



**16th Annual Conference of the
EuroMed Academy of Business**

Business Transformation in Uncertain Global Environments

Edited by: Demetris Vrontis,
Yaakov Weber,
Evangelos Tsoukatos

Published by: EuroMed Press

TABLE OF PAPERS

GREEN BONDS AND BANKS: EVIDENCE FROM THE PRIMARY MARKET	26
<i>Abis, Danilo</i>	26
APPLICATIONS OF TPB AND TAM THEORETICAL BACKGROUNDS FOR ONLINE PURCHASING RESEARCH DURING COVID-19 PANDEMIC.....	36
<i>Adomaviciute – Sakalauske, Karina; Urbonavicius, Sigita; Kirse, Sigita; Zimaitis, Ignas</i>	36
DIGITALIZATION AS DRIVER TO ACHIEVE CIRCULARITY IN THE AGROINDUSTRY: A SWOT- ANP-ADAM APPROACH	48
<i>Agnusdei, Leonardo¹; Krstic, Mladen^{2,3}; Miglietta, Pier Paolo³; Agnusdei, Giulio Paolo^{3,4}</i>	48
E-MOBILITY AND BRAND PERCEIVED QUALITY.....	62
<i>Augurio, Alessandro¹; Rivetti, Francesca²; Castaldi, Laura¹</i>	62
THE BRIGHT SIDE OF SMART WORK: HOW THE NEW GENERATION OF WOMEN SEES REMOTE WORK.....	71
<i>Lara Bertola</i>	71
BRAND COOLNESS: A QUALITATIVE APPROACH TO CULTURAL DIVERSITY.....	84
<i>Cabral Gama, Bernard¹; Meneses, Raquel²; Teles Roxo, Mafalda²</i>	84
CONSIDERATIONS ON CORPORATE CRIMINAL LIABILITY IN SOME EUROPEAN COUNTRIES- FRANCE, GERMANY, SPAIN AND BELGIUM	96
<i>Cărcăle, Victor-Andrei</i>	96
CRITICAL SUCCESS FACTORS OF THE MERGERS AND ACQUISITIONS PERFORMANCE: INTERRELATIONSHIP OF PLANNING STAGE (PRE-MERGER) AND INTEGRATION PROCESS (POST-MERGER)	109
<i>Chew, Grace</i>	109
NOT ALL JOB RESOURCES ARE EQUAL: THE MODERATED MEDIATION OF WORK AUTONOMY AND SUPERVISOR SUPPORT.....	123
<i>Chia, Sherwin Ignatius</i>	123
MONITORING LEVELS OF ADHERENCE TO RECOMMENDATIONS ON INNOVATIVE MEDICINES: A METHODOLOGY PROPOSAL	135
<i>Coppola, Marina¹; Mioni, Chiara¹; Giovanna, Scroccaro²; Bortolami, Alberto²; Russo, Salvatore³; Simoni, Stefania⁴</i> ..	135

EXPLORING FINANCIAL AND NON-FINANCIAL REPORTS IN IDENTIFYING EARNINGS MANAGEMENT AND SUSTAINABILITY MANAGEMENT - A RESEARCH NOTE FROM ITALIAN LISTED COMPANIES	146
<i>Esposito, Paolo; Witkowska, Ewa Anna</i>	146
CHANGES IN THE PERCEPTION OF ETHICS IN INTERNATIONAL BUSINESS AMONG SLOVAK STUDENTS	164
<i>Ferencikova, Sonia; Páldiová, Henrieta; Grachová, Dagmar;</i>	164
SUCCESSION OF DAUGHTERS IN FAMILY BUSINESS.....	176
<i>Ferreira, Sara¹; Meneses, Raquel²</i>	176
A BIBLIOMETRIC ANALYSIS OF EMERGING TECHNOLOGIES IN MANAGEMENT STUDIES..	189
<i>Fiorini, Niccolò; Natale, Valerio; Pucci, Tommaso; Casprini, Elena; Zanni, Lorenzo</i>	189
PERFORMANCE MANAGEMENT AND UNIVERSITIES: A BIBLIOMETRIC LITERATURE REVIEW	198
<i>Giacosa, Elisa; Chiapello, Andrea; Criniti, Francesco; Giordino, Daniele</i>	198
BLOCKCHAIN FOR DISRUPTIVE ECO-INNOVATIONS: A CONCEPTUAL FRAMEWORK FOR ALTERNATIVE FORMS OF WASTE MANAGEMENT	213
<i>Gibellato, Simone¹; Esposito, MariaLuisa²; Del Giudice, Manlio²; Scuotto, Veronica³</i>	213
INTELLECTUAL CAPITAL AS A LENS FOR IMPROVED HEALTHCARE PERFORMANCE: A STRUCTURED REVIEW OF THE LITERATURE.....	228
<i>Hajdini, Johana¹; Iaia, Lea²; Pironti, Marco²; Cavallo, Federica³</i>	228
A BIBLIOMETRIC-BASED ANALYSIS OF BOARD OF DIRECTORS AND INNOVATION	242
<i>Honey, Damian</i>	242
THE RELATIONSHIP BETWEEN PUBLIC AND PRIVATE FUNDING SOURCES FOR TERTIARY EDUCATION IN SELECTED OECD COUNTRIES	257
<i>Hronová, Stanislava¹; Marek Luboš²; Hindls, Richard²</i>	257
AREA OF RESIDENCE AND INCOME INTRAGENERATIONAL COHORT DIFFERENCES OF GENERATION Z IN INTENTION TO TRY EDIBLE INSECTS	271
<i>Kamenidou, Irene (Eirini)¹; Gkitsas, Stergios²; Mamalis, Spyridon¹; Mylona, Ifigeneia¹; Pavlidis, Stavros¹; Stavrianea, Aikaterini³</i>	271
TRADITIONAL AND CONTEMPORARY COSTING SYSTEMS IN HEALTHCARE SYSTEMS- A LITERATURE REVIEW	284

<i>Karagiorgos, Alkiviadis¹; Pantelidis, Panagiotis¹; Karagiorgou, Dimitra²; Mpelesis, Nikolaos³; Vaksevanidou, Marianthi²</i>	284
EUROPEAN PROGRAMS AND FOREST BIO-ECONOMY: REVIEW AND RESEARCH GAP IDENTIFICATION.....	308
<i>Karagouni, Glykeria; Veneti, Angeliki</i>	308
ECONOMIC RETURNS TO HIGHER EDUCATION FOR INDIVIDUALS AND COUNTRIES: EVIDENCE FROM LITHUANIA.....	325
<i>Kasnauskiene, Gindrute; Badaras, Rokas; Pauliene, Rasa</i>	325
BUYING DIRECTLY FROM FARMERS: SUSTAINABLE BEHAVIORS AND CONSUMPTION VALUES	338
<i>Kol, Ofrit¹; Zimand-Sheiner, Dorit¹; Levy, Shalom²</i>	338
SYSTEMATIC LITERATURE REVIEW OF FOREST MAPPING TECHNOLOGIES: TRENDS AND FUTURE DIRECTIONS.....	350
<i>Kordi, Ghazale; Salo, Jari</i>	350
THE CURRENT STATE OF CENTRAL BANK DIGITAL CURRENCIES: A BIBLIOMETRIC ANALYSIS	362
<i>Kvedaravičiūtė, Evelina; Šapkauskienė, Alfreda</i>	362
FEMALE ENTREPRENEURSHIP - AFTER CORONA: NEW CONCEPTS TO SUPPORT WOMEN IN THEIR START UP CAREERS.....	374
<i>Ladwig, Désirée H.; Wohler, Marleen J.</i>	374
COMPARATIVE ANALYSIS OF THE INDICATORS OF THE SUSTAINABLE DEVELOPMENT GOAL 9 FOR GEORGIA, ESTONIA AND SLOVENIA	383
<i>Lekashvili, Eka¹; Oboladze, David²</i>	383
GREEN ENVIRONMENTAL POLICY TRANSITION FOR GREEN DEVELOPMENT IN GREECE. UNDERSTANDING CITIZENS PERCEPTIONS	393
<i>Liaskopoulou, Aikaterini¹; Papadopoulos, Ioannis¹; Apostolidis-Afentoulis, Vasileios²;</i>	393
MISSION AND VISION IN UNIVERSITY STRATEGIES: SMALL EUROPEAN COUNTRIES.....	408
<i>Listra, Enn</i>	408
GENDER, CULTURE AND PREFERRED EXPLICIT LEADER BEHAVIOR	419
<i>Littrell, Romie Frederick¹; Ljubica, Jasenko²; Warner-Söderholm, Gillian³; Minelgaite, Inga⁴</i>	419

ARE WINE TERROIR CHARACTERISTICS IMPORTANT? GENERATIONAL COHORT DIFFERENCES	432
<i>Mamalis, Spyridon¹; Kamenidou, Irene (Eirini)¹; Karampatea Aikaterini², Bouloumpasi Elisavet², Skendi Adriana².....</i>	432
SMALL-SCALE FISHERIES & HUMAN RIGHTS	444
<i>Maniatis, Antonios</i>	444
BBNJ: BYZANTINISM BEYOND NATIONAL JURISDICTION.....	451
<i>Maniatis, Antonios</i>	451
LITTORALIZATION & BUSINESS	461
<i>Maniatis, Antonios¹;Papadimitriou, Kimon².....</i>	461
SUPPLY CHAIN RECONFIGURATION IN INNOVATIVE ERA: ANALYSIS OF SUPPLIER'S SIDE RELATIONSHIPS	470
<i>Marcone, Maria Rosaria.....</i>	470
DRIVERS OF EMPLOYEE SATISFACTION AND EMPLOYEE LOYALTY IN A HUMAN RESOURCES COMPANY	481
<i>Marcos, Anabela¹; Medina, Patricia²</i>	481
GREEN MRKETING AND SMES PERFORMANCE: A META-ANALYSIS.....	496
<i>Matarazzo, Michela¹; Oduro, Stephen²; Marsigalia, Bruno¹</i>	496
MARKET ENTRY FORM CHOICES OF MULTI-SIDED PLATFORMS IN THE EVENT MANAGEMENT AND TICKETING INDUSTRY.....	504
<i>Mendez Cordero, Gilberto Carlos¹; Neubert, Michael².....</i>	504
AUDIT REPORT LAG AND FEMALE AUDITORS: EVIDENCE FROM GREECE	519
<i>Mitskinis, Dimitrios¹; Lois, Petros²; Drogalas, George¹; Antonakis, Nikolaos¹</i>	519
CORPORATE INTEGRATION PROCESSES: LESSONS FROM THE COVID-19 CRISIS.....	534
<i>Montenero, Vincent ¹; Cazorzi, Cristina².....</i>	534
THE CIRCULAR ECONOMY IN THE SMART CITY CONTEXT. THE CASE OF THE BENEVENTO'S MUNICIPALITY.	550
<i>Mozzillo, Mirko; Serluca, Maria Carmela.....</i>	550
DEVELOPMENT OF AN INNOVATIVE E-LEARNING VOCATIONAL MODEL UTILIZING DIGITAL CULTURAL HERITAGE.....	562
<i>Orphanidou, Yianna ¹; Efthymiou, Leonidas¹; Dekoulou, Paraskevi²</i>	562

ORGANIZATIONAL CULTURE IMPACT ON EMPLOYEE MOTIVATION AND PROFESSIONAL BURNOUT: CASE OF LITHUANIAN MEDICAL INSTITUTIONS.....	576
<i>Paulienė Rasa; Raudonė Odeta; Kasnauskiene Gindrute; Liubauskienė Vaida</i>	576
MEASURING MATURITY OF CORPORATE SUSTAINABILITY: HOW TO EVALUATE SUSTAINABILITY TRANSITION PATHWAY	589
<i>Ramanauskaitė, Joana; Staniškienė, Eglė; Stankevičiūtė, Živilė</i>	589
PROFESSIONALIZATION DEGREE AND REVENUE MANAGEMENT CAPABILITY FOR AIRBNB HOSTS	605
<i>Sainaghi, Ruggero</i>	605
LOVE AND LIES ON ONLINE DATING PLATFORMS COMPARED TO ONLINE TEACHING PLATFORMS - TRUST PROPENSITY	617
<i>Schinzel, Ursula</i>	617
CREATIVE ACCOUNTING IN MICRO, SMALL AND MEDIUM ENTERPRISES IN PORTUGAL ..	631
<i>Silva, Rui; Góis, Cristina</i>	631
STUDY OF THE KEY PERFORMANCE INDICATORS (KPIs) IMPLEMENTATION IN SUPPLY CHAIN MANAGEMENT	642
<i>Sinoimeri, Dea; Teta, Jonida</i>	642
MEASURING ENTREPRENEURSHIP INTENTIONS: THEORETICAL-METHODOLOGICAL ASPECTS	652
<i>Snieskienė Petronytė, Aurelija; Ulbinaitė, Aurelija</i>	652
THE RELATIONSHIP BETWEEN THE ORGANIZATION'S EMOTIONAL CLIMATE, LIFECYCLE AND LEADERSHIP STYLE.....	669
<i>Stravinskaitė, Živilė¹; Vaiginiene, Erika¹; Balbieriūtė, Vaida²</i>	669
HOW TO SURVIVE A PANDEMIC. THE OUTLOOK OF ITALIAN RESTAURANT FIRMS.	683
<i>Susco, Alberto; Canavesio, Davide; Cugno, Monica</i>	683
ETHICAL CONSUMER BEHAVIOR: A BIBLIOMETRIC REVIEW PRE-COVID19	703
<i>Tani, Mario¹; Troise, Ciro²; Basile, Gianpaolo³; Mazzitelli, Andrea³</i>	703
EMPLOYEE MOTIVATION AND JOB PERFORMANCE OF EMPLOYEES IN THE GREEK HOSPITALITY INDUSTRY	715

<i>Tartani, Marina-Rafailia¹; Tzavara, Dionisia²; Argyropoulou, Maria³; Koufopoulos, Dimitrios⁴; Argyropoulou, Rachel⁵;</i>	715
DRIVERS AND IMPACTS OF POKEMON GO'S CONTINUANCE INTENTION: AN EXTENDED EXPECTATION-CONFIRMATION MODEL	730
<i>Thongmak, Mathupayas</i>	730
EXPLORING THE ROLE OF INNOVATION CLUSTERS TOWARDS THE DEVELOPMENT OF FOREST BIO-ECONOMY IN GREECE.....	742
<i>Trigkas, Marios¹; Kourtidis, Ioannis²</i>	742
BRIDGING GAMIFICATION AND ONLINE CUSTOMER LOYALTY: QUALITATIVE EVIDENCE FROM E-TAILERS	755
<i>Vilkaite-Vaitone, Neringa; Kirse, Sigita; Adomaviciute, Karina; Dikcius, Vytautas; Zimaitis, Ignas</i>	755
IMPLEMENTATION OF CORPORATE SOCIAL RESPONSIBILITY (CSR) IN FASHION SMALL AND MEDIUM-SIZED ENTERPRISES IN KOSOVO: MANAGERS' PERSPECTIVE	766
<i>Xharavina, Natyra¹; Kapoulas, Alexandros²; Oates, J Caroline³</i>	766
WHEN THE PROTEUS EFFECT STIMULATES 3D MMORPG PLAYERS TO BUY... ..	780
<i>Yildiz, Hélène; Reiter, Alan; Mouline, Jean-Pierre</i>	780
THE IMPACT OF CHANGES IN LEADERSHIP STYLES ON QUALITY CULTURE IN YOUTH NGOS: THE CASE OF LITHUANIA.....	794
<i>Zalepūgaitė, Dovilė; Serafinas, Dalius; Melys, Klaudijus</i>	794
TO AI OR NOT TO AI? GENERAL PUBLIC ATTITUDES TOWARDS THE USE OF ARTIFICIAL INTELLIGENCE: CASE OF ZADAR COUNTY	810
<i>Zekanović-Korona, Ljiljana; Grzunov, Jurica; Grzunov, Matea</i>	810
EMPLOYMENT AFTER RETIREMENT: FACTORS AFFECTING WORKING AT OLD DAYS IN LITHUANIA	825
<i>Zitikyte, Kristina; Kasnauskiene, Gindrute</i>	825

TABLE OF ABSTRACTS

TESTING MEANINGFUL CORRELATION AMONG ECONOMIC INDICATORS IN THE CASE OF LEBANON'S FINANCIAL CRISIS.....	841
<i>Abou Ltaif, Samar; Mihai-Yiannaki, Simona.....</i>	<i>841</i>
KNOWLEDGE MANAGEMENT STRATEGIES OF EMERGING MARKET FIRMS: AN UPPER ECHELON PERSPECTIVE	845
<i>Agnihotri, Arpita¹; Bhattacharya, Saurabh².....</i>	<i>845</i>
THE IMPACT OF MANAGERIAL PERCEPTIONS ON IMPLEMENTING ENVIRONMENTAL STRATEGIES IN B2B	847
<i>Al-kwifi, Osama; Abu Farha, Allam</i>	<i>847</i>
MEASURING THE SOCIOECONOMIC IMPACT OF USING ROBOTIC SYSTEMS IN RECYCLING: THE CASE OF GREECE AND CYPRUS.....	849
<i>Antonaras, Alexandros¹; Konstantinidou, Evi²; Memtsa, Chrysi³; Maniadakis, Michalis⁴.....</i>	<i>849</i>
TRANSFERABILITY IN 'PHYGITAL' ASSETS: THE IMPACT OF NFT UTILITIES AND PERKS ON SOCIAL IDENTITY.....	853
<i>Apostolidis, Chrysostomos¹; Alomar, Nora¹; Sagfossen, Sofie²</i>	<i>853</i>
CRAFTING INTERNATIONAL BUSINESS STRATEGY: THE ROLE OF PERSONALITY	857
<i>Asseraf, Yoel¹; Finnegan, Carol²</i>	<i>857</i>
ONLINE SENSORY MARKETING: TRANSFORMING NGOS' MARKETING PRACTICES FOR A SUSTAINABLE FUTURE IN A TIME OF GLOBAL CRISES.....	861
<i>Avgeropoulou Aikaterini; Yioula Melanthiou.....</i>	<i>861</i>
THE IMPACT OF PERCEIVED RISK ON CONSUMERS' PURCHASE INTENTION OF LUXURY FASHION PRODUCTS MADE WITH PLANT-BASED LEATHER ALTERNATIVES.....	867
<i>Badiei Khorsand, Darya; Vignali, Gianpaolo; Ryding, Daniella.....</i>	<i>867</i>
DIGITAL INNOVATION LEADING FACTORS IN MIGRANTS FEMALE ENTREPRENEURS SUCCESS- BAVARIA CASE STUDY	869
<i>Bakirli, Sofia; Mihai-Yiannaki, Simona.....</i>	<i>869</i>
PUBLIC OWNERSHIP AND PRODUCTIVITY OF LOCAL TRANSPORT COMPANIES. DOES ESG MATTER?.....	874
<i>Barbieri, Roberta¹; Natale, Francesco¹; Agnusdei, Giulio Paolo^{2,3}; Miglietta, Pier Paolo²</i>	<i>874</i>

IMPACT OF ARTIFICIAL INTELLIGENCE ON BRANDING STRATEGIES FOR LUXURY FASHION: A STUDY OF CONSUMER PERCEPTIONS AND BEHAVIORS	877
<i>Behrooz, Sanaz; Kaufmann, Hans Rüdiger</i>	877
CONCEPTUAL RESEARCH FRAMEWORK CONCERNING INDUSTRY 4.0 TECHNOLOGIES' SUITABILITY FOR ADOPTION IN MARKETING FUNCTIONS WITHIN SMES.....	880
<i>Blažinauskytė, Evelina; Dikčius, Vytautas</i>	880
DISCIPLINARY EFFECT AND GREENWASHING: EVIDENCES FROM EMERGING MARKETS ..	884
<i>Bo, Shaocong; Battisti, Enrico; Nirino, Niccolò; Salvi, Antonio</i>	884
ACTIVE AND PASSIVE BRAND HATE: DIFFERENT IMPACT ON CONSUMER-BASED BRAND EQUITY	887
<i>Brandão, Amélia¹; Popoli, Paolo²</i>	887
THE IMPACT OF BRAND EXTENSION TO GENERATION X OR GENERATION Z ON THE INTENTION TO REPURCHASE THE PARENT BRAND	890
<i>Breitereyte, Erika; Casas, Ramunas</i>	890
REPUTATIONAL RISK: A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA	893
<i>Broccardo, Laura; Culasso, Francesca; Ballezio, Elisa; Crocco, Edoardo</i>	893
THE IMPACTS OF HIGHER EDUCATION INSTITUTIONS ON SUSTAINABLE SOFTWARE DEVELOPMENT.....	896
<i>Chkoniya, Valentina¹; Martins Batista, Maria Manuela²; Cruz Gonçalves, Fernando¹</i>	896
BREAKING THE GENDER IMBALANCE IN CORPORATE EXPATRIATION: ENHANCING EXPATRIATE WILLINGNESS AMONG FEMALE EMPLOYEES THROUGH THE ROLE OF SUPERVISORS.....	898
<i>Chun-Hsiao, Wang</i>	898
TOWARDS A COMPUTATIONAL CORPORATE GOVERNANCE MODEL?	900
<i>Cicu, Giuseppe Claudio</i>	900
NEW FRONTIERS OF VALUE CREATION IN MARKETING: AN INVESTIGATION OF THE ANTECEDENTS.....	903
<i>Civera, Chiara; Casalegno, Cecilia; Bagnato, Giovanna; Candelo, Elena</i>	903
PUBLIC PROPERTY MANAGEMENT: MEASURING ITS EFFICIENCY.....	906
<i>Cohen, Viktorija¹; Krivoš, Evelina¹; Burinskas, Arūnas¹; Raslanas Saulius²</i>	906

IT AIN'T EASY (ON YOUR OWN): EXPLORING HR ANALYTICS CHALLENGES AND DIFFICULTIES THROUGH A MULTI STAKEHOLDER PERSPECTIVE	909
<i>Di Prima, Christian^{1,2}; Ferraris, Alberto¹.....</i>	<i>909</i>
THE HR ANALYTICS MANIFESTO: A SYSTEMATIC LITERATURE REVIEW TO NAVIGATE THE PAST, PRESENT AND FUTURE OF DATA-DRIVEN HR MANAGEMENT	913
<i>Di Prima, Christian</i>	<i>913</i>
GENDER QUOTAS – USEFUL OR WORTHLESS ?	915
<i>Domsch, Michel E.¹; Ladwig, Désirée H.²; Aziri, Reshad²</i>	<i>915</i>
HOW YOGA BASED PRACTICES IMPROVE RESPONSIBLE RATIONAL DECISION- MAKING? EXAMINING THE ROLE OF EQUANIMITY, EMOTIONAL AWARENESS AND AVOIDANT DECISION-MAKING STYLE	920
<i>Dutta, Soumya; Pandey, Ashish</i>	<i>920</i>
CHAID ANALYSIS TO DETERMINE PREDICTORS OF GOOD CORPORATE GOVERNANCE: THE CASE OF A 'STATE CAPTURED' COUNTRY	923
<i>Erasmus, Lourens¹; Coetzee, Philinae².....</i>	<i>923</i>
TACKLING GRAND CHALLENGES THROUGH THE NEW EUROPEAN BAUHAUS. INSIGHT FROM THE STEWARDSHIP THEORY	926
<i>Esposito, Gabriella; Forliano Canio; De Bernardi Paola.....</i>	<i>926</i>
CHAT-GPT, WHAT ARE THE ACCOUNTABILITY PROSPECTIVES?	930
<i>Esposito, Paolo¹; Tufo, Massimiliano².....</i>	<i>930</i>
A BIBLIOMETRIC ANALYSIS ON FALSE ACCOUNTING OF LISTED COMPANIES	932
<i>Esposito, Paolo¹; Tufo, Massimiliano²</i>	<i>932</i>
TO BUILD OR NOT TO BUILD? HOW PRICE INSTABILITY AFFECTS PPP IN HEALTHCARE	934
<i>Esposito, Paolo¹; Tufo, Massimiliano²</i>	<i>934</i>
THE MODERATING ROLE OF WRITTEN LANGUAGE ON PREFERENCE FOR USER INTERFACE DESIGN	936
<i>Eytam, Eleanor.....</i>	<i>936</i>
A SYSTEMIC ANALYSIS OF INNOVATION ECOSYSTEMS THROUGH CAUSAL MAPPING AND NETWORK ANALYSIS.....	938
<i>Forliano, Canio; De Bernardi, Paola; Panero, Martina; Esposito, Gabriella</i>	<i>938</i>

ECO-INNOVATION AND KNOWLEDGE MANAGEMENT SYSTEM IN THE IRANIAN SMES	942
<i>Fotouhi Ardakani, Mohammad¹; De Falco, Salvatore Esposito²; Basile, Gianpaolo³.....</i>	<i>942</i>
CEO GENDER AND FIRM RISK: EMPIRICAL EVIDENCE FROM CHINESE LISTED COMPANIES	945
<i>Fygkioris, Michail¹; Wang, Yiting²; Katsikas, Epameinondas³; Tsileponis, Nikolaos⁴; Gkliatis, Ioannis⁵; Grose, Chris⁶; Chantziaras, Antonios⁷; Athanasiadis, Konstantinos⁸; Koufopoulos, Dimitrios⁹.....</i>	<i>945</i>
ENCOURAGING VALUE-BASED HEALTHCARE VIA ACTIVITY-BASED COSTING ANALYSIS: THE ISCHEMIC STROKE PATHWAY CASE	949
<i>Gagliardi, Anna Roberta¹; Albergo, Francesco².....</i>	<i>949</i>
DO ANTI-CONSUMPTION PRACTICES LEAD TO WELL-BEING? THE MEDIATING ROLE OF TIME ORIENTATION	952
<i>García de Frutos, Nieves¹; Magrizos, Solon²; Istanbuluoglu, Doga²; Moraes, Caroline³.....</i>	<i>952</i>
GENDER ATTITUDE AND INTERSECTIONAL FACTORS IN THE CASHLESS PAYMENT BEHAVIOUR	959
<i>Graziano, Eloira Anna¹; Musella, Flaminia¹; Petroccione, Gerardo².....</i>	<i>959</i>
CROWDFUNDING, ART AND THE METAVERSE: A NEW PERSPECTIVE ON WILLINGNESS TO GIVE.....	962
<i>Gutuleac, Rada¹; Bargoni, Augusto^{1,2}; Giachino, Chiara¹.....</i>	<i>962</i>
EVOLUTION OF DIGITAL INNOVATION LABS: HOW ORGANIZATIONAL LEARNING CONTRIBUTES TO DIGITAL TRANSFORMATION	964
<i>Holotiuk, Friedrich; Moormann, Jürgen</i>	<i>964</i>
BUILDING BIG DATA ANALYTICS CAPABILITIES THROUGH EXTERNAL DATA: THE ROLE OF ABSORPTIVE CAPACITY	967
<i>Huynh, Minh-Tay.....</i>	<i>967</i>
URBAN FOOD POLICY, ACCOUNTING AND ACCOUNTABILITY FOR ITS GOVERNANCE (SYSTEMATIC LITERATURE REVIEW PROTOCOLS AND EARLY RESULTS) – AN EXTENDED ABSTRACT	972
<i>Kaur, Amandeep; D’Andreamatteo, Antonio.....</i>	<i>972</i>
CO-CREATING SUSTAINABLE BUYING BEHAVIOR AMONG GENERATION Z CONSUMERS: THE ROLE OF EARNED MEDIA.....	974
<i>Kokkinopoulou, Emmanouela¹; Papasolomou, Ioanna¹; Porcu, Lucia².....</i>	<i>974</i>

THE ROLE OF EARNED MEDIA IN CO-CREATING SUSTAINABLE PURCHASE BEHAVIOR AMONG GEN Z CONSUMERS	977
<i>Emmanouela Kokkinopoulou¹, Ioanna Papolomou¹, Dimitris Vrontis¹, Lucia Porcu²</i>	<i>977</i>
SOCIAL MEDIA AND SPONSORSHIP: A CONCEPTUAL MODEL FOR SPORT MARKETERS.....	982
<i>Koronios, Konstantinos¹; Ntasis, Lazaros²; Thrassou, Alkis³; Papaioannou, Alkistis⁴; Tsironi, Maria¹</i>	<i>982</i>
METaverse TECHNOLOGIES AS PART OF AN ADAPTATION STRATEGY TOWARDS OVERTOURISM.....	986
<i>Kouroupi, Nansy; Metaxas, Theodore</i>	<i>986</i>
INEQUALITY OF KNOWLEDGE DISTRIBUTION IN THE AGRI-FOOD SUPPLY NETWORK AS A DRIVING FACTOR IMPACTING THE ADOPTION OF DISRUPTIVE TECHNOLOGIES	989
<i>Kramer, Michael Paul¹; Hanf, Jon H.</i>	<i>989</i>
CONSUMPTION OF ECONOMIC NEWS AND ATTITUDES TOWARD MINORITIES DURING ECONOMIC CRISES	993
<i>Kushmirovich, Nonna¹; Lissitsa, Sabina²</i>	<i>993</i>
THE ROLE OF HIGHER EDUCATION INSTITUTIONS IN CRAFTING THE NEW SOCIALLY RESPONSIBLE GENERATION. CAN GENERATION Z IN GREECE UNDERSTAND SUSTAINABILITY WITHIN THE UNIVERSITY CURRICULUM AND ADOPT SUSTAINABLE PRACTICES THAT CAN LATER INCORPORATE BOTH AS CONSUMERS AND AS FUTURE MARKETERS?	995
<i>Lapouridou, Alexandra; Kapoulas, Alexandros</i>	<i>995</i>
HOW TO INVESTIGATE GREENWASHING BEHAVIOR IN CORPORATE SOCIAL RESPONSIBILITY? A SYSTEMATIC LITERATURE REVIEW.....	1000
<i>Laus, Vittorio; Enrico, Battisti</i>	<i>1000</i>
ORGANIZATIONAL FACTORS DETERMINING FUTURE PERSPECTIVES OF DISABLED EMPLOYEES.....	1004
<i>Lolat-Pazarauskiene, Ajana</i>	<i>1004</i>
EXPLORING HOW TO ENHANCE SMES PRACTICES IN THE TOURISM SECTOR IN TERMS OF SERVICE QUALITY AND SUSTAINABILITY	1007
<i>Loureiro, Sandra Maria Correia; Palma, Pedro de Melo; Langaro, Daniela</i>	<i>1007</i>
NECESSARY AND SUFFICIENT CONDITIONS FOR IMPLEMENTING HUMAN RESOURCE ANALYTICS IN ORGANIZATIONS	1014

<i>Ludviga, Iveta</i>	1014
IS YOUR BOAT IN STORM CONDITIONS? NEED FOR ORGANIZATIONAL AGILITY IN THE PUBLIC SECTOR DURING CRISIS.....	1017
<i>Ludviga, Iveta; Kalvina, Agita</i>	1017
GROWTH HACKING IMPLEMENTATION. AN OVERVIEW OF BENEFITS AND CHALLENGES	1020
<i>Macca, Luca Simone; Santoro, Gabriele; Calcio Gaudino, Igor</i>	1020
ATTENUATING HEALTH ISSUES RELATED TO THE AGING POPULATION THROUGH STRATIFIED MEDICINE WITH RESPECT TO DEP TECHNIQUE	1023
<i>Mahabadi, Sina</i>	1023
RELATIONAL CONFLICT WITHIN FAMILY FIRMS: A CASE STUDY OF AN ITALIAN SME.....	1025
<i>Malagoli, Federico</i>	1025
GENERATIVE ARTIFICIAL INTELLIGENCE AND INNOVATION MANAGEMENT: CONCEPTUAL FOUNDATIONS	1028
<i>Mariani, Marcello</i>	1028
GENERATIVE ARTIFICIAL INTELLIGENCE AND INNOVATION MANAGEMENT: CONCEPTUAL FOUNDATIONS	1031
<i>Mariani, Marcello</i>	1031
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).....	1034
<i>Mastroberardino, Piero¹; Kaufmann, Hans Rüdiger²; Calabrese, Giuseppe¹</i>	1034
CURRENT STATUS OF METAVERSE RESEARCH	1039
<i>Melanthiou, Yioula¹; Teerakapibal, Surat²</i>	1039
INTEGRATED QUALITY MANAGEMENT FOR HEALTH.....	1042
<i>Mihoreanu, Larisa¹; Stanciu, Liliana²</i>	1042
SUSTAINABILITY AS AN ATTRIBUTE OF HOTEL CHOICE.....	1046
<i>Minazzi, Roberta; Grechi, Daniele</i>	1046
DECENT WORK IN AGRICULTURE: A SYSTEMATIC LITERATURE REVIEW	1051
<i>Mirabella, Claudio; Schimmenti, Emanuele; Galati, Antonino; Borsellino, Valeria</i>	1051

IS EUROPEAN UNION CONVERGING ON ALL FRONTS? EVIDENCE FROM THE SHADOW ECONOMY IN AGRICULTURE.....	1055
<i>Morkunas, Mangirdas</i>	1055
QUALITY MANAGEMENT AND CERTIFICATION SYSTEMS FOR SUSTAINABLE MARINA MANAGEMENT.....	1058
<i>Muslu , Aziz</i>	1058
IPATTRIBUTES OF PRIVATE ACCOMODATION DETERMINING THE ASSESSMENT OF CONSUMER (DIS)SATISFACTION.....	1059
<i>Neves, Ricardo¹; Franco, Mara²; Meneses, Raquel¹</i>	1059
AMBIDEXTROUS LEADERSHIP: ENABLING PUBLIC SECTOR MANAGERS	1063
<i>Nicaise, Jean-Christophe</i>	1063
THE ROLE OF COMMUNICATION MODES IN BUSINESS-TO-BUSINESS (B2B) RELATIONSHIPS: A SYSTEMATIC LITERATURE REVIEW.....	1066
<i>Onopko, Mariya; Henk, Anastasiya; Nilssen, Frode</i>	1066
THE ROLE OF COMMUNICATION MODES IN BUSINESS-TO-BUSINESS (B2B) RELATIONSHIPS: A SYSTEMATIC LITERATURE REVIEW.....	1070
<i>Onopko, Mariya; Henk, Anastasiya; Nilssen, Frode</i>	1070
CORPORATE CLIMATE CHANGE STRATEGY: A MANAGEMENT CONTROL SYSTEM PERSPECTIVE	1072
<i>Panero, Martina; De Bernardi, Paola; Forliano, Canio</i>	1072
INTRA-ORGANISATIONAL COLLABORATION TO SUCCEED IN CIRCULAR TRANSITION: A SYSTEMATIC LITERATURE REVIEW.....	1076
<i>Perotti, Francesco Antonio^{1,2}; Ferraris, Alberto¹; Calcio Gaudino, Igor¹</i>	1076
THE FORMATION OF A NEW EXPORT NETWORK: THE CASE OF LITHUANIA	1080
<i>Petrylė, Vaiva</i>	1080
LEARNINGS FROM FOREST MAPPING RESEARCH: CAN WE ROADMAP A FUTURISTIC FOREST INDUSTRY?	1083
<i>Poovaragavalu, Adhiguru; Salo, Jari</i>	1083

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	1086
<i>Portaluri, Giorgio; Mura, Rita; Francesca, Vicentini</i>	1086
HEALTH LEAN MANAGEMENT TO IMPROVE PRIMARY CARE CENTRES AND AMBULATORY CARE: A SYSTEMATIC LITERATURE REVIEW.....	1088
<i>Pozzan, Caterina; Tiso, Anna; Ronchi, Fabrizio; Verbano, Chiara</i>	1088
THE IMPACTS OF PRICE INCREASE, PRICE INCREASE JUSTIFICATION AND EXPECTED FUTURE PRICE ON PRICE AFFECT, PRICE FAIRNESS, AND CONSUMERS' INTENTIONS	1092
<i>Radaviciene, Indre; Tafreshi, Parham Fami</i>	1092
KNOWLEDGE TRANSFER IN PERU MICRO-ENTREPRENEURS. THE EFFECTS ON PERSONAL AND BUSINESS IMPROVEMENT.....	1095
<i>Ramirez Lozano, Julianna Paola¹; Rojas Valdez, Kelly¹; Sosa Varela, Juan Carlos²</i>	1095
IMPACT OF FINANCIAL LIBERALIZATION ON MUTUAL FUNDS AND BANKING INDUSTRY: THE MODERATING ROLE OF POLITICAL STABILITY.....	1097
<i>Rao, Zia-ur-Rehman</i>	1097
ARTIFICIAL INTELLIGENCE AND KNOWLEDGE SHARING, WHICH CHALLENGES POP UP?	1100
<i>Rezaei, Mojtaba¹; Pironti, Marco¹; Oppioli, Michele²; Biancone, Paolo²</i>	1100
EVOLUTIONARY PATH OF THE BUSINESS MODEL IN PUBLIC HEALTHCARE FACILITIES: A SYSTEMATIC LITERATURE REVIEW.....	1103
<i>Rizzi, Alessandro¹; Sardi, Alberto¹; Sorano, Enrico¹; Khatova, Tatiana²</i>	1103
ATTITUDE TOWARDS FASHION INFLUENCERS, MASSTIGE BRANDS AND PURCHASE INTENTION: NEW CONCEPTUAL MODEL	1105
<i>Rodrigues¹, Paula; Sousa², Ana and Borges^{3,2}, Ana Pinto</i>	1105
CRYPTOCURRENCY TRUST AND INTENTION TO USE: CONSUMERS' PERSPECTIVE.....	1108
<i>Rodrigues¹, Paula; Sousa², Ana; and Brochado³, Ana</i>	1108
THE POWER OF CONNECTION: EXPLORING THE ROLE OF IDENTIFICATION IN THE EMOTIONAL RELATIONSHIP BETWEEN HUMANS AND ROBOTS IN THE HOSPITALITY INDUSTRY.....	1111
<i>Rodrigues, Ana Filipa¹; Loureiro, Sandra Maria Correia²; Bilro, Ricardo Godinho²</i>	1111

LEAN AND SAFETY MANAGEMENT TO IMPROVE CARE PATHWAYS, DISCHARGE AND CARE CONTINUITY: INSIGHTS FROM A CASE STUDY IN ITALY	1114
<i>Ronchi, Fabrizio¹; Tiso, Anna¹; Pozzan, Caterina¹; Baccaglioni, Kareen²; Volpato, Stefania²; Crema, Maria²; Verbano, Chiara¹.....</i>	<i>1114</i>
GEORGIAN CONSUMERS' DETERMINANTS OF PURCHASE INTENTION TOWARD ORGANIC WINES	1118
<i>Saakyan, Jemma¹; Migliore, Giuseppina²; Vella, Francesco²; Kartvelishvili, Nikoloz³; Galati, Antonino².....</i>	<i>1118</i>
BLOCKCHAIN-DRIVEN OPEN INNOVATION: HOW DO MANAGERIAL TIES AND ABSORPTIVE CAPACITY MATTER FOR INNOVATIVE PERFORMANCE? EMPIRICAL EVIDENCE FROM THE ITALIAN WINE INDUSTRY	1123
<i>Sabbagh, Parisa¹; Crescimanno, Maria¹; Schimmenti, Emanuele¹; Mariantonietta Fiore²; Galati, Antonino¹.....</i>	<i>1123</i>
DID A LITTLE FUN IN THE WORKPLACE EVER HURT ANYBODY?	1128
<i>Sabino, Ana^{1,3,4}; Cesário, Francisco^{1,2,3}; Lima, Inês¹.....</i>	<i>1128</i>
FAKING AND LYING DURING JOB INTERVIEW AND ITS RELATIONSHIP WITH ORGANIZATIONAL ATTRACTIVENESS.....	1131
<i>Sabino, Ana^{1,3,4}; Cesário, Francisco^{1,2,3}; Salgueiro, Patricia¹.....</i>	<i>1131</i>
ETHICAL INTENSITY, PERCEIVED CONSUMER VALUE AND INTENTION TO RENT CLOTHING ONLINE IN THE CIRCULAR SOCIETY	1134
<i>Šalčiuvienė, Laura; Banytė, Jūratė; Vaidelinskaitė, Šarūnė</i>	<i>1134</i>
JUSTIFICATION OF THE FOCUS OF PERFORMANCE AUDIT CONDUCTED BY THE SUPREME AUDIT INSTITUTION ON THE CREATION OF PUBLIC VALUE.....	1137
<i>Šalienė, Asta; Tamulevičienė, Daiva</i>	<i>1137</i>
MULTI-FACTOR MODELS OF ASSET RETURNS: A BIBLIOMETRIC ANALYSIS	1140
<i>Sandretto, Davide.....</i>	<i>1140</i>
A STUDY OF THE IMPACT OF MASSTIGE STRATEGIES ON BRAND COOLNESS AND BRAND HAPPINESS.....	1143
<i>Sauter, Victoria¹; Bilro, Ricardo Godinho²; Loureiro, Sandra Maria Correia².....</i>	<i>1143</i>
THE EFFECT OF COVID-19 ON ISRAEL'S TOURISM INDUSTRY: TEMPORARY OR PERMANENT?	1146
<i>Schein, Andrew</i>	<i>1146</i>
TRANSFORMATION OF ORGANIZATIONS DURING CRISES	1148

<i>Šimanskienė, Ligita; Paulikienė, Birutė</i>	1148
HTA: A MULTIDIMENSIONAL TOOL FOR HEALTH CARE MANAGERS	1152
<i>Simoni, Stefania¹; Russo, Salvatore²; Coppola, Marina³</i>	1152
INDUSTRY 5.0 IN MANUFACTURING SECTOR.....	1155
<i>Singh, Devesh¹; Cohen, Viktorija²</i>	1155
A SYSTEMATIC LITERATURE REVIEW AND RESEARCH AGENDA OF MASSTIGE AND BRAND HAPPINESS	1157
<i>Sousa, Ana²; Madeira, Clara²; Rodrigues, Paula¹</i>	1157
THE IMPACT OF TELEWORKING STRESSORS ON BURNOUT: A MODERATION OF STRESS COPING STRATEGIES	1164
<i>Stankevičienė, Asta¹; Diskienė, Danuta²; Tamaševičius, Virginijus³; Paulienė, Rasa⁴; Pakėnaitė, Gedvinė²</i>	1164
GREEN EVA AS A TOOL FOR THE DETERMINATION OF THE GREEN ECONOMIC VALUE ADDED OF THE ENVIRONMENTALLY-SUSTAINABLE PROJECTS	1167
<i>Stankevičienė, Jelena¹; Bužinskė, Julija²</i>	1167
ETHICAL IDEALISM AND EMPLOYEE ENGAGEMENT: THE ROLE OF GRIT	1171
<i>Stefanidis, Abraham¹; Dagher, Grace, K.²; Banai, Moshe³</i>	1171
ECONOMIC SHOCKS AND EFFICIENCY: THE CASES OF LITHUANIA AND LATVIA	1173
<i>Subačienė, Rasa¹; Budrionytė, Ramunė¹; Faituša, Ivita²; Žemgulinė, Jolanta¹</i>	1173
THE FEATURES AND FUNCTIONALITIES OF MOBILE APPLICATIONS (APPS) IN THE FASHION INDUSTRY AND THEIR IMPACT ON CONSUMER PURCHASE INTENTION: IMPLICATIONS FOR THE METAVERSE	1176
<i>Suhluli, Abdullah; Vignali, Gianpaolo; Ryding, Daniella; Altasan, Abdulmajeed</i>	1176
SOCIAL INNOVATION THROUGH STUDENT ENTREPRENEURSHIP	1178
<i>Taylor, David W.; Baird, Andrew; Davis, Thomas</i>	1178
UNDERSTANDING CONSUMERS OF GREEN COSMETICS ADOPTING A STIMULUS- ORGANISM-RESPONSE APPROACH	1180
<i>Testa, Riccardo; Vella, Francesco; Rizzo, Giuseppina; Schifani, Giorgio; Migliore, Giuseppina</i>	1180
WORKPLACE FLEXIBILITY PRACTICES AND ORGANIZATIONAL PERFORMANCE: ANALYZING THE ROLES OF LEADERSHIP, ICT AND TRUST	1183
<i>Tirrel, Henning¹; Kaufmann, Hans Rüdiger²; Winnen, Lothar³</i>	1183

VARIABLE MAPPING AS A NEW METHOD IN BIBLIOMETRICS.....	1186
<i>Tomczyk, Przemyslaw</i>	1186
DEVELOPING A NEW MODEL OF MEASURING INTELLECTUAL CAPITAL AND UNACCOUNTED INTANGIBLES IN AN INTEGRATED THINKING CONTEXT.	1188
<i>Tonelli, Alberto¹; Devalle, Alain², Rizzato, Fabio¹;</i>	<i>1188</i>
TERRITORIAL MARKETING AS A LOCAL DEVELOPMENT STRATEGY: TWO CASE STUDIES FROM AN ITALIAN REGION	1191
<i>Travasi, Alessio; Musso, Fabio</i>	<i>1191</i>
SUSTAINABLE SUPPLY CHAIN AND ESG SCORE: A SYSTEMATIC LITERATURE REVIEW	1194
<i>Truant, Elisa; Culasso, Francesca; Borlatto, Edoardo; Crocco, Edoardo</i>	<i>1194</i>
GLOBAL DIVERSITY MANAGEMENT AND THE ROLE OF BELIEFS IN DIGITAL AGE LEADERSHIP	1197
<i>Tzortzaki, Alexia Mary¹; Myloni, Barbara²</i>	<i>1197</i>
IMPROVING THE LENGTH OF STAY (LOS) IN HOSPITALS: THE CASE OF THE EMERGENCY DEPARTMENT	1200
<i>Vitner, Gad</i>	<i>1200</i>
EVALUATION OF DIFFERENCES IN PERFORMANCE BETWEEN SHAREHOLDER-CEO-LED AND PROFESSIONAL-CEO-LED FIRMS: EVIDENCE FROM NASDAQ BALTIC	1203
<i>Voveris, Donatas</i>	<i>1203</i>
VALUE CO-CREATING SYNERGIES IN THE FOOTBALL INDUSTRY: A THEORETICAL FRAMEWORK OF PRIMARY AND SECONDARY STAKEHOLDERS	1207
<i>Yiapanas, George¹; Thrassou, Alkis¹; Vrontis, Demetris¹; Lamprinakos, Grigorios²</i>	<i>1207</i>
BEYOND THE GAME: A TWO-DECADE SYSTEMATIC LITERATURE REVIEW OF ADVERTISING IN DIGITAL GAMES.....	1213
<i>Zagni, Luca Matteo; Baima, Gabriele</i>	<i>1213</i>
ON THE ROLE OF COMMUNICATION AND MANAGEMENT ENGAGEMENT FOR ACQUISITION SUCCESS: A STUDY OF ISRAELI STARTUPS ECOSYSTEM.....	1218
<i>Zaks, Ofer¹; Polowczyk, Jan²; Trąpczyński, Piotr²</i>	<i>1218</i>
EPISTEMOLOGY OF COMPLEXITY IN A STATE OF CRISIS. LEADERSHIP AND COORDINATION AS CATALYSTS OF NEGENTROPY	1221

<i>Zanda, Stefania; Castaldo, Francesca</i>	1221
CHANGING MANAGERIAL FOCUS BETWEEN BUSINESS AND POLITICAL EFFORTS IN INTERNATIONAL MARKETS.....	1226
<i>Zif, Jehiel</i>	1226
THE IMPACT OF FEMALE MANAGERS ON THE GENDER PAY GAP: EVIDENCE FROM COMPANY-LEVEL DATA FOR LITHUANIA	1228
<i>Zitikytė, Kristina¹; Varanauskienė, Julita²</i>	1228
BLOCKCHAIN PLATFORMS FOR DEVELOPING NEW BUSINESS OPPORTUNITIES: A TECHNOLOGY ACCEPTANCE MODEL PERSPECTIVE	1233
<i>Zoccali, Claudia; Ferraris, Alberto; Cali, Pietro</i>	1233
ANALYZING RESILIENCE AND BUSINESS MODEL PARAMETERS OF PORT AUTHORITIES: A STUDY OF FUNCTIONS AND ACTIVITIES	1237
<i>Župerkienė Erika; Valionienė Elena; Burgis Darius</i>	1237

A SYSTEMIC ANALYSIS OF INNOVATION ECOSYSTEMS THROUGH CAUSAL MAPPING AND NETWORK ANALYSIS

Forliano, Canio; De Bernardi, Paola; Panero, Martina; Esposito, Gabriella

Department of Management, University of Turin, Turin, Italy

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.

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. 0950422221115977.
- 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.