overview of the research profile of a sample, which includes descriptive statistics on the sample's yearly scientific production, countries with the most citations, most relevant sources, and methodologies used. It also presents the current state of scientific production on the topic, including the thematic map of recurring keywords, annual scientific output, most relevant sources, and most prolific countries.

The present SLR shows that companies that invest in green assets maintain their commitment to sustainability and mitigate the financial risk associated with non-green assets (Agoraki et al., 2022). In addition, ESG factors are paramount in the cultural shift towards sustainability, and corporate governance holds an important and prominent position within the ESG factors (Sancak et al., 2023).

Sustainability is considered necessary for ethical reasons but also because it can significantly impact corporate financial performance (Agoraki et al., 2022). Furthermore, lower ESG reputational risk is directly associated with increased financial performance, leading to decreased prior uncertainty (Khalid et al., 2022). Following these principles, it is recommended that at the national and corporate levels, corporate governance should receive more significant consideration from relevant authorities and decision-makers, with the long-term goal of      obtaining sustainable outcomes and increased disclosure practices for ESG issues (Sancak et al., 2023). The article highlights essential topics that define the relationship between ESG and Supply chain, including the supply chain structure and the ESG disclosure related to it. Better ESG disclosure practices can increase corporate transparency and enhance a company's reputation in supply chains, leading to a lower cost of debt and increased financial performance (Gualandri et al., 2021). In addition, the intricacies of the relationships between supply chain members can lead to varying levels of transparency in a supply chain (Jury et al., 2021).

Finally, our article discusses the economic impact of ESG scores and sustainable supply chain management, including a correlation between ESG reputational risk and decreased economic performance. The presence of ESG reputational risk results in the asymmetry of information between stakeholders and management, which can result in adverse selection and cause an increase in the cost of equity, ultimately leading to poor financial performance (Imperiale et al., 2023; Rosser, 2003). Additionally, the market may perceive ESG exposure as a negative signal for the company's reputation. In summary, the research findings indicate a positive correlation between impact, disclosure, and performance with an ESG approach to the supply chain. However, there are still several avenues for future research in this area. One such area is the need to investigate how the E components affect the S components within the framework of ESG scores and how they, in turn, influence the G component's breadth (Sancak, 2023) discussing the relationship between ESG and the

supply chain without investigating the internal dynamics of these topics is complex, given their broad scope.. It is also crucial to delve deeper into the impact of greater attention to ESG in supply chain management on risk management, mitigation effect, and value creation. Furthermore, there is a need to define a method for evaluating the performance of the supply chain, which would lead to a more effective empirical approach for analyzing the actual performance impact of the ESG approach on the supply chain (Agoraki et al.,2023; Caiazza et al., 2023).

*Keywords : Supply chain, ESG, Enviromental Social Governance, ESG score, Systematic Literature Review*

## REFERENCES

- Agoraki, M.-E. K., Aslanidis, N. and Kouretas, G. P. (2023) "How has COVID-19 affected the performance of green investment funds?," Journal of international money and finance, 131(102792), p. 102792. doi: 10.1016/j.jimonfin.2022.102792.
- Caiazza, S., Galloppo, G. and La Rosa, G. (2023) "The mitigation role of corporate sustainability: Evidence from the CDS spread," Finance research letters, 52(103561), p. 103561. doi: 10.1016/j.frl.2022.103561.
- Chen, M. et al. (2023) "The impact of supply chain concentration on integration and business performance," International journal of production economics, 257(108781), p. 108781. doi: 10.1016/j.ijpe.2023.108781.
- Does carbon control policy risk affect corporate ESG performance? Economic Modelling (2023).
- Donaldson, T. (2023) "Value creation and CSR," Journal of business economics. doi: 10.1007/s11573-022-01131-7.
- Firm characteristics, governance mechanisms, and ESG disclosure: how caring about sustainable concerns? Environmental Science and Pollution Research (2022). Springer.
- Imperiale, F., Pizzi, S. and Lippolis, S. (2023) "Sustainability reporting and ESG performance in the utilities sector," Utilities policy, 80(101468), p. 101468. doi: 10.1016/j.jup.2022.101468.
- Jury, G. et al. (2021) "The association between supply chain structure and transparency: A large-scale empirical study," Journal of Operations Management, 67(7), pp. 803–827.
- Khatib, S. F. A. et al. (2022) "A bibliometric analysis of cash holdings literature: current status, development, and agenda for future research," Management review quarterly, 72(3), pp. 707–744. doi: 10.1007/s11301-021-00213-0.
- Mar, M.-Q. M. (2019) "The impact of environmental, social, and governance performance on stock prices: Evidence from the banking industry," Corporate Social Responsibility and Environmental Management, 26, pp. 1446–1456.
-Martorell Cunill, O. et al. (2019) "Thirty-fifth anniversary of the International Journal of Hospitality Management: A bibliometric overview," International journal of hospitality management, 78, pp. 89–101. doi: 10.1016/j.ijhm.2018.10.013.
-Perote, J., Vicente-Lorente, J. D. and Zuñiga-Vicente, J. A. (2023) "How reactive is investment in US green bonds and ESG-eligible stocks in times of crisis? Exploring the COVID-19 crisis," Finance research letters, (103638), p. 103638. doi: 10.1016/j.frl.2023.103638.
- Rosser, J. B., Jr (2003) "A Nobel Prize for Asymmetric Information: The economic contributions of George Akerlof, Michael Spence and Joseph Stiglitz," Review of political economy, 15(1), pp. 3–21. doi: 10.1080/09538250308445.
- Sancak, I. E. (2023) "Change management in sustainability transformation: A model for business organizations," Journal of environmental management, 330(117165), p. 117165. doi: 10.1016/j.jenvman.2022.117165.
- The association between supply chain structure and transparency: a large-scale empirical study. journal of Operations Management (2021).
- Verbeke, A. (2020) "Will the COVID-19 pandemic really change the governance of global value chains?," British journal of management, 31(3), pp. 444–446. doi: 10.1111/1467-8551.12422.

# GLOBAL DIVERSITY MANAGEMENT AND THE ROLE OF BELIEFS IN DIGITAL AGE LEADERSHIP

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## ABSTRACT

The current study assuredly focuses on the positive aspect of diversity and therefore views diversity as an opportunity to gain a more holistic and humanistic perspective on finding 'the pattern that connects'. It is our position and our intention that the proposed solutions to future equality, diversity and inclusion (EDI) challenges faced by global leaders are less invasive and piece-meal, and more respectful and compassionate of the systemic integrity of the world in which we are all part of each other's environment.

In view of the under-researched area of Global Diversity Management that views divergence as an opportunity rather than a problematic state, the originality of this paper is twofold. Firstly, through a cross-discipline literature review it presents relevant findings of different areas of research creatively combined into a convergent line of thought. Self-leadership, compassion, neuroscience, mediation, communication, all make their own contribution. Secondly, and more importantly grounded on two separate models, it introduces the Global Leader's Positive Cultural Mindset framework. This is an innovative framework that presents the way of achieving a positive cultural mindset through self-leadership (self-exploration and self-influence) that can change how a leader thinks and acts in order to get culturally intelligent and apply positive EDI pull strategies.

Although it is widely recognized that an inclusive and equitable working environment benefits both the organization and the society at large (CIPD, 2021); companies find it hard to realise these benefits. Diversity management is particularly challenging to put into practice in MNCs, especially due to the western origins of its conception. The western mindset no longer serves the needs of the fluid, agile organisations and human resources of the future. It also fails to encapsulate the widening areas of EDI and the characteristics protected under legislation: age, gender reassignment, disability, marriage and civil partnership, sexual orientation, religion, beliefs and race. In relation to the focus of this study, we adopt the widely held viewpoint that a multicultural environment involves differences in race, religion and belief.

Furthermore, implementing equality, diversity and inclusion (EDI) asks for the existence of relevant values that are widely shared within an organisation and constitute an integral part of its particular organisational culture. Therefore, Global Diversity Management aspects need to consider the different

cultural contexts so as to be meaningful and applicable (Sippola and Smale, 2007). This calls for more insights into the yet under-researched area of GDM (Ciuk et al., 2022), especially on the topic of a global leader's mindset and personal values and how these can harbour hidden barriers to its implementation.

Within this backdrop, for digital age leaders to organise for multiculturalism they need to possess highly developed soft skills, including self-awareness, mindfulness and compassion. Additionally, they need to be checking in on themselves on a regular basis, and observing in a non-judgmental, self-compassionate way what their personal beliefs and values are in relation to their cultural preferences. Integrating elements from two existing models, the 2-step framework for implementing the EDI agenda in multinational companies (Ciuk et al., 2022) and the HEART-led framework of compassionate self-leadership (Tzortzaki, 2022), this study aims to examine how a strategic combination of elements from both models can transmute a leader's global mindset barriers into opportunities and be more effective in fostering organisational inclusion through a compassionate GDM agenda. The main outcome from such a combined framework is an organisation that is flexible to adapt and embrace divergence, creating a working environment that fosters belonging, reduced burnout and intent to stay. This work draws upon a wide range of interdisciplinary theories of GDM, leadership, self leadership development, self-compassion, well-being, organisational inclusion, neuroscience, psychology, mediation, non-violent communication, conflict management and even cybernetic epistemology. A preliminary literature review has revealed a gap in the link between self-compassionate awareness of a leader's own unconscious bias and beliefs of cultural inequality, low levels of multicultural diversity, cultural exclusion, and effective GDM. To enrich the theoretical debate on GDM and increase the diversity of its dimensions, this study proposes a new framework of a Global Leader's Positive Cultural Mindset.

Leading in from the dynamic, systemic nature of the HEART-led model and using its elements of 'self-exploration' and 'self-influence', the new framework introduces a roadmap for global leaders to systematically engage in mindful and compassionate 'self-exploration', with a view to developing a higher cultural and compassionate intelligence, thus mentoring, coaching and if appropriate, training them to self-observe, self-correct themselves into 'thinking differently' rather than adopting the traditional and more invasive methods of leadership development and change.

The proposed global leader framework can provide a route to certain all-important implications for MNCs, that are highly needed and valued in today's complex and turbulent multicultural environment, such as create a less toxic workplace, reduce burnout and employee turnover, increase employee engagement and well-being, enable non-violent communication and enhance overall organisational agility.

*Keywords: Global Diversity Management, Self-Leadership, Neuroscience, EDI agenda, MNCs.*

## REFERENCES

CIPD (2021), Inclusion at Work. Perspectives on LGBT+ Working Lives, Research Report.

Ciuk, S., Śliwa, M., & Harzing, A. W. (2022), "Implementing the EDI agenda in multinational companies: A framework for the management of (linguistic) diversity", Human Resource Management Journal, pp.1-21, doi: 10.1111/1748-8583.12487

Sippola, A., & Smale, A. (2007), "The global integration of diversity management: A longitudinal case study", The International Journal of Human Resource Management, Vol. 18, No. 11, pp.1895-1916.

Tzortzaki, A.M. (2022), "Developing compassionate self-leadership: a conceptual framework for leadership effectiveness in the digital age", Journal of Global Business Advancement, Vol. 15, No. 3, pp. 272-296.

# UNDERSTANDING THE NONPROFITS -GOVERNMENT RELATIONSHIP IN CRISIS: THE CASE STUDY OF NON-PROFITS IN ISRAEL IN COVID-19

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## ABSTRACT

Beginning in March 2020 Israeli nonprofits received a severe financial blow, impairing their ability to provide vital services to citizens. Evidence accumulated regarding third sector organizations' continuing ability to offer their customary range of social services. Paradoxically, Israel's turbulent security, social and financial   history did not prepare it for the Covid crisis, the culprit being poor governance regarding nonprofits co-production of social services. This, despite an emergency strategic plan for inter-sectoral cooperation, prepared in 2017.

The COVID-19 pandemic erupted amid ongoing organizational budgetary distress; constraints on government payments for social services, and the on-going failure to approve a state budget occurred in the context of a complex political crisis. Chronic budgetary issues were exacerbated by the fact that the Budget Department of the Ministry of Finance historically transfers funds on a piecemeal basis.As the critical need for social services increased, nonprofits called for political representatives, citizens and other stakeholders to reach consensus and solve the problem. They demanded immediate governmental intervention to transfer appropriate funds, and, at a minimum, for solutions on the two major issues of tax relief and budgetary assistance.

This study interrogates this hampered collaboration between government and third sector organizations regarding the co-production process at the outbreak of the crisis. We further examine why an already-existing emergency strategic plan for inter-sectoral collaboration (which had been drafted in the prime minister's office) was not implemented at the outset and why government seemingly abandoned the third sector despite the obviously increased need for social services.

This study utilizes Historic (HI) and Discursive Institutionalism (DI) as a main approach and as a co-production framework, focusing on four modes of co-production (Co-commissioning, Co-design, Co-delivery and Co-assessment).  HI assists in analyzing the changes in gov-nonprofits co-production over time (in this case from the establishment of the state in 1949 until the outbreak of Covid-19), mapping continuing regularities, incremental changes to institutional rules, co-production practices used over time and critical junctures of change. DI enables us to foreground the relevant actors while focusing on policy coordination and communicative discourse between different stakeholders (Schmidt. 2011, p. 10.; Béland. 2010, p.55). In parallel we look at co-production with non-profits through a policy lens. The nature of the relationship between non-profits and the production process

is dynamic, such that when the involvement of the third sector allows different delivery of services, this process is itself incorporated into the institutionalized system of provision, forming a feedback system.

When civil society enters the political arena, institutional and organizational changes occur in the production mechanisms, changes in composition of actors, for example, their relationships, and even to the products themselves.   While the involvement of the non-profits in public policy and service delivery processes has increased in recent years (Brandsen and Johnston 2018; Osborne and McLaughlin 2004; Williams et. al., 2016), research in public administration has understandably focused primarily on relationships between the state and the third sector (see for example Boivard, 2007; Pestoff, Osborne, and Brandsen 2006), without sufficient reference to policy perspectives. Thus, co-production as an area of policymaking has received little treatment in the global policy studies literature (Howlett, et.al., 2017; Mazzei, et.al., 2020). Moreover, engaging non-public actors such as non-profits in cooperative forms of coordination is possible only if implementation of co-production is based in an appropriate setting where government acts as a facilitator and creates space for other actors' discretion, all while encouraging joint responsibility (Hill and Hupe, 2014; Klijn, Steijn, & Edelenbos, 2010; Rhodes, 2012). Policy perspective can help analyze how, when and why this is possible. Hence, viewing co-production through a policy lens provides insights which complement purely public management ones, helping bring the complex picture surrounding co-production into better focus, enabling better analysis and practice than does reliance on a single field (Howlett, et.al., 2017). Once created, institutions slowly evolve in subtle and gradual ways. Although less dramatic than abrupt and wholesale transformations, these slow and piecemeal changes can be equally consequential for patterning human behavior and for shaping substantive political outcomes (Mahoney and Thelen, 2010).

Using qualitative inquiry, we first review the literature on the government-nonprofits relationship, thereby establishing a timeline explaining this relationship through the four modes of co-production mentioned above. This is followed by HI analysis, mapping and presenting the main focal points in this relationship. over the next step we analyze the type of political context according to Schmidt (2008) as a factor possibly explaining the relationship between government and non-profits. Next, we perform a DI analysis according to an open system approach, exploring the elements of the communication and coordination and ideational power using policy documents from 2008-2017.

Preliminary findings argue that the relationship between government and non-profits is through weak discourse and weak coordination characterized by government populism, double messages and control over both the agenda and the participants (what message, what idea, who attends and who will lead).

Our findings suggest that the government has often used the term 'co-governance' to camouflage a practice of what we term 'false co-governance.' In our examination of the inadequacies of the emergency strategic plan for inter-sectoral cooperation prepared in 2017, we have uncovered that the primary shortcomings lay in the government's emphasis on creating practices, such as roundtables, rather than investing efforts in fostering effective communication between sectors. Consequently, we have identified a significant neglect in government-nonprofit communication, particularly at the local government level, thereby diminishing the influence and functionality of nonprofits.

Furthermore, our research has unveiled notable disparities between Arab and Jewish societies concerning their interactions with nonprofit organizations. In Jewish society, established relationships between the third sector and local authorities are routine, whereas in Arab society, a lack of trust and cooperation between these parties is evident. Consequently, collaborative emergency preparedness efforts involving the third sector seem irrelevant within the Arab society, where issues of emergency appear distant and unrealistic. The Arab society currently grapples with routine internal violence and crime, areas in which the third sector plays no role.

In concluding our study, we provide insights into future government and non-profits collaborations. We discuss potential trends, including changes in the dependence of non-profits on state funding, shifts in resource allocation, and the potential for enhanced co-production between nonprofits and local governments. We propose, among other things, that the third sector's reliance on state funding may change as improved fundraising skills and philanthropy play a more significant role in the process. We also pose a critical question: Can the third sector thrive without a strong bureaucratic framework, especially during crises? Although non-profits often emerge as responses to government failures, they still require a robust bureaucratic support system to function productively; they cannot operate in isolation. Therefore, enhancing the relationship between the government and the third sector during routine periods is of paramount importance to effectively address diverse crises in the future.

Additionally, our research leads us to believe that the allocation of resources will shift its focus from central government to local government, thereby strengthening local communities through a bottom-up, rather than top-down, approach.

## REFERENCES

Béland, D., & Cox, R. H. (Eds.). (2010). Ideas and politics in social science research. Oxford University Press.
Bovaird, T. (2007). Beyond engagement and participation: User and community coproduction of public services. Public administration review, 67(5), 846-860.
Brandsen, T., & Johnston, K. (2018). Collaborative governance and the third sector: Something old, something new. The Palgrave handbook of public administration and management in Europe, 311-325.

Howlett, M., Kekez, A., & Poocharoen, O. O. (2017). Understanding co-production as a policy tool: Integrating new public governance and comparative policy theory. Journal of Comparative Policy Analysis: Research and Practice, 19(5), 487-501.

Hupe, P., & Hill, M. (2014). Implementing public policy: An introduction to the study of operational governance. Implementing Public Policy, 1-248.

Klijn, E. H., Steijn, B., & Edelenbos, J. (2010). The impact of network management on outcomes in governance networks. Public administration, 88(4), 1063-1082.

Mahoney, J., & Thelen, K. (2010). A theory of gradual institutional change. Explaining institutional change: Ambiguity, agency, and power, 1, 1.

Mazzei, M., Teasdale, S., Calò, F., & Roy, M. J. (2020). Co-production and the third sector: conceptualising different approaches to service user involvement. Public Management Review, 22(9), 1265-1283.

Osborne, S. P., & McLaughlin, K. (2004). The cross-cutting review of the voluntary sector: where next for local government–voluntary sector relationships?. Regional studies, 38(5), 571-580.

Pestoff, V., Osborne, S. P., & Brandsen, T. (2006). Patterns of co-production in public services: Some concluding thoughts. Public Management Review, 8(4), 591-595.

Rhodes, R. A. (2012). Waves of governance.

Schmidt, V. A. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. Annu. Rev. Polit. Sci., 11, 303-326.

Schmidt, V. A. (2011). Reconciling ideas and institutions through discursive institutionalism. Ideas and politics in social science research, 1, 76-95.

# UNVEILING A HOLISTIC APPROACH: THE INTEGRATED FRAMEWORK OF ONLINE CONSUMER-BRAND ENGAGEMENT

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## ABSTRACT

In today's digitally driven landscape, where consumers are more connected and empowered than ever (Nery et al., 2021), understanding and effectively nurturing consumer-brand relationships are pivotal for businesses (Presi et al., 2016). Despite the growing amount of research on consumers' engagement with brands on social media, operationalization of this factor is largely fragmented and is still at a nascent stage (Schivinski et al., 2021; Qu et al., 2022; Lourenço et al., 2022; Hollebeek et al., 2022). The goal of this research is to develop a holistic approach to comprehending the dynamics of consumer-brand engagement through consumers' online brand related activities (hereinafter COBRAs).

Drawing on the COBRAS framework, is an umbrella behavioral construct that encompasses consumer activities pertaining to brand-related content on social media, first introduced by Shao (2009) and later extended by Muntinga, Moorman and Smit (2011), this research seeks to unravel the outcomes of brand-related user-generated content (BR-UGC), offering valuable insights into contemporary consumer behavior. It aspires to achieve this by synthesizing and consolidating existing research, offering a comprehensive model that delves into the multifaceted facets of consumers' interactions with brands online. By examining the entirety of the consumer journey, from initial brand-related content exposure to post-engagement, this framework aims to provide a holistic understanding of the complex web of influences at play.

In essence, the core objective of this research is to introduce an integrated framework, which is designed to equip businesses and researchers with a robust tool for comprehending the intricacies of consumers' online brand-related activities. Given that this research is currently underway, it aims to function as a compass in navigating the vast digital landscape, offering valuable insights that can inform marketing strategies, enhance consumer experiences, and contribute to the ongoing dialogue surrounding contemporary brand-consumer relationships in the digital age.

*Keywords: Online Consumer-Brand Engagement, Consumers' Online Brand-Related Activities, COBRAs, Brand-Related User-Generated Content, BR-UGC.*

# REFERENCES

Hollebeek, L. D., Sharma, T. G., Pandey, R., Sanyal, P., & Clark, M. K. (2022). Fifteen years of customer engagement research: A bibliometric and network analysis. Journal of Product & Brand Management, 31(2), 293-309. 10.1108/JPBM-01-2021-3301

Lourenço, C. E., Hair, J. F., Zambaldi, F., & Ponchio, M. C. (2022). Consumer brand engagement concept and measurement: Toward a refined approach. Journal of Retailing & Consumer Services, 68, 1016/j.jretconser.2022.103053

Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs. International Journal of Advertising, 30(1), 13-46.

Nery, M. M. R., Sincora, L. A. & Carneiro, T. C. J. (2021). Trajectory and Research Opportunities on Consumer Brand Engagement in Social Networking Sites. Journal of Internet Commerce, 20(4), 479-507, 10.1080/15332861.2021.1950328

Presi, C., Maehle, N. & Kleppe, I. A. (2016), "Brand selfies: consumer experiences and marketplace conversations", European Journal of Marketing, 50(9/10), 1814-1834

Qu, Y., Saffer, A. J., & Riffe, D. (2022). The social network antecedents to consumer engagement: Revealing how consumers' conversations influence online engagement behaviors. Corporate Communications: An International Journal, 27(2), 226-244.

Schivinski, B., Muntinga, D. G., Pontes, H. M., & Lukasik, P. (2021). Influencing COBRAs: The effects of brand equity on the consumer's propensity to engage with brand-related content on social media. Journal of Strategic Marketing, 29(1), 1-23.

Shao, G. (2009). Understanding the appeal of user-generated media: A uses and gratification perspective. Internet Research, 19(1), 7-25.

# IMPROVING THE LENGTH OF STAY (LOS) IN HOSPITALS:  THE CASE OF THE EMERGENCY DEPARTMENT

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## ABSTRACT

## INTRODUCTION

The study explores the performance of the emergency department (ED) of a large hospital in central Israel (average arrival rate per day- 350 patients). A simulation model is employed to reduce the LOS. At present the average LOS is 5.25 hours. The aim is to reduce it to about 4.0 hours. The crowding of EDs is one of the major poor-quality factors for patients. Because of this, measuring ED performance in Healthcare Systems is a difficult but an important task needed to enhance quality and efficiency (Scorza et. Al, 2022). Crowding can result in delayed treatment, long patient waiting time and stay, overburdened working staff, patient elopement, and low throughput. Crowding also can lead to other problems, such as medical errors and ambulance diversion. In the literature, (Zeng, et. al, 2012, Ahalt, et. al, 2018, Asplin et. al, 2003) there are several solutions proposed for overcrowding, and they mainly highlight three themes: 1. Additional resources. 2. Management of requests. 3. Operational research. Health Care Systems worldwide have used management methods of performance measurement to evaluate organization outcomes as a consequence of successful treatment and staff competences and must be based on a specific set of indicators such as LOS, percentage of Left Without Being Seen (LWBS) and waiting time for hospitalization. The Italian Ministry of Health has introduced some standard performance measures to overcome this problem. In the UK, as a primary crowding measure, a maximum length of ED stay called '4 hours target', was introduced. The definition of overcrowding is an imbalance between supply and demand; demand is represented by the total number of patients waiting or being treated, while the offer is represented by the availability of resources, physical, human or structural, that are necessary to meet certain needs. During the clinical-care path within the ED, the patient is faced with waiting times. The longer or shorter waiting times may be due to the first assessment, specialist examinations, waiting for results or advice from other specialists, information processing times and the time needed for either receiving a discharge letter or to be hospitalized. The sum of all of these factors determines the total LOS. A simulation model can depict the patient flow and care delivery processes, emulate the process and its dynamics under certain random distributions, and provide predictions for performance measurement. Such a tool can help health care management to improve the efficiency of the ED and reduce the major measurement of the LOS.

## THE ED DEPARTMENT

The study was conducted in the ED department of a large hospital in the central part of Israel, serving a population of above million people. It operates 59 beds employing 13 specialists in emergency medicine and 30 nurses, providing a daily 24-hour service. On the average the daily rate of arrivals is 350 patients where 24% arrive with an ambulance. The 48-hour readmission rate was 3.2% with a rate of 8% for 7-day readmission. The average LOS was 5.25 hours with a minimum of 2.5 hours. The Net Treatment Time was 16% meaning that 84% of the time spent in the ED is due to waiting times. Using simulation model it is aimed to reduce the LOS to about 4.0 hours (at present about 40% of the patients spend more than 4 hours).

## THE SIMULATION MODEL

The model was developed using the Arena simulation system. It represents the various steps/stages of the treatment in the ED: Reception, Triage, Initial Lab tests, Clinical Examination (additional Lab tests, CT/X Ray, and other needed tests), Specialist Examination (10% of patients), Discharge (Waiting Time for discharge letter) /Hospitalization (Waiting Time to be admitted in the hospital department). A set of independent variables were tested: Doctors- Internal medicine; Surgeons, Orthopedics, Nurses, CT systems, X Ray machines, Beds, Supporting staff. The dependent variable (performance measurement) is the LOS.

## RESULTS

Several alternatives (combination of variables) were tested by the simulation model to verify the best cost/effective one. Simulation results showed that: additional surgeon (up to 6 surgeons) improves the LOS by 8%, additional orthopedic doctor improves by 26%, additional internist during night time improves by 7%. Additional nurse improves by 10%. Additional CT systems improves by 56%. In regards to additional number of beds, number of X Ray machines and number of support staff, there was no improvement of the LOS. The best combination was adding 7 doctors per shift, additional triage nurse and additional CT machine. It reduced the average LOS to 2.45 hours where 83% of the patients will either discharged or hospitalized in less to 4 hours.

## SUMMARY

The study presents the performance of an Emergency Department where the LOS was investigated to verify the department's efficiency. Using a simulation model verified the additional resources needed

to improve the LOS. An additional budget of $200 K will reduce the average LOS by 56% to the rate of

2.45 hours.

*Keywords: Health Care, Emergency Department, Length of Stay, Simulation.*

## REFERENCES

Ahalt, V., Argon, N.T., Ziya, S., Strickler, J. and Mehrotra, A., (2018), " Comparison of emergency department crowding scores: a discrete-event simulation approach", Health Care Management Science, Vol. 21, pp. 144-155.
Asplin, B.R., Magid, D.J., Rhodes, K.V., Solberg, L.I., Lurie, N., Camargo, C.A., (2003), "A conceptual model of emergency department crowding", Annals of Emergency Medicine, Vol. 42, pp, 173-180.
Scorza, A., Porazzi, E., Strozzi, F., Garagiola, E., Gimigliano, A., De Filippis, G., (2022), "A new approach for emergency department performance positioning: The quality-efficiency matrix", Int J Health Plann Mgmt, Vol. 37, pp, 1636-1649.
Zeng, Z., Ma, X., Hu, y., Li, J. and Bryant, D., (2012), " A simulation study to improve quality of care in the emergency department of a community hospital, Journal of Emergency Nursing, Vol. 38, No. 4, pp. 322-328.

# EVALUATION OF DIFFERENCES IN PERFORMANCE BETWEEN SHAREHOLDER-CEO-LED AND PROFESSIONAL-CEO-LED FIRMS: EVIDENCE FROM NASDAQ BALTIC

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## ABSTRACT

## INTRODUCTION & AIM OF RESEARCH

Organizational life cycle theorists assert that as firms expand, a shareholder-CEO ought to be substituted by a professional-CEO possessing greater expertise in established firms (S. Y. Lee & Ko, 2022). Picken (2017) also finds that the proficiencies and motivations necessary to commence a new firm diverge considerably from those needed to supervise and manage a rapidly growing firm in a competitive setting.

Scholars have examined the contrasting behaviors of professional CEOs, which are often self-interested, with the stewardship behaviors of shareholders (S. Y. Lee & Ko, 2022). Nevertheless, previous research has yielded inconsistent and inconclusive findings, and several gaps in the literature have been identified concerning the actual impact of separating shareholding and management, specifically in terms of appointing a professional-CEO instead of a shareholder-CEO, on firm performance (Altarawneh et al., 2020; Jayaraman et al., 2000).

Given the incongruities in previous research, a fundamental motivation behind this investigation is to make a meaningful contribution to the accumulated knowledge in the field regarding performance disparities between firms governed by either type of CEO. Hence, the primary goal of this study is to evaluate whether noteworthy disparities in financial performance are present between firms that are helmed by shareholder-CEOs versus those that are overseen by professional-CEOs.

## THEORETICAL BACKGROUND

While Lin and Hu (2007) found a significant relationship between a firm's operational features and the attributes of its CEO, Jayaraman et al. (2000) reported that past empirical research conducted over two decades ago has reported inconsistent findings regarding the relationship between CEO status and firm performance. Existing scholarly research in this domain has predominantly focused on financial performance firms listed publicly on stock exchanges (mostly in the U.S.).

**H1.** *A statistically significant disparity in the stock market performance can be observed between firms led by shareholder-CEOs and those managed by professional-CEOs.*

Agency theorists (e.g., Jensen and Meckling, 1976) find that separating ownership from management makes conflicts called agency problems due to conflicting interests between executives and shareholders. These conflicts create agency costs which shall be treated as any other costs and can negatively impact firm performance (Hoang et al., 2019). Since shareholders are equity owners in firms, it would be reasonable to speculate that agency costs directly impact the return to shareholders that is generated by CEOs in their firms.

**H2.** *A statistically significant disparity in the shareholder return can be observed between firms led by shareholder-CEOs and those managed by professional-CEOs.*

## RESEARCH DESIGN

This study broadens the scope of research in the field by examining the performance of a sample comprising 55 firms from the Nasdaq Baltic stock market. Baltic nations create a unique setting for the research since most private sector firms in the Baltics were established only over the past three decades following the collapse of the Soviet Union. Since the 1990s Estonia, Latvia, and Lithuania have made extraordinary progress in adopting the principles of market economy (Lainela, 2000). The evolution also involved de-centralization of decision-making to the firm level as well as acquisition of managerial skills.

In this research, the CEO type was chosen as the independent variable, consisting of two distinct categories: "shareholder-CEO" or "professional-CEO."

Continuing in the tradition of other scholars, I selected Tobin's Q as a measure of stock market performance, while return on equity (ROE) was used to measure return to shareholders. Both dependent variables – market-based measure Tobin's Q and accounting-based measure ROE – were calculated for the 5-year period from 2017 to 2021 based on the official Nasdaq Baltic and firm data. In the sample, the ratio of shareholder-CEOs to professional-CEOs is 3:2.

Given the nature of the independent variable, an independent-samples t-test was chosen as the appropriate statistical analysis method to examine the hypotheses.

### RESULTS

Table 1: Independent samples t-test results

| Measure | N | Levine's Test for Equality of Variances | | t-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Two-Sided p | Mean Difference | Std. Error Difference | Lower | Upper |
| Tobin's Q | 46 | 1.597 | .213 | -1.165 | 44 | .250 | -.19901 | .17076 | -.54314 | .14513 |
| ROE | 55 | 2.205 | .143 | 1.319 | 53 | .193 | .09498 | .07203 | -.04949 | .23945 |

The results of this study imply that, on average, professional-CEO-led firms exhibited superior stock market performance, as indicated by Tobin's Q (M = 1.37), compared to firms led by shareholder-CEOs (M = 1.17). These results align with the findings reported by Kim and Kiymaz (2021) while contrasting with the evidence by M. A. Abebe and Tangpong (2018), Saidu (2019), and Kumar et al. (2021). However, according to the outcomes of independent-samples t-test [t(44) = -1.165, p = .250 > .05], the disparities in stock market performance between the two categories of firms led by different types of CEOs, as identified in this study, are statistically nonsignificant.

Contrary to the findings reported by Lauterbach and Vaninsky (1999), this study observed that shareholder-CEO-led firms displayed higher average ROE (M = 7.76%) compared to professional-CEO-led firms (M = -1.74%). This observation aligns with the theoretical perspective of agency theorists, who argue that shareholder-CEOs, as equity owners in their respective firms, exhibit greater interest in generating shareholder returns. However, according to the outcomes of independent-samples t-test [t(53) = 1.319, p = .193 > .05], the disparities in ROE between the two categories of firms led by different types of CEOs, as identified in this study, are statistically nonsignificant.

## DISCUSSION & CONCLUSIONS

An assumption that the influence of a single person – a CEO – diminishes as firms mature might explain the findings. *First,* according to Bamford et al. (2006), a generalization can be made that the influence of a CEO on a firm diminishes as the firm experiences growth. In addition, He (2008) asserted that the relationship between a CEO and a firm's financial results is influenced by the structure of corporate governance. Complying with the regulations of the Nasdaq Baltic, all 55 firms in the research sample had at least one collegial body. Thus, it could be argued that the performance of the firms in the sample is affected and in turn impact of a CEO is diminished by implementing corporate governance measures. The view that governance does, in fact, influence firm performance, is supported in the research by many scholars, e.g., S. Lin and Hu (2007), Gupta and Sharma (2014), and Malik and Makhdoom (2016) and others. *Second,* as entrepreneurial firms mature and their management becomes more professionalized, spontaneous actions are substituted with established protocols and systems, while managerial, strategic, and reporting frameworks are established, along with an augmentation of the firm's human and social capital (Zahra and Filatotchev, 2004).

The findings of this study offer valuable perspectives for management professionals, shareholders, board members, and CEOs. Specifically, shareholder-CEOs of mature firms who view their firm as a lifetime achievement and/or are approaching retirement could derive advantages from the discoveries of this research, which imply that the monetary results of their firm is unlikely to be adversely impacted by the appointment of a professional-CEO, especially if the firm is publicly listed. Moreover,

these findings may serve as an additional consideration in board discussions concerning the substitution of a shareholder-CEO with a professional-CEO.

*Keywords: shareholder-CEO, professional-CEO, firm performance, agency theory, organizational life cycle theory, Tobin's Q, ROE*

## REFERENCES

Abebe, M.A. and Tangpong, C. (2018), "Founder-CEOs and corporate turnaround among declining firms", Corporate Governance: An International Review, Vol. 26 No. 1, pp. 45-57.

Altarawneh, M., Shafie, R. and Ishak, R. (2020), "CEO characteristics: A literature review and future directions", Academy of Strategic Management Journal, Vol. 19 No. 1, pp. 1-10.

Bamford, C.E., Bruton, G.D. and Hinson, Y.L. (2006), "Founder/chief executive officer exit: A social capital perspective of new ventures", Journal of Small Business Management, Vol. 44 No. 2, pp. 207-220.

Gupta, P. and Sharma, A.M. (2014), "A Study of the Impact of Corporate Governance Practices on Firm Performance in Indian and South Korean Companies", Procedia - Social and Behavioral Sciences, Vol. 133, pp. 4-11.

He, L. (2008), "Do founders matter? A study of executive compensation, governance structure and firm performance", Journal of Business Venturing, Vol. 23 No. 3, pp. 257-279.

Hoang, L.D., Tuan, T.M., Nha, P.V.T., Nha, P.V.T. and Phuong, T.T. (2019), "Impact of Agency Costs on Firm Performance: Evidence from Vietnam", Organizations and Markets in Emerging Economies, Vol. 10 No. 2, pp. 294-309.

Jayaraman, N., Khorana, A., Nelling, E. and Covin, J. (2000), "CEO Founder Status and Firm Financial Performance", Strategic Management Journal, Vol. 21 No. 12, pp. 1215-1224.

Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: Managerial behavior, agency costs and ownership structure", Journal of Financial Economics, Vol. 3 No. 4, pp. 305-360.

Kim, W.S. and Kiymaz, H. (2021), "Founder CEOs, business groups and firm value: evidence from an emerging market", International Journal of Emerging Markets, Vol. 18 No. 5, pp. 1102-1123.

Kumar, M.V.S., Nagarajan, N.J. and Schlingemann, F.P. (2021), "The performance of acquisitions of founder CEO firms: The effect of founder firm premium", Strategic Entrepreneurship Journal, Vol. 15 No. 4, pp. 619-646.

Lainela, S. (2000), "Baltic Accession to the European Union", Journal of Baltic Studies, Vol. 31 No. 2, pp. 204-216.

Lauterbach, B. and Vaninsky, A. (1999), "Ownership Structure and Firm Performance: Evidence from Israel", Journal of Management and Governance, Vol. 3 No. 2, pp. 189-201.

Lee, S.-Y. and Ko, E.-J. (2022), "Effects of founder CEO duality and board size on foreign IPOs' survival in US markets", Corporate Governance: The International Journal of Business in Society, Vol. 22 No. 5, pp. 1054-1077.

Lin, S. and Hu, S. (2007), "A Family Member or Professional Management? The Choice of a CEO and Its Impact on Performance", Corporate Governance: An International Review, Vol. 15 No. 6, pp. 1348-1362.

Malik, M.S. and Makhdoom, D.D. (2016), "Does corporate governance beget firm performance in Fortune Global 500 companies?", Corporate Governance, Vol. 16 No. 4, pp. 747-764.

Picken, J.C. (2017), "From founder to CEO: An entrepreneur's roadmap", Business Horizons, Vol. 60 No. 1, pp. 7-14.

Saidu, S. (2019), "CEO characteristics and firm performance: focus on origin, education and ownership", Journal of Global Entrepreneurship Research, Vol. 9 No. 1, pp. 1-15.

Tong, S., Junarsin, E. and Li, C. (2015), "A Comparative Study of Chinese SOE Firm's Boards and Private Firm's Boards", Annals of Economics & Finance, Vol. 16 No. 2, pp. 291-314.

Zahra, S.A. and Filatotchev, I. (2004), "Governance of the Entrepreneurial Threshold Firm: A Knowledge-based Perspective", Journal of Management Studies, Vol. 41 No. 5, pp. 885-897.

# VALUE CO-CREATING SYNERGIES IN THE FOOTBALL INDUSTRY: A THEORETICAL FRAMEWORK OF PRIMARY AND SECONDARY STAKEHOLDERS

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## ABSTRACT

## RESEARCH CONTEXT

Football has become a business that supports a multifaceted and dynamic multi-billion industry, affecting and being affected by a plethora of stakeholders (Toma and Catana, 2021). This phenomenon of multi-stakeholder envelopment inevitably entails a wide range of challenges and considerations for all the industry actors, driving them to develop the necessary strategies to identify, interrelate, and ultimately balance the value exchanges involved in the pursuit of a business and socially sustainable future (Dodo et al., 2020). Sharing values and aligning interests with each other is like putting together a partnership where, in the end, every party wins. The stakeholders should identify and comprehend the collaborative value and align interests and strategies that will allow them to measure and manage the direct and indirect relationships and synergies within the industry (Brownell and Besnier, 2019). This process demands a rigorous analysis of the industry in order to first map, evaluate and delineate each stakeholder, and then identify the values they hold.

## RESEARCH AIM, VALUE AND METHODOLOGY

Despite its aforesaid importance, existing studies on the topic are either partial or focus on individual stakeholder-value relationships. This study bridges this gap in knowledge through its aim to identify the industry's key stakeholders and their relative value, with the novelty that, for the first time, all the industry's forces, actors, and values are combined and interrelated as a system. Consequently, this research aims to theoretically identify and conceptualise the industry's distinct values for every primary and secondary stakeholder and develop a corresponding value-based framework.

The research contributes to both theory and practice, offering substantial knowledge to academia and industry alike. Through the stakeholder-value analysis of the particular industry and the development of an equivalent framework, the study improves our understanding of the football industry, contributing widely to extant scholarly knowledge, as well as to the examined context.

Methodologically, the research relies on an extensive theoretical examination of the football industry's stakeholders, with a focus on the most pivotal industry stakeholder framework developed by Yiapanas et al. (2022).

## THEORETICAL BACKGROUND

The study adopted the specific framework as an industry blueprint [mapping twenty primary and sixteen secondary stakeholders]., and through a holistic theoretical approach, identified the distinctive values that each primary and secondary stakeholder holds through the individual synergies with the football clubs within the football ecosystem (Figure 1).

Figure 1: The stakeholder framework of the football industry. Adopted from Yiapanas et al. (2022)
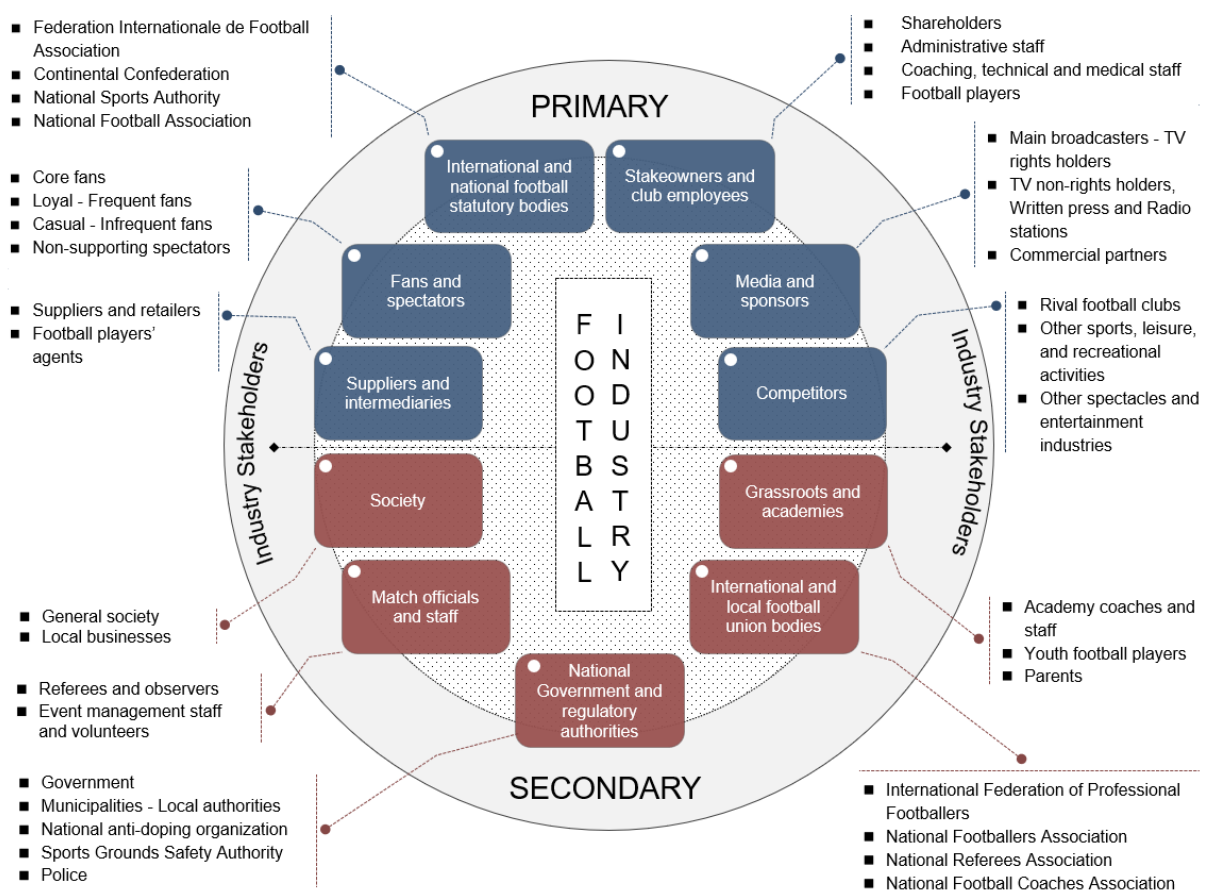


The value co-creation concept relies on the fact that every stakeholder in the industry satisfies its desired needs and interests and in return, football clubs satisfy their own. This synergy is inspired by a variety of factors, and includes among others, instrumental motivations, organisational values and goals, long-term institutional stewardship, governance structures, equity, etc. Each actor has a fundamental role to play in the co-creation value process (Woratschek et al., 2020).

## ANALYSIS AND DELINEATION

Leaning on the thorough industry stakeholder mapping and on the value co-creation notion, the study analysed and delineated the values that each stakeholder in the specific context holds, due to its involvement and contribution to the sport. Every primary and secondary stakeholder has a typical role in the football industry. Their direct or indirect relationship enables them to either engage and link with the industry or interact and affect the primary relationship between the various actors, and at the same time satisfy specific strategic needs. From the analysis and delineation of the industry's primary (Table 1) and secondary (Table 2) stakeholders, it is shown that a variety of values -including [negative values]- arise, due to the relationship they preserve with the football clubs.

Table 1: The primary stakeholders' value components

| Stakeholders | Value |
| --- | --- |
| **International and national football statutory bodies** | |
| Federation Internationale de Football Association | Accountability, Anti-racism, Autonomy, Control, Dope free football, Football development, Gender equality, Human dignity, Integrity, Match-fixing, Non-discrimination, Participation, Respect, Social identity, Solidarity, Unity, Youth development |
| Continental Confederation | Accountability, Anti-racism, Autonomy, Control, Dope free football, Football development, Gender equality, Human dignity, Integrity, Match-fixing, Non-discrimination, Participation, Respect, Social identity, Solidarity, Unity, Youth development |
| National Sports Authority | Football development, Infrastructure, Mass sport activities, Well-being, Social inclusion, National cohesion, Happiness, Physical and social health improvement, Physical activity, Policies and regulations |
| National Football Association | Accountability, Anti-racism, Autonomy, Control, Dope free football, Football development, Gender equality, Human dignity, Integrity, Match-fixing, Non-discrimination, Participation, Respect, Social identity, Solidarity, Unity, Youth development |
| **Stakeowners and club employees** | |
| Shareholders | Brand equity, Financial growth, Lifestyle, Prestige, Pride, Recognition, Reputation, Social status, Team performance, [Criticism], [Money-Laundering] |
| Administrative staff | Attractive environment, Job satisfaction, Personal development, Prestige, Remuneration, Work stability |
| Coaching, technical and medical staff | Attractive environment, Job satisfaction, Personal development, Prestige, Recognition, Remuneration, Reputation, Work stability, [Criticism], [Doping], [Illegal betting], [Match-fixing] |
| Football players | Attractive environment, Lifestyle, Positive image, Personal development, Prestige, Recognition, Remuneration, Reputation, [Criticism], [Doping], [Illegal betting], [Match-fixing] |
| **Fans and spectators** | |
| Core fans | Club culture and identity, Fraternity, Power, Prestige, Pride, Recognition, Satisfaction, Sense of belonging, Social status, Team performance, [Fandom identity], [Political confrontation], [Rivalry] |
| Loyal - Frequent fans | Club culture and identity, Enjoyment, Entertainment, Prestige, Pride, Satisfaction, Sense of belonging, Social status, Team performance |
| Casual - Infrequent fans | Club culture and identity, Enjoyment, Entertainment, Prestige, Pride, Satisfaction, Sense of belonging, Social status, Team performance |
| Non-supporting spectators | Entertainment, Satisfaction |

| Media and sponsors | |
|---|---|
| Main broadcasters - TV rights holders | Audience increase, Financial growth |
| TV non-rights holders, Written press and Radios | Audience increase, Financial growth, Information |
| Commercial partners | Audience increase, Brand awareness, Brand equity, Brand recognition, Business development, Corporate knowledge, Crowdsourcing, Financial growth, Innovation, Self-brand connection, [Ambush marketing], [Financial risk] [Reputational risk] |

| Suppliers and intermediaries | |
|---|---|
| Suppliers and retailers | Audience increase, Financial growth |
| Football players' agents | Attractive environment, Audience attraction, Financial growth, Protection of minor players, Remuneration, Reputation, Support, Youth development, [Bribery], [Exploitation], [Illegal betting], [Money-laundering], [Trafficking of young players] |

| Competitors | |
|---|---|
| Rival football clubs | Audience increase, Competitive balance, Ethical and fair attitude, Fan engagement, Financial growth, Good practices, Knowledge, Media attraction, Sponsors attraction, Team development, [Financial loss] |
| Other sports, leisure, and recreational activities | Good practices, Media attraction, Sponsors attraction, Sporting culture, [Revenue decrease] |
| Other spectacles and entertainment industries | Audience increase, Good practices |

Table 2: The secondary stakeholders' value components

| Stakeholders | Value |
|---|---|

| National Government and regulatory authorities | |
|---|---|
| Government | Happiness, National cohesion, Physical activity, Physical and social health improvement, Social inclusion, Taxation, Well-being, [Ideology promotion], [Masses manipulation], [Political legitimacy] |
| Municipalities - Local authorities | Health, Physical activity, Social cohesion, Social inclusion, Solidarity, Taxation, Well-being |
| National anti-doping organization | Dope free football, Education |
| Sports Grounds Safety Authority | Licensing, Service-safety-security |
| Police | Information, Public order, Service-safety-security |

| International and local football union bodies | |
|---|---|
| International Federation of Professional Footballers | Anti-racism, Attractive environment, Dope free football, Education, Gender equality, Human dignity, Match-fixing, Protection of minor players, Remuneration, Respect, Social dialogue, Solidarity, Support |
| National Footballers Association | Anti-racism, Attractive environment, Dope free football, Education, Gender equality, Human dignity, Match-fixing, Protection of minor players, Remuneration, Respect, Social dialogue, Solidarity, Support |
| National Referees Association | Match-fixing, Personal development, Support |
| National Football Coaches Association | Personal development, Support |

| Match officials and staff | |
| --- | --- |
| Referees and observers | Job satisfaction, Prestige, Recognition, Remuneration, Reputation, [Personal abuse] |
| Event management staff and volunteers | Attractive environment, Job satisfaction, Prestige, Remuneration |

| Grassroots and academies | |
| --- | --- |
| Academy coaches and staff | Attractive environment, Job satisfaction, Personal development, Recognition, Remuneration, Transition support, Work stability, [Bullying behaviour], [Physical abuse], [Verbal abuse] |
| Youth football players | Personal development, Club culture and identity, Engagement, Enjoyment, Friendship, Fun, Support, [Low self-esteem], [Poor sportsmanship], [Discouragement], [Ego], [Aggression], [Psychological abuse], [Exploitation], [Trafficking of young players] |
| Parents | Education, Enjoyment, Family communication, Friendship, Fun, Lessen adolescent problem behaviours, Pedagogy, Price, Quality, Training grounds, Youth development, Youth engagement, [Anxiety], [Parent pressure], [Wrong perception] |

| Society | |
| --- | --- |
| General society | Anti-racism, Climate change, Diversity, Education, Financial growth, Gender equality, Human dignity, Human rights, Integrity, Job creation, Mental health, Social development, Social inclusion, Solidarity, Non-discrimination, [Corruption], [Doping], [Football violence], [Money laundering] |
| Local businesses | Financial growth, Audience increase |

The identification and conceptualisation of the industry's distinct values for every primary and secondary stakeholder, enables every industry actor to better comprehend the collaborative value and align interests and strategies that will allow them to measure and manage the direct and indirect relationships and synergies within the industry. In the course of the above, the development of the theoretical framework of stakeholder-value relationship, for both primary and secondary stakeholders, acts as a blueprint for both theory and practice.

## IMPLICATIONS

The research contributes substantially to the limited current knowledge, by examining and delineating a theme that was only partially studied in the past. Manifestly, this research develops a framework of stakeholder-value relationships for both, primary and secondary stakeholders, with the novelty that, for the first time, it interrelates all the major industry actors and values, which may have been individually studied, but never collectively. In addition, the study provides a comprehensive framework that synthesises and makes it easy to understand the underlying factors, actors, powers, and ultimately the motivations to do business in the football industry, defined by the balance and interrelationships of stakeholders and the value exchanges therein.

# REFERENCES

Brownell, S. and Besnier, N. (2019), "Value and values in global sport", Sociocultural Anthropology, Oxford University Press USA, pp.1-25

Dodo, O.E., van Niekerk, R.L. and Lyoka, P.A. (2020), "Theoretical and conceptual framework for sports development: a stakeholder strategic diversity management model approach", International Journal of Sport & Society, Vol. 11 No. 4, pp.17-36Doidge, M. and Lieser, M. (2018). The Importance of Research on the Ultras: Introduction. Sport in Society 21, no. 6: pp. 833-840

Toma, S.G. and Catana, S. (2021), "The value of brand in the football industry", Annals-Economy Series, Constantin Brancusi University, Faculty of Economics, Vol. 1, pp.27-31

Woratschek, H., Horbel, C. and Popp, B. (2020), "Determining customer satisfaction and loyalty from a value co-creation perspective". The Service Industries Journal, Vol. 40, No. 11-12, pp.777-799.

Yiapanas, G., Thrassou, A. and Vrontis, D. (2022), "A holistic strategic perspective of football industry stakeholders", J. International Business and Entrepreneurship Development, Vol. 14, No. 3, pp.349-377.

# BEYOND THE GAME: A TWO-DECADE SYSTEMATIC LITERATURE REVIEW OF ADVERTISING IN DIGITAL GAMES

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## ABSTRACT

## INTRODUCTION

As the use of digital media continues to grow, embedding advertised content within digital games has become an increasingly important tool for marketers to reach consumers in new ways (Chaney et al., 2018; Pelsmacker et al., 2019). This type of advertising allows companies to create more interactive and engaging experiences for their target audiences, potentially leading to increased brand awareness and sales.

Within the domain of digital games, current literature defines in-game advertising (IGA) and advergames (AG) the two main types of gamified advertising. IGA involves placing one or more brands in existing games, through static virtual billboards (as in FIFA 23) or in-game product placements. Conversely, AG refers to a branded games developed to convey a specific brand message (Terlutter & Capella, 2013). Moreover, as gaming is interactive, intense and offers a long-lasting exposure (De Hesselle et al., 2021), marketers have the opportunity to engage consumers through innovative and immersive experiences (Tran & Strutton, 2013; Chaney et al., 2018; Pelsmacker et al., 2019). However, there are questions about the effectiveness of gamified advertising and its impact on consumer behavior (Van Berlo et al., 2022). While gamified advertising has been shown to be highly effective in stimulating positive consumer responses, it has also been found to hinder cognitive processing (van Berlo et al., 2021). Although prior research illustrates a diverse range of gamified advertising variable (e.g., adv characteristics, player characteristics, etc.) and consumer outcomes (e.g., psychological reactance, brand attitude, etc.) (Terlutter and Capella, 2013; van Berlo et al., 2022). Understand what their role is and how they influence consumer behavior is now a significant and inevitable topic for both academics and practitioners. Thus, a more grounded and comprehensive understanding of this phenomenon is clearly needed in the interests of academic knowledge and marketing practice. The aim of our review is to provide an overview of the state of art focusing of trends, benefits, and challenges associated with advertising in digital games, as well as the impact it has on consumer behavior. Thus, we intent to answer to the following questions:

RQ1: Which channels (journals, articles, authors and institutions) are the most influential?

RQ2: What are the research cluster and trends in the bibliometrics of IGA and its impact on consumer behavior?

## METHODOLOGY

To answer our research questions and identifying research gaps and research directions, a systematic literature review approach is deemed to be most appropriate (Vrontis et al., 2021). We first systematize the literature of the last 20 years, through bibliometric co-citation analysis (Bargoni et al., 2023) providing a first descriptive analysis. To identify the relevant literature, we used Web of Science database, which is one of the most used for bibliometric analysis (Singh et al., 2021). The identification of the keywords was based on previous work in systematizing the literature (Terlutter and Capella, 2013; Van Berlo et al., 2022) and a subsequent refinement and enrichment process. The query utilized the Boolean OR operator and was as follows: "gam* advertis*" or "in-game advertis*" or "advergam*" or "branded gam*" or "product placement*" or "brand placement*" or "brand exposure" and gam*. Furthermore, researchers searched through author keywords and article names to identify others relevant papers (Vrontis et al., 2021). Once new keyword was found, it was included within the research query, resulting in a total of 1,250 articles.

Moreover, we restricted our search to peer-reviewed journal articles written in English and excluded books, book chapters, conference proceedings, editorials, and other nonrefereed publications in order to be consistent with prior systematic reviews in this field (Terlutter and Capella, 2013; Van Berlo et al., 2022). Then, we restricted the research to the following area: Business and Management, Psychology, Social Sciences and Computer Sciences. Finally, we have excluded the articles that are not related to IGA and AG, resulting in 164 articles.

## PRELIMINARY FINDINGS

The final sample of 164 articles (Fig. 1) the emerges from a preliminary literature analysis through Web Of Science database, is composed by 55 journal and an average citation level of 28.14 per document. Fig.1 shows the development of the topic over the past 20 years in term of citations and publications. The first contribution is shown in 2002, but since 2006 the body of literature has steadily grown, partly due to the changing role of video games.

Figure 1 Publication between 2002 and 2023 - February 2023
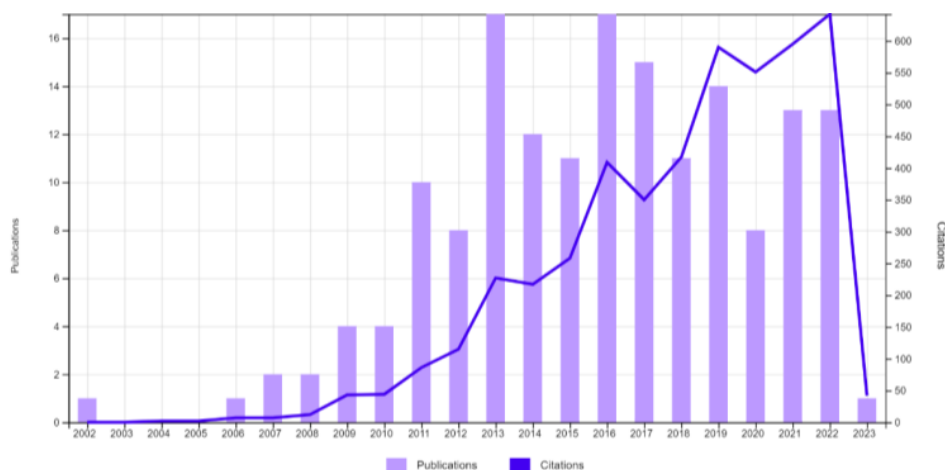


Furthermore, by analyzing the top five resources that include the largest number of citable articles, it emerges that all of them together represent the 45% of the total contributions (75 articles) which comprise the 70% of the total citations (3238 citations). Furthermore, as shown in Table 1, the most representative sources include *Journal of Advertising*, *International Journal of Advertising* and *Computers in Human Behavior*.

Table 1 Distribution of sources that published documents about IGA and advergame

| Sources | N° of Citable | Citations |
|---|---|---|
| Journal of advertising | 23 | 1619 |
| International Journal of Advertising | 21 | 668 |
| Computers in Human Behavior | 15 | 401 |
| Journal of Consumer Behaviour | 9 | 196 |
| Journal of Interactive Advertising | 7 | 354 |

Moreover, we provide an overview of the most cited articles to map the most influential contributions in the literature. The aggregate of the five most cited articles composes 343 nodes and represent the 22% (1007 citations) of the total citations.

Table 2 Top five most cited research

| Sources | Citations | Nodes |
|---|---|---|
| Lee and Faber (2007) | 244 | 81 |
| Mallinckrodt and Mizerski (2007) | 204 | 65 |
| Nelson (2002) | 196 | 58 |
| Terlutter and Capella (2013) | 189 | 82 |
| Van Reijmersdal et al. (2012) | 174 | 57 |

Finally, we conducted a co-citation analysis of the 30 top-cited articles as shown in Fig.2. Lines connecting the nodes reflect co-citation links, and an arrow denotes the citation relationship between

the elements. The strongest nodes in our citation map are numbered 7 (Lee & Faber, 2007), 8 (Mallinckrodt & Mizerski, 2007), and 16 (Cauberghe & De Pelsmacker, 2010).

Figure 2 Co-citation mapping of 30 top-cited articles in the sample
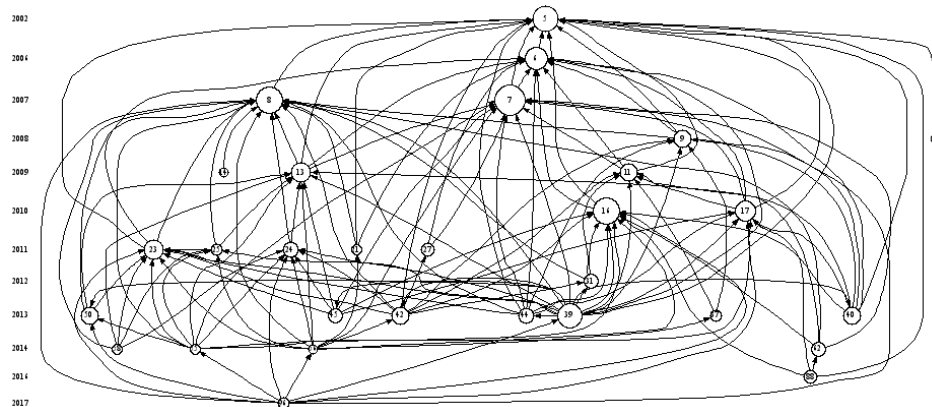


Future steps refer to a content analysis through which clustering the role of variables on consumer behavior that previous systematic reviews identified (Terlutter and Capella, 2013; van Berlo et al., 2022), and visualize it in a framework.

*Keywords: in-game advertising; advergame, gamified advertising, product placement, digital games, branded content*

## REFERENCES

Bargoni, A., Alon, I., & Ferraris, A. (2023). A systematic review of family business and consumer behaviour. Journal of Business Research, 158, 113698.

Cauberghe, V., & De Pelsmacker, P. (2010). AG: The Impact of Brand Prominence and Game Repetition on Brand Responses. Journal of Advertising, 39(1), 5–18.

Chaney, I., Hosany, S., Wu, M.-S. S., Chen, C.-H. S., & Nguyen, B. (2018). Size does matter: Effects of IGA stimuli on brand recall and brand recognition. Computers in Human Behavior, 86, 311–318. https://doi.org/10.1016/j.chb.2018.05.007

 de Hesselle, L. C., Rozgonjuk, D., Sindermann, C., Pontes, H. M., & Montag, C. (2021). The associations between Big Five personality traits, gaming motives, and self-reported time spent gaming. Personality and Individual Differences, 171, Article 110483

Lee, M., & Faber, R. J. (2007). Effects of Product Placement in On-Line Games on Brand Memory: A Perspective of the Limited-Capacity Model of Attention. Journal of Advertising, 36(4), 75–90.

Mallinckrodt, V., & Mizerski, D. (2007). The Effects of Playing an Advergame on Young Children's Perceptions, Preferences, and Requests. Journal of Advertising, 36(2), 87–100.

Pelsmacker, P., Dens, N., & Verberckmoes, S. (2019). How Ad Congruity and Interactivity Affect Fantasy Game Players' Attitude toward IGA. Journal of Electronic Commerce Research.

Singh, V. K., Singh, P., Karmakar, M., Leta, J., & Mayr, P. (2021). The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis. Scientometrics, 126 (6), 5113–5142.

Terlutter, R., & Capella, M. L. (2013). The Gamification of Advertising: Analysis and Research Directions of IGA, AG, and Advertising in Social Network Games. Journal of Advertising, 42(2–3), 95–112.

Tran, G. A., & Strutton, D. (2013). What Factors Affect Consumer Acceptance Of In-Game Advertisements?: Click "Like" to Manage Digital Content for Players. Journal of Advertising Research, 53(4), 455–469.

van Berlo, Z. M. C., van Reijmersdal, E. A., & Waiguny, M. K. J. (2022). Twenty years of research on gamified advertising: A systematic overview of theories and variables. International Journal of Advertising, 0(0), 1–10.

van Berlo, Z. M. C., van Reijmersdal, E. A., Smit, E. G., & van der Laan, L. N. (2021). Brands in virtual reality games: Affective processes within computer-mediated consumer experiences. Journal of Business Research, 122, 458–465.

Vrontis, D., Makrides, A., Christofi, M., & Thrassou, A. (2021). Social media influencer marketing: A systematic review, integrative framework and future research agenda. International Journal of Consumer Studies, 45(4), 617– 644.

# ON THE ROLE OF COMMUNICATION AND MANAGEMENT ENGAGEMENT FOR ACQUISITION SUCCESS: A STUDY OF ISRAELI STARTUPS ECOSYSTEM

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## ABSTRACT

**Objective**: The aim of this paper is to shed light on the effects of communication and management engagement on start-up acquisition success.

**Research Design & Methods**: The present paper adopts a behavioral perspective and uses a set of quantitative data collected from start-up companies from Israel, which were taken over by international firms, in order to explore the role of the acquired firm's management. Particular emphasis is put on communication and the managerial engagement in the post-acquisition stage.

**Findings**: Partial empirical support for these relationships can be found. Subsequently, a number of avenues for future research are discussed.

**Implications & Recommendations**: Specifically, it is argued that communication and management engagement mediate the influence of a number of employee-related and organizational factors on acquisition performance.

**Contribution & Value Added**: Taking into account the significant failure rate of international acquisitions, the identification of their critical success factors is an important issue. This pertains also to the acquisition of startups by established firms, for which it is a strategy for enhancing their technological base. The paper also contributes to extant literature by adopting the acquired firm's perspective.

## INTRODUCTION

Due to significant competitive pressures in the global environment, firms need to be able to introduce new products and services rapidly (Cefis & Marsili, 2006). Therefore, constant innovation plays a vital role for firm performance in the long run (Cai et al., 2017; Cheng & Yang, 2017). Hence, established companies often recur to mergers and acquisitions (M&A) in order to benefit from the technological assets of smaller companies which pose a source of innovation (Zaksetal.,2018).

Start-up acquisition can be regarded as a crucial way of enhancing the technological knowhow by mature organizations (Agarwal & Helfat, 2009; Santos & Eisenhardt, 2009). However, in spite of their vital role for firm competitiveness, a significant number of technological M&A do not meet their

objectives (King et al., 2008). This may be related to the fact that the know-how which is accessed by the acquiring firms is mostly complex, contextual and rooted in a interpersonal networks (Ranft &Lord, 2002). Furthermore, M&A targets are often small and medium-sized enterprises (SMEs), as well as start-up companies. Hence, the risk that the business cultures and processes of the acquiring and acquired firms will not be aligned, is even higher (Popli et al., 2017).

Extant research has indicated that the performance of M&A is indeed dependent on the behavior of the target firm's employees, including particularly **trust** (Inkpen & Currall, 2004; Stahl et al., 2012) and **commitment to change** (Van Dam, 2005; Wanberg & Banas, 2000).

**Research aim:** To examine M&A's processes from a socio-cultural perspective: How an acquired firm should be managed in order to contribute to M&A's success.

**Findings:** It was found that in large companies (more than 200 employees), there was a significant lower engagement of management participation in the integration process. Similar results emerged in relation to the variables of 'trust', 'readiness and commitment', 'communication' and 'satisfaction', where significant differences between small and large size organizations were detected. No significant effects were identified in relation to 'previous experience with acquisitions.

The study corroborates earlier arguments about the relevance of the engagement of an appropriate leadership steering the change process. In fact, the main managerial competences which are crucial for a successful merger or acquisition pertain inter alia to carefully planning the timing of the integration process so as to complete it effectively. Not least, also the competence to motivate the members of both organizations to demonstrate cooperative behavior, is of vital importance. In particular, the founder of the target firm is a key individual who had shaped the organization in a significant manner (Shane et al., 2003). It is the founder who is often closely associated with the sources of competitive advantage of the firm (Baum & Locke, 2004), thus having more influence over employee motivation and over the company culture than professional managers.

## CONCLUSION

It was hypothesized- the mediating effects of management engagement during the acquisition processes and the quality of communication delivered to the acquired company's employees by the management team. Our hypotheses were partly supported, as we found evidence of a partial mediation.

Mistakes in managing the communications may lead to rumors, which can aggravate negative emotions accompanying the change process and add to resistance to change among organizational members

Start-ups, just like any other organization, need to formally inform their employees on any critical change, including M&A intentions.

exploring the influence of national cultures on the acculturation process and outcomes of start-up acquisitions might yield different conclusions with regard to communication and management engagement during the integration after the acquisition deal. Furthermore, based on larger samples, a process perspective on changes in autonomy and its relationship with integration outcomes could be explored in a longitudinal design.

## REFERENCES

Junni, P., Sarala, R. M., Tarba, S.Y., &amp; Weber, Y. (2015). The Role of Strategic Agility in Acquisitions. British Journal of Management, 25(4), 596-616.

King, D. R., Slotegraaf, R. J., &amp; Kesner, I. (2008). Performance implications of firm resource interactions in the acquisition of R&amp;D-intensive firms. Organization Science, 19(2), 327-340.

Polowczyk, J., Zaks, O. &amp; Trąpczyński, P. (2021). On the role of communication and management engagement for acquisition success: A study of Israeli startups. International Entrepreneurship Review, 7(4), 7-22.

Popli, M., Ladkani, R.M., &amp; Gaur A.S. (2017). Business group affiliation and post-acquisition performance: An extended resource-based view. Journal of Business Research, 81, 21-30.

Ranft, A. L., &amp; Lord, M. D., (2002). Acquiring new technologies and capabilities: A grounded model of acquisition implementation. Organization Science, 13(4), 420-441.

Stahl, G. K., Chua, C. H., &amp; Pablo, A. L. (2012). Does national context affect target firm employees' trust in acquisitions? Management International Review, 52(3), 395-423.

Trąpczyński, P., Zaks, O., &amp; Polowczyk, J. (2018). The Effect of Trust on Acquisition Success: The Case of Israeli Start-Up M&amp;A. Sustainability, 10(7), 2499.

Weber, Y., Rachman-Moore, D., &amp; Tarba, S. Y. (2012). HR practices during post-merger conflict and merger performance. International Journal of Cross Cultural Management, 12(1), 73-99.

Zaks, O., Polowczyk, J., &amp; Trąpczyński, P. (2018). Success factors of start-up acquisitions: Evidence from Israel. Entrepreneurial Business and Economics Review, 6(2), 201-216.

# EPISTEMOLOGY OF COMPLEXITY IN A STATE OF CRISIS.  LEADERSHIP AND COORDINATION AS CATALYSTS OF NEGHENTROPY

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## ABSTRACT

This contribution is intended as a reflection on the soul of the corporate system and its ability to respond dynamically to maintain conditions of vitality and prosperity in the face of ever new and sometimes unforeseen events.

As in any living, dynamic and complex system, the harmonious functioning of the various parts of the system is underpinned by mechanisms of regulation, self-regulation and autopoiesis; the company is therefore considered to be a dissipative system. The regulatory and autopoietic mechanisms are activated by a constant two-way internal-external exchange of energy and matter, capable of stimulating a negentropic evolutionary dimension, even in situations of instability (Prigogine and Nicolis, 1982).

The company that achieves its goals is said to be "effective"; the company that does so at the lowest cost is said to be "efficient"; the company that does both is said to be "economically managed".

Underlying this discourse is the often taken-for-granted fact that firms must operate under *equilibrium* conditions or else exit the market (in the absence of subsidies from external agents). But companies are not biological systems that are inherently capable of reaching homeostatic states. Too often we forget that it is mainly the 'visible hand' of top managers that influences the state in which a firm finds itself.

The search for equilibrium and its maintenance are hardly self-generating.

The fathers of our disciplines already claimed that "economy expresses the ability of management to maintain economic equilibrium" and "profitability expresses the ability of management to generate positive income" (Caramiello, 1993).

It is the economic actors - the owner-entrepreneurs, in the case of small companies -  and the top managers - in the case of large companies - or, more generally, the leaders who make the difference, who lead a business system to operate in conditions of equilibrium (economic, financial and organizational), and who have to restore these conditions when they change in response to events, internal or external to the organization's boundaries, whether foreseeable or not.

Immersed as they are in *VUCA* (volatile, uncertain, complex, ambiguous) environments, today's companies and the leaders who run them are called upon to rebalance their organization, for example

to enable it to respond appropriately to a shock by ensuring business continuity (Volpe and Castaldo, 2021).

Thus, each entropic trend tends to be matched by a syntropic (or neg-entropic) one in order to achieve states of 'dynamic equilibrium'. This involves the coordination of the business system and the need to reach situations of interdependence (Grandori, 1995); to find or rediscover the harmony of interpersonal integration relationships, to ensure a compatible relationship between the interests of the various stakeholders and to guarantee operational and managerial policies in line with the company's objectives and mission.

As the *Patres* of Business Administration have affirmed, "the company is not a dissociated mass, it is not a collection, it is not a temporary juxtaposition of unrelated factors or phenomena [...] in its structures it is always renewing and recomposing itself; in the dynamic processes it carries out it is always transforming and openly manifesting itself, as dictated by the changing circumstances to which the company must adapt" (Zappa, 1956).

In other words, it is not enough to design and implement orderly structures, it is necessary to keep them in harmony and ensure their vitality.

Our contribution aims to answer the following research question: "If today's companies operate in extremely dynamic, ambiguous and, to some extent, unpredictable contexts, what characteristics should top management possess and what levers should it use to manage such hyper complexity, to balance entropic and neg-entropic forces and to achieve states of 'dynamic equilibrium' that allow the company to survive and develop?".

This question is particularly relevant when it comes to managing serious crises (wars, pandemics, international economic and financial crises, etc.), which require a radical adaptation of corporate governance to environmental dynamics.

The research methodology is qualitative, based on the identification and analysis of a selected bibliography. The approach is interdisciplinary and covers various fields of study: economics, management, philosophy, business organization.

Inspired by general systems theory, we have endeavored to integrate the various specialist contributions in order to develop a framework on the basis of which the business system can be interpreted as a unitary, integrated reality in continuous evolution. A socio-economic system that is open, complex, probabilistic, ductile, evolving according to the principle of equifinality and endowed with regulatory processes that make it possible to achieve homeostatic situations at increasingly complex levels (Beer, 1969).

These equilibria are, of course, of a different nature from the static equilibrium of closed systems, in which entropy (disorder and lack of coordination) tends to increase continuously and vital energy (useful in terms of work) decreases progressively (Prigogine and Nicolis, 1982).

In open organizations, the regulatory processes control the functioning and development of the system, with the aim of maintaining a certain degree of stability and order, and of allowing the system itself to undergo processes of development and differentiation, also through the acquisition of new vital energies from outside: the capacity for original vision, organizational skills, specialized and exclusive technical and managerial knowledge, creativity, imagination, and so on. The acquisition of such new energies can also take place within the organization, through a process of autopoiesis triggered by enlightened and intelligent management.

Management and coordination develop the regulatory process by activating 'neg-entropy'/syntropy, which guarantees the evolution of the system towards higher order 'differentiations' (von Bertalanffy, 1968).

What we want to emphasize, however, is that the search for homeostatic equilibrium, differentiated development and the acquisition of *pneuma* ($\pi\nu\varepsilon\tilde{\upsilon}\mu\alpha$, in ancient Greek) - to which we will give a specific definition in the context of business activity - are not generated automatically.

It is the quality of management that creates these conditions and determines the success of the system and its ability to cope with internal and external crises, even the most unpredictable and serious ones (Zanda S., 2018).

We also aim to highlight and discuss the nature of the effective and efficient management process and the management interventions that management can rely on to ensure the survival and growth of the business system.

These can be summarized as follows:

A. Restructuring of organizational roles and lines of influence, both authoritarian and non-authoritarian, linking the various members of the corporate system (this is structural coordination).

B. Creating and maintaining an efficient information system that allows decision-making, execution, and control processes to be implemented at the appropriate level; in times of crisis, the information system plays a key role in corporate governance.

C. Redefinition of the decision-making process (definition of objectives and strategic management paths to achieve them); in times of crisis, decisions must be leaner, faster, based on concreteness, uniqueness of action, imagination, and creativity.

With regard to the application of the principle of equifinality, the quality of the search processes and the management's ability to elaborate and implement a "strategic management of installation", i.e. the renewal of the existing and the construction of the new, are very important (Coda, 2021).

D. Search and selection of personnel suitable for the roles to be filled, training and education according to the specific needs of the organization.

E. Adopting an appropriate management model.

The latter will be based on 1) the ability to operate by creating a congruent entity of "value" for all internal and external stakeholders; 2) respect for the economic-financial balance of management and the continuous development of operational efficiency; 3) management orientation towards the common good, respect for the environment and the growth of the people working in the organization, disseminating several levels, in the strategic, tactical and operational processes, a "distinctive moral practice". A moral practice  can be understood as "a practice whose actions or inactions influence others, both now and in the future. It helps shape the moral order of organizations and societies, which, in turn, affects individual and organizational behaviors' (Carnegie *et al.*, 2022).

With regard to the last point, our research proposes to analyze whether, in 'VUCA' environments, potentially characterized by unpredictable and severe crises, a leadership style inspired by stakeholder theory (SKT) is the most effective, i.e. one that, based on a 'strategic management approach', tends to overcome the opposition between economics and ethics and to integrate the interests of the various stakeholders.

*Keywords: complexity, entropy, organisation, coordination, management, leadership, VUCA context, crisis.*

## REFERENCES

Beer, S. (1969), Cibernetica e direzione aziendale, Bompiani, Milano, Italy.
Carnegie, G.D., Ferri, P., Parker, L.D., Sidaway, S.I.L., Tsahuridu, E.E. (2022), Accounting as Technical, Social and Moral Practice: The Monetary Valuation of Public Cultural, Heritage and Scientific Collections in Financial Report, in AAR, Australian Accounting Review, No. 0 Vol. 0, 1–13, John Wiley & Sons Australia, Ltd on behalf of CPA, Australia.
Caramiello, C. (1993), L'azienda: alcune brevi riflessioni introduttive, Giuffrè, Milano, Italy.
Coda, V. (2021), Il buon governo dell'impresa tra stabilità e dinamismo, Egea, Milano, Italy.
Geier, M.T. (2016), Leadership in extreme contexts: transformational leadership, performance beyond expectations?, Journal of Leadership & Organizational Studies, Vol. 23, No. 3, pp. 234-247.
Grandori, A. (1995), Organizzazione e comportamento economico, Il Mulino, Bologna, Italy.
Hannah, S.T., Uhl-Bien, M., Avolio, B.J., Cavarretta, F.L. (2009), A framework for examining leadership in extreme contexts, The Leadership Quarterly, Vol. 20, No. 6, pp. 897-919.
Maturana, H., Varela, F. (1980), Autopoiesis and Cognition, Reidel, Dordrecht, Nederland.
Normandin, J.M., Therrien, M.C. (2016), Resilience factors reconciled with complexity: The dynamics of order and disorder, Journal of Contingencies and Crisis Management, Vol. 24, No.2, pp. 107-118.
Prigogine, I., Nicolis, G. (1982), Le strutture dissipative. Auto organizzazione dei sistemi termodinamici di non equilibrio, Sansoni, Firenze, Italy.

Volpe, A., Castaldo, F. (2021), Complessità, incertezza e urgenza di agire. Imparare dagli imprenditori, Sviluppo & Organizzazione, No. 297, pp.34-40.

von Bertalanffy, L. (1956), General System Theory, in von Bertalanffy, L. & Rapaport, A. (Eds.). General systems: Yearbook of the Society General Systems Research, Vol.1, The Society for General Systems Research, Ann Arbor, MI, Vol. 1, pp. 1-10.

Yates, F.E. (2012), Self-organizing systems: The emergence of order, Springer Science & Business Media, Los Angeles, CA.

Zanda, S. (2018), Building Efficient Management and Leadership Practices: The Contemporary Relevance of Chester I. Barnard's Thought in the Context of the Knowledge-based Economy, Springer, Washington, D.C.

Zappa, G. (1956), Le produzioni nell'economia delle imprese, Vol. 1, Giuffrè, Milano.

# CHANGING MANAGERIAL FOCUS BETWEEN BUSINESS AND POLITICAL EFFORTS IN INTERNATIONAL MARKETS

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## ABSTRACT

## BACKGROUND

Recent trends indicate a shift toward internal economic orientation and a decline in global relationships due to geopolitical factors. Countries like the United States and China have become more protectionist, prioritizing national power over economic considerations. In some instances, political leaders are sacrificing economic conditions for power consolidation, as seen in Russia's war in Ukraine. The rise of populist politicians further adds to the complexity of the global landscape.

## PURPOSE

This paper aims to explore how and when the changing dynamics between a global and internal focus by governments should influence the strategies of international firms. It examines the balance between a strictly business approach and a political strategy, particularly in unstable and shifting political environments.

## FINDINGS

Firms operating in industries of national priority, such as defense, energy, water supply, and sometimes agriculture and food, need to cultivate relationships with government agencies in order to succeed. Firms in other industries need to develop and allocate resources to a political strategy in countries where the government controls the economic activities of foreign firms and most industries. The balance between a strictly business and a political strategy should be relatively clear in stable situations. But when the political situations is shifting slowly there is a dilemma when and how to change the delicate balance. In unstable political environments, firms must develop a capacity for early identification of political changes and a quick response. The research proposes a change readiness approach consisting of trigger identification, preparation for action, and action activation.

Trigger identification involves monitoring the political environment for early and weak signals. Such signals can include shifts from democracy to autocracy, political instability leading to anticipated changes in government control, and policy shifts resulting in increased restrictions on businesses and

foreign firms. The identified signals must be processed to distinguish meaningful developments from random noise, considering their likelihood, impact, and timing. Once a change in action is deemed necessary, the firm should move to the preparation phase.

Preparation for action entails allocating the necessary resources and organizing for a timely response. The speed at which triggers are translated into action is crucial for effective strategic change. The third phase involves modifying the balance between business and political efforts and activating specific action projects. Care must be taken to avoid mistaking the need for a major strategy shift with incremental moves. Political activities can include recruiting representatives with close ties to the regime, lobbying, petitioning, developing programs favored by the government, making financial contributions, and adjusting promotional strategies. Similar to business activities, political moves need to be continually evaluated, and corrective action should be taken when necessary.

For many firms, timely and effective strategic adaptation to political developments is crucial for maintaining positive performance.

## CONTRIBUTION

This research paper contributes to the understanding of the evolving relationship between business and politics in international markets. It provides insights into the challenges faced by firms in balancing business and political strategies, particularly in shifting political environments. The proposed change readiness approach offers a framework for firms to navigate the complexities of political dynamics and enhance the prospects for success. The change readiness framework can also be used to initiate further academic research.

*Keywords: International, Political, Change, Business, Strategy, Marketing, Environment.*

## REFERENCES

Cohen P., Why It Seems Everything We Knew About the Global Economy Is No Longer True, The New York Times, June 19, 2023.

Etemad, H. The evolving international entrepreneurship orientations and international entrepreneurship capital in the rapidly changing and digitizing international environments., Journal of International Entrepreneurship 20, 345–374 (2022).

Timmor Y. and Zif J., Change Readiness: An Alternative Conceptualization and Empirical Examination, EuroMed Journal of Business, Vol. 5, No. 2, 2010, pp. 138-165.

Zif J., Explanatory Concepts of Managerial Strategic Behavior in State-Owned Enterprises - A Multinational Study", J. Zif, Journal of International Business Studies, Vol. XIV, No.1, Spring/Summer 1983.

Zif J., Managerial Strategic Behavior in State-Owned Enterprises – Business and Political Orientations", J. Zif, Management Science, Vol. 27, No. 11, November 1981, pp. 1326-1339.

# THE IMPACT OF FEMALE MANAGERS ON THE GENDER PAY GAP: EVIDENCE FROM COMPANY-LEVEL DATA FOR LITHUANIA

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## ABSTRACT

In this research, it was presented how female executives affect wage distributions in companies. The study started with a literature review on the research subject to find out whether the pay gap between men and women is smaller in organizations headed by women. The topic, widely analyzed by foreign authors, has not been studied much in Lithuania, and there was a lack of information on how women's management affected the pay gap between men and women in Lithuanian companies.

The main goal in this study was to determine whether female leadership in Lithuania reduced the gap between men's and women's labor income. Our main objectives were to evaluate how female executives affected the gender pay gap, and to find out whether the impact of female managers on the gender wage gap varied across economic sectors. Two types of research methods – statistical analysis of the data and construction of regression – were used to test our main research hypothesis.

In our preliminary opinion, in companies led by women, the gap between men's and women's labor income should be smaller, because: (1) the wages of the managers themselves should raise the average of all workers' wage, (2) women managers would attract more women to their middle management team, and (3) female executives would encourage other women to climb the career ladder in organizations.

Some authors agreed that women managers have certain characteristics that are different from men (Kaplan *et al.*, 2012; Rosener, 1990; Shin, 2012; Staines *et al.*, 1974; Derks *et al.*, 2011) (Table 1). They can be either the "good fairies", enhancing other people's sense of self-worth and energizing others, or real "queen-bees" defending their hard-won and male-dominated position.

| Role of the "good fairy" | Role of the "Queen-bee" |
|---|---|
| Women are more likely to use soft skills to manage (Kaplan et al., 2012) | It is argued that after becoming a leader, a woman, to defend her hard-won and male-dominated position, must and tries to prove that she is not as weak as other women (Staines et al., 1974; Derks et al., 2011) |
| Women attempt to "enhance other people's sense of self-worth and to energize followers" (Rosener, 1990) | |
| Female top executives follow affirmative action policies (Shin, 2012) | |

Table 1. *Leadership styles of women*

*Source:* compiled by the authors

Researchers have acknowledged that increasing the female share in management significantly lowers the gender pay gap (Bell, 2005; Cardoso and Winter-Ebmer, 2010; Hirsch, 2013; Tate and Yang, 2015; Kunze and Miller, 2017; Flabbi *et al.*, 2019). Flabbi *et al.* (2019) found that female leadership had a positive impact at the top of the female wage distribution and a negative impact at the bottom. According to their work, female chief executive officers might pay women wages closer to their actual productivity and match them jobs that are more in line with their skills. Hirsch (2013) found that the effect of female share in management on gender pay gap, was more pronounced for the female share in second-level than in first-level management because they were more likely to be involved with hiring, grouping, or promotion decisions and to directly interact with non-managerial workers. According to Kunze and Miller (2017), the finding that greater female representation at higher ranks narrowed the gender gap in promotion rates at lower ranks suggested that policies that increased female representation in corporate leadership could have spillover benefits to women in lowers ranks.

On the other hand, some authors found that "queen-bee syndrome" existed which was attributed to women who achieved individual success in male-dominated work environments by adapting to the masculine culture, referred to women managers to distance themselves physically and psychologically from other women and to approve and legitimize the existing gender hierarchy (Staines *et al.*, 1974; Derks *et al.*, 2011).

There are studies that do not show a strong effect of female leadership on the gender earnings gap. Maida and Weber (2022) found that there was no evidence that gender quota alone represented an effective tool to close gender disparities. Cohen and Huffman (2007) concluded that the promotion of women into management positions might benefit to all women, but only if female managers reached relatively high-status positions.

Thus, based on the review of existing literature, the following hypothesis was stated in this study:

$H_1$: The gap between men's and women's labor income in Lithuania is smaller in women-led organizations than in men-led organizations.

To have a true picture of the female executives' impact on the gender pay gap among employees in Lithuania, the statistical data analysis and regression models were applied. Sample of the research was 3.8 thousand companies and organizations in which 50+ people worked and in which the manager's gender was the same two years in a row. The study examined organization level data for June of 2022: number of insured men and women, average of insured income from which employers paid social insurance contributions and other data which are presented particularly in Table 2. The researchers analyzed companies and institutions operating in the budgetary and non-budgetary sector.

Although it was estimated that in Lithuania in 2016-2019 the gap between men's and women's labor income has been decreasing, in recent years it has been recorded that the gap is no longer decreasing and remains around 14 percent. In 2022, the labor income gap between genders in the non-budgetary sector reached 15.9 percent, and in the budgetary sector - 10.2 percent.

The largest gap in labor income was determined in Lithuania between the age of 30-39, when a higher proportion of women take career breaks to raise children. Women's lower earnings lead to lower old-age pensions, putting women at greater risk of poverty. But how the things are different when women are the executives and when the men are? Can women and will they reduce the differences between male-and female-employees' labor income?

Firstly, overall average labor income was 15 percent higher in male-led companies than in women-led companies (Table 2). Secondly, women-led companies had a higher proportion of employees who earned up to the minimum monthly wage. And the labor income of the most qualified employees was less far from the labor income of a female manager than that of a male manager.

A deeper analysis showed that in female-dominated sectors (where the share of working women is 60 percent and more), male workers on average earned more than female workers, even if the manager was a woman. An exception existed only in economic activity of education. It seems that the educational activity could be called the domain of women, where the gap between the average incomes of men and women is atypical. In educational institutions headed by women, the difference between the wages of men and women is not significant, while in educational institutions headed by men, men earn a bit more. Perhaps there is a large share of female managers in this activity, but a deeper analysis shows that women are more likely to lead kindergartens and primary schools, while men are more likely to lead gymnasiums and high schools where wages are higher. Therefore, such structural differences also determine gap between the labor income of men and women.

Also, it turned out that economic activities of human health care and social work, education, accommodation and food service, public management could be called female-dominated sectors

because the share of working women in these economic activities was 69-84 percent. Therefore, in women-led organizations, the average insured income was lower for both women and men than in men-led organizations. Also, in women-led organizations, the gap between men and women's insurable earnings was smaller. In women-led private sector companies, the income gap between the manager and the highest qualified employees was smaller than that of men.

Therefore, there was a very small gap between the average salaries of men and women in budgetary sector. In addition to the already discussed education sector, it is possible to mention the economic activity of public management, where the gender pay gap was very small, men's labor income was 6 percent higher than women in organizations where women managed, and 8 percent higher in organizations where men managed.

Finally, the gap between the highest and lowest earnings in women-led private sector companies was greater than in men-led companies. In companies headed by women, a higher proportion of employees earned the lowest income, that is, less than the minimum monthly wage.

| Indicators | Total | | Non-budgetary sector | | Budgetary sector | |
|---|---|---|---|---|---|---|
| | Manager woman | Manager man | Manager woman | Manager man | Manager woman | Manager man |
| Average number of insured persons | 126 | 190 | 175 | 172 | 104 | 251 |
| Share of women among the insured, in percent | 76 | 45 | 61 | 37 | 83 | 73 |
| Average age of the insured | 48 | 45 | 42 | 43 | 51 | 51 |
| Average insured income of the insured (Eur) | 1 619 | 1 862 | 1797 | 1915 | 1540 | 1681 |
| Average insured income of women (Eur) | 1 636 | 1 732 | 1749 | 1754 | 1586 | 1658 |
| Average insured income of men (Eur) | 1 481 | 1 996 | 1956 | 2074 | 1273 | 1728 |
| Gap in insurable earnings between men and women (percentage) | -9 | 17 | 14 | 21 | -21 | 3 |
| Ratio of 75th and 25th quartiles (all workers, in times) | 2,13 | 1,99 | 2,47 | 1,98 | 1,99 | 2,03 |
| Share of insured persons who earned less than minimum wage, in percent | 14 | 9 | 14 | 8 | 14 | 12 |
| Ratio of executive pay to 75th quartile | 2,96 | 3,88 | 4,29 | 4,97 | 2,09 | 2,48 |

Table 2. *Primary results of analysis*

*Source:* compiled by the authors

The results of statistical data analysis and regression analysis allowed us to conclude that in women-led organizations in Lithuania, the gap between men's and women's labor income was smaller than in men-led organizations. The findings of this research were consistent with the "good fairy" leadership style of women, and correlated with the results of other authors finding evidence that

female managers improve outcomes for female employees (Bell, 2005; Cardoso and Winter-Ebmer, 2010; Hirsch, 2013; Tate and Yang, 2015; Kunze and Miller, 2017; Flabbi *et al.*, 2019). This suggested that policies that increase female representation in organizations leadership could have spillover benefits to other women working in those organizations.

The authors believe that this research contributes to the expansion of knowledge on female executives' impact on gender pay gap. The data reveal that in more regulated public sector the gap between men's and women's incomes is smaller. Thus, greater wage regulation, clearer wage-setting procedures can also lead to a narrower gender pay gap. In organizations of non-budgetary sector led by women, the larger gap between the highest and lowest income quartiles is associated with a higher proportion of employees earning less than the monthly minimum wage. Consequently, in these companies, many employees work part-time, and more often get sick or take care of children. In the future, continuing research could analyze what extent female managers determine the fact that there are more people earning the lowest income in the companies they manage: if women are really the "good fairies" who are more tolerant of employees who are absent from work more often, or if women, after all, are the ones who find it easier to get leadership positions in organizations where men are not as interested in leadership.

*Keywords: gender pay gap, "queen-bee", female managers, work income, female executives*

## REFERENCES

Bell, L. A. (2005). Women-led firms and the gender gap in top executive jobs.

Cardoso, A.R. and Winter-Ebmer, R. (2010), "Female-led firms and gender wage policies", Journal of ILR Review, Vol. 64 No.1, pp. 143-163.

Cohen, Philip N., and Matt L. Huffma (2007), "Working for the woman? Female managers and the gender wage gap", Journal of American sociological review, Vol. 72 No. 5, pp. 681-704.

Derks, B., Ellemers, N., Van Laar, C., & De Groot, K. (2011), "Do sexist organizational cultures create the Queen Bee?", British Journal of Social Psychology, Vol. 50 No. 3, pp. 519-535.

Flabbi, L., Macis, M., Moro, A. and Schivardi, F. (2019), "Do female executives make a difference? The impact of female leadership on gender gaps and firm performance", The Economic Journal, Vol. 129 No. 622, pp. 2390-2423.

Hirsch, B. (2013), "The impact of female managers on the gender pay gap: Evidence from linked employer–employee data for Germany", Journal of Economics Letters, Vol. 119 No. 3, pp. 348-350.

Kaplan, S. N., Klebanov, M. M., & Sorensen, M. (2012), "Which CEO characteristics and abilities matter?", The journal of finance, Vol. 67 No. 3, pp. 973-1007.

Kunze, A. and Miller, A.R. (2017), "Women helping women? Evidence from private sector data on workplace hierarchies", Journal of Review of Economics and Statistics, Vol. 99 No. 5, pp. 769-775.

Maida, A. and Weber, A. (2022), "Female leadership and gender gap within firms: Evidence from an Italian board reform", Journal of Ilr Review, Vol. 75 No. 2, pp. 488-515.

Shin, T. (2012), "The gender gap in executive compensation: The role of female directors and chief executive officers", Journal of the ANNALS of the American Academy of Political and Social Science, Vol. 639 No. 1, pp. 258-278.

Staines, G., Tavris, C., & Jayaratne, T. E. (1974). The queen bee syndrome.

Rosener, J. B. (2011). Ways women lead (pp. 19-29). Springer Netherlands.

Tate, G. and Yang, L. (2015), "Female leadership and gender equity: Evidence from plant closure", Journal of Financial Economics, Vol. 117 No. 1, pp. 77-97.

# BLOCKCHAIN PLATFORMS FOR DEVELOPING NEW BUSINESS OPPORTUNITIES: A TECHNOLOGY ACCEPTANCE MODEL PERSPECTIVE

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## ABSTRACT

## INTRODUCTION AND RESEARCH MOTIVATION

For their survival and growth in dynamic business contexts, companies employ innovative, possibly disruptive technology (Teece et al., 1997). Nowadays, one of these cutting-edge ICTs is blockchain that has the potential to significantly alter company structures, supply networks, and operations (Azzi et al., 2019; Banerjee, 2018; Chang et al., 2019). Although blockchain technologies are still in their infancy, they are growing in popularity thanks to advantages including increased visibility, the possibility for smart contracts, data security, and digitalization (Wang et al., 2019; Hughes et al., 2019; Wen et al., 2021a, b). The literature so far has been limited to dealing with what are the main features of blockchain technology with all its benefits in terms of improving business performance (Bag et al., 2022; Sharma et al., 2023). However, the impact that these features may have on the acceptance of disruptive technology in the enterprise has never been examined. Therefore, the purpose of this research is to fill this gap and study how the distinguishing features of BT (integrity, security, decentralization and reliability), which are extensively covered in the existing literature cited above, may affect the acceptance of the technology itself in SMEs. A recent study by AIShamsi et al., 2022 states how: the integrity of a blockchain refers to the accuracy and consistency of the data that is stored on it; the security of blockchain is achieved through a combination of cryptographic techniques and a tamper-evident ledger that makes it virtually impossible for anyone to manipulate or alter the data once it has been added to the chain; the decentralized of blockchain meaning that data is stored across a network of nodes (this means that there is no single point of failure, making it difficult for hackers to attack the network); the reliability of blockchain stems from several key features: decentralization, consensus and immutable.

## THEORETICAL MODEL

*Blockchain Technology - BT*

One of the newest internet-based applications, blockchain, has unique properties that make it suitable for usage in the supply chain. Blockchain technology has the potential to provide the company with such advantages. Over ten years ago (Nakamoto, 2018), blockchain technology first appeared in the

bitcoin space. It alludes to a completely distributed system for accumulating and maintaining a linear event log of transactions between networked participants that is linear, consistent, and immutable. Blockchain technology enforces transparency, which eventually leads to system-wide agreement on the validity of a complete transaction history in such a network (Risius and Spohrer, 2017, p. 386). According to this idea, the tamper-proof property of blockchains is being generated and that once transactions are validated in a decentralized system, changes are no longer possible (Y. Chen, 2018). Additionally, because every transaction can be tracked, organizations have the chance to reach the genesis node. Practically, the data is organized into blocks that link together to form a chain (Li et al., 2018), where the existing block stores the data from the preceding block. In a blockchain study, Kamble et al. (2019) found many enablers that blockchain may provide for greater performance, such as lead times reduction, transparency, and traceability. The advantages of blockchain in supply chains, according to Wang et al. (2018), include more visibility, disintermediation, better data security, etc. This indicates that any organization may improve its supply chain operations by utilizing blockchain technology, along with a number of other advantages like the reduction of transaction costs, greater product exposure thanks to strengthened traceability and supply chain participants' responsibility, etc. Examples of these industries include food safety and security, the wine industry, healthcare, e-commerce platforms, and such that. The result is an improvement in supply chain performance.

*Technology Acceptance Model – TAM*

Davis (1989) made a significant contribution by presenting two fundamental components that forecast technology adoption and usage at the person level. The two concepts are recognized as essential components of the technological acceptance model (TAM). These fundamental concepts are perceived usefulness (PU) and perceived ease of use (PEOU). Several models have been presented based on these roots throughout the past 30 years (Venkatesh et al., 2012, 2003; Venkatesh and Davis, 2000; Venkatesh and Zhang, 2014). By including new components into the model, TAM has undergone a lot of enhancements and modifications. Because to TAM's ease of use, adaptability, and soundness, it has emerged as one of the most popular models for analyzing the adoption of new technologies (King et al., 2006).

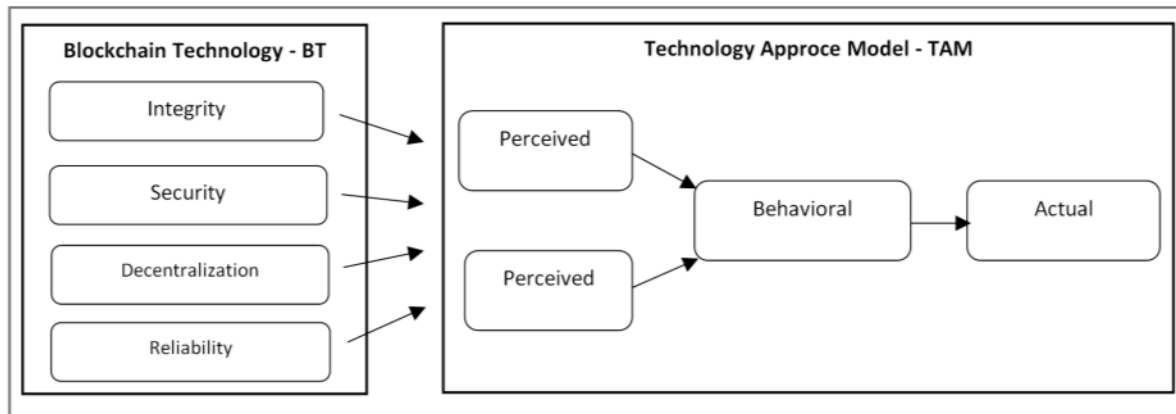Figure 1 graphically represents the relationships among the BT and the TAM

*Figure 1 – Relationship between features' blockchain and TAM*
*Source: Authors' elaboration*

## DATA AND METHODOLOGY

SMEs operating in the accounting industry were considered. The choice of this specific sample was due to the fact that these are businesses that easily adapt to the dynamic and changing environment that characterizes this disruptive technology (Clauss et al., 2019; De Cock et al., 2021). Moreover, the accounting sector represents a sphere that is still under-researched in terms of the use of BT and its impact on business performance. Through the use of PLS-SEM, modeling with partial least squares for structural equations (Hair et al., 2022; Hair et al., 2018; Lohmoller, 1989; Wold, 1982), the research focused on going to assess the relevance of the four main characteristics on TAM; this is from the perspective of acceptance of disruptive technology (blockchain technology-BT) in the company.

## EXPECTED FINDINGS, IMPLICATIONS AND CONTRIBUTIONS

As blockchain technology develops, it will be necessary to comprehend its motivators and constraints. The study of blockchain technology is in its early stages in terms of theoretical basis, methodological variety, and empirically validated work, according to Frizzo-Barker et al. (2020). In the research, the intention is to show with what relevance BT characteristics can impact the acceptance or non-acceptance of the new technology in SMEs operating in the accounting sector. In the future, it could be interesting to include the model by going to think, in addition to integrity, security, decentralization, and reliability, other variables that may impact blockchain acceptance. These variables may be internal (e.g., knowledge management, corporate culture, business model, etc.) or external (e.g., degree of deployment, regulations, ease of adoption, industry trends, etc.).

*Keywords: accounting, Blockchain Technology, decentralization, digital transformation, innovation management, integrity, performance, PLS-SEM, reliability, security, SMEs, Technology Acceptance Model.*

# REFERENCES

Azzi, R., Chamoun, R.K. and Sokhn, M. (2019) 'The power of a blockchain-based supply chain', Computers & Industrial Engineering, 135, pp. 582–592.

Bag, S. et al. (2022) 'Understanding and predicting the determinants of blockchain technology adoption and SMEs' performance', International Journal of Logistics Management.

Chen, Y.-H., Chen, S.-H. and Lin, I.-C. (2018) 'Blockchain based smart contract for bidding system', in 2018 IEEE International Conference on Applied System Invention (ICASI). 2018 IEEE International Conference on Applied System Innovation (ICASI), Chiba: IEEE, pp. 208–211.

Hughes, A. et al. (2019) 'Beyond Bitcoin: What blockchain and distributed ledger technologies mean for firms', Business Horizons, 62(3), pp. 273–281.

Kamble, S., Gunasekaran, A. and Arha, H. (2019) 'Understanding the Blockchain technology adoption in supply chains-Indian context', International Journal of Production Research, 57(7), pp. 2009–2033.

King, W.R. and He, J. (2006) 'A meta-analysis of the technology acceptance model', Information & Management, 43(6), pp. 740–755.

Li, Q.-L., Ma, J.-Y. and Chang, Y.-X. (2018) 'Blockchain Queue Theory', in X. Chen et al. (eds) Computational Data and Social Networks. Cham: Springer International Publishing (Lecture Notes in Computer Science), pp. 25–40.

Nakamoto, Y. et al. (2018) 'A Simulation Environment of Embedded Control Systems for Multi-Core Processors (WiP Report)', in 2018 IEEE International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData). 2018 IEEE International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData), Halifax, NS, Canada: IEEE, pp. 178–182.

Sharma, V. and Halevi, T. (2023) 'A Survey on Research Directions in Blockchain Applications Usability', Lecture Notes in Networks and Systems, 448, pp. 727–738.

Teece, D.J., Pisano, G. and Shuen, A. (1997) 'Dynamic capabilities and strategic management', Strategic Management Journal, 18(7), pp. 509–533.

Venkatesh, V. and Bala, H. (2008) 'Technology Acceptance Model 3 and a Research Agenda on Interventions', Decision Sciences, 39(2), pp. 273–315.

Wang, S., Zhang, D. and Zhang, Y. (2019) 'Blockchain-Based Personal Health Records Sharing Scheme With Data Integrity Verifiable', IEEE Access, 7, pp. 102887–102901.

# ANALYZING RESILIENCE AND BUSINESS MODEL PARAMETERS OF PORT AUTHORITIES: A STUDY OF FUNCTIONS AND ACTIVITIES

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## ABSTRACT

*Purpose.* This study's objective is to examine the roles and pursuits of port authorities with a particular emphasis on their adaptability and key elements of their business model. This study aims to provide a thorough understanding of the business models used by port authorities by looking at seven categories of business model parameters, including infrastructure management, financial revenue from real estate management, regulatory functions and activities, financial revenue from regulatory activities, concession policies on operator functional level, community management, and social-economic dimensions. The research also looks into how these business models could change, especially in light of the functional geo-dimensions of local, regional, and global settings. The investigation intends to offer insight into the entrepreneurial business model's evolutionary character in port authorities, which entails expanding their operations from the national level to the functional level of the global supply chain.

According to the findings (Shaw et al. 2019; Vanlaer et al. 2022, Akpinar, Ozer Caylan  2023, Liu, Lyu, 2023 )the improvement of the overall resilience of the whole port organization and ecosystem is highly related to the creation of commercial models by port authorities. This demonstrates how the resilience of port organizations, their business models, and the larger organizational ecosystem are interrelated.

*Design.* As per the recommendations (Ibrahimi, 2017), the expert structure for this research comprised the following participants: 4 experts from public organizations such as the ministry and municipality, along with the board of the port authority; 4 experts from non-governmental organizations, social organizations, or community organizations; 12 experts from private companies offering port and hinterland services; 4 experts from companies providing services to private companies in the port and hinterland; and 3 scientists working in the maritime industry and business research field. Given that the research focused on the Eastern coast of the Baltic Sea, experts from Latvia, Estonia, and Lithuania were specifically invited, resulting in a total of 81 experts across the three countries. All participating experts were required to strictly adhere to professional requirements relevant to their respective thematic groups. The research was conducted in the first quarter of 2020, and experts received detailed instructions during meetings or video conference calls. They answered a structured questionnaire designed in accordance with the requirements and sub-criteria classifications of the Analytic Hierarchy Process (AHP) methodology.

*Findings.* The analysis of the expert survey and significance indicators reveals several key findings. The most significant criteria for shaping and enhancing the resilience of the port organizational ecosystem are the activities related to providing income from property exploitation (T2; ν=0,292) and the maintenance and development of infrastructure (T1; ν=0,252). These criteria are closely aligned with critical infrastructure and organizational managerial capacities in the theoretical model of port organizations' resilience. The importance of critical infrastructure development is underscored by the significance of ensuring infrastructure continuity (T1.2; ν=0,313).

Differences in opinions between experts from public and private port organizations are minimal, highlighting the shared recognition of critical infrastructure's importance for enhancing resilience. Financial revenue from real estate (T2; ν=0,292) and regulatory functions (T4, ν=0,132) are notably significant, with some variations in opinions between public and private stakeholders. Private companies emphasize mixed tariff and commercial-based revenue streams, as well as direct investments in terminals and ports.

In the area of regulation and administration functions (T3; ν=0,123), the most significant functions involve applying rules set by governance authorities, coupled with expertized and commercialized consulting activities. These findings highlight the entrepreneurial business model's significance in the regulation and administration field, demonstrating the demand for consulting services to enhance business excellence and cooperation within the port community.

Concession policies and rules (T5; ν=0,012) indicate the importance of dynamic implementation and the ability to invest in companies providing port services. Port authorities are encouraged to engage in entrepreneurial activities indirectly by investing in shares of such companies. These findings, combined with the significance of financial and commercial processes, emphasize the role of organizational managerial capacities in enhancing resilience.

The management functions related to community (T6; ν=0,049) and socio-economic impact (T7; ν=0,035) are categorized under the facilitator and entrepreneur models. These functions, particularly problem-solving in hinterland systems' throughput (T6.1; ν=0,892) and considering the port's impact on the socio-economic environment (T7.2; ν=0,914), are crucial entrepreneurial activities of port authorities.

*Conclusions.* This study highlights that entrepreneurs have more confidence in the commercial activities of port authorities, as these activities generate increased revenues. These revenues allow for greater investments in port infrastructure maintenance and development, leading to enhanced resilience within the port organizational ecosystem. To address differing opinions between private and public stakeholders, flexible leadership and the adoption of entrepreneurial business model principles are recommended. This fosters collaboration, enabling port authorities to adapt, capitalize

on opportunities, and effectively manage critical infrastructure. By integrating commercial activities, flexible leadership, and an entrepreneurial mindset, port authorities can bridge the gap between private and public interests, drive sustainable growth, and enhance resilience. Fulfilling fundamental operational functions aligned with critical infrastructure and organizational managerial capacities is crucial for shaping and enhancing the resilience of the port organizational ecosystem. This includes effective implementation of infrastructure management, maintenance, and development functions, along with generating increased financial income through an entrepreneurial model. Creating value for port stakeholders, addressing connectivity challenges, and fostering positive social and economic impact contribute to sufficiency conditions for resilience. Transitioning to an entrepreneurial business model promotes flexible and sustainable infrastructural development, ultimately increasing resilience throughout the port ecosystem.

*Keywords: resilience, organization, leadership, entrepreneurial business model, uncertainties, sustainable grow.*

## REFERENCES

Ibrahimi, K. (2017) "A theoretical framework for conceptualizing seaports as institutional and operational clusters," Transportation Research Procedia, 25, pp. 261–278.

Akpinar, H., Ozer Caylan, D. (2023) "Modeling organizational resilience in maritime business: an ISM and MICMAC approach," Business process management journal, 29(3), pp. 597–629.

Vanlaer, N., Albers, S., Guiette, A., van den Oord, S., Marynissen, H. (2022) "100% Operational! An organizational resilience perspective on ports as critical infrastructures," Case studies on transport policy, 10(1), pp. 57–65.

Shaw, D., Achuthan, K., Sharma, A., Grainger, A.. (2019) "Resilience orchestration and resilience facilitation: How government can orchestrate the whole UK ports market with limited resources – the case of UK ports resilience," Government information quarterly, 36(2), pp. 252–263.

Liu, J., Qi, Y.,Lyu, W. (2023) "Port resilience in the post-COVID-19 era," Ocean & coastal management, 238, p. 106565.