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How and when corporate social performance reduces firm risk? The moderating role of corporate governance

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Abstract

This study aims to explore the impact of corporate social performance (CSP) on firm risk, and it proposes the moderating role of corporate governance (CG) among this relationship. Although the literature on corporate social responsibility is extensive, there is still a lack of knowledge about how CSP influences firm risks, as well as the role of CG in this relationship. To fill this gap, we have empirically tested the impact of CSP on a firm's risk through a longitudinal analysis on S&P 500 firms from 2015 to 2019. Results show a significant negative relationship between CSP and firm risks, which is positively moderated by CG mechanisms. Our study contributes to the empirical research on corporate social responsibility and it provides insights for managerial decisions to encourage managers to pursue environmental and social practices that reduce the firm risk, with positive impacts on the firm value.

KEYWORDS
corporate governance, corporate social performance, corporate social responsibility, corporate social responsibility outcomes, firm risk

1 | INTRODUCTION

In recent years, studies on corporate social responsibility (CSR), and its implications for scholars and practitioners, have significantly increased (e.g., Cillo et al., 2019; Kim et al., 2018; Kraus et al., 2020). This topic is also increasingly becoming multidisciplinary, involving issues from management, finance, and strategy literature (Ali et al., 2017; Malik, 2015). Many studies have focused on the effects of CSR on financial performance (e.g., Gangi et al., 2019; Kim et al., 2018; Luo & Bhattacharya, 2006; Nirino, Ferraris, et al., 2020; Sinthupundaja et al., 2020) and shareholder's value (e.g., Kim & Kim, 2014), while others have focused on CSR's implications for a firm's business model, Corporate Governance (CG) characteristics, and strategic decisions (e.g., Ardito & Dangelico, 2018; Battisti et al., 2022; Bresciani & Oliveira, 2007; Carayannis et al., 2017; Cortese et al., 2020; Del Giudice et al., 2017; Galati et al., 2019; Naciti, 2019; Shim et al., 2021). Despite these different theoretical and methodological approaches, the bulk of these studies suggest that CSR plays an increasingly central role in corporate decisions with a view to an increasingly sustainable future.

In relation to this, risk is an expression of uncertainty about future expectations, and its management is fundamental in achieving the company's value objectives (Damodaran, 2015). Furthermore, risk is a key aspect in the present and future of managerial and financial dynamics (Goyal & Santa-Clara, 2003). In the financial literature, the firm's total risk is measured by the volatility of stock returns (Ross et al., 2016). Meanwhile, total risk is formed by idiosyncratic and systematic risk. The first is an expression of the characteristics of the company, while the second is given by exogenous aspects (Battisti et al., 2020). Some studies have tried to understand the impact of

CSR strategies on a firm's risk. For instance, by considering risk as a key element in determining the cost of a firm's capital, El Ghoul et al. (2011) highlighted that CSR has a negative effect on the total cost of capital, which increased the firm's value. A similar result was obtained by Sassen et al. (2016), who analyzed how CSR impacts various measures of a company's risk.

However, the mechanisms and reasons that influence this relationship need to be further investigated. The impacts of CSR strategies on a firm's performance and value should be assessed by analyzing the impact of Corporate Social Performance (CSP) on risk. CSP refers to outcomes of CSR strategies, which are mainly identified in two measures: social and environmental (Nirino et al., 2019; Wang & Sarkis, 2017). The social outcome considers all of the aspects concerning the reputation and relationships that companies are able to establish with their stakeholders. Meanwhile, the environmental outcome evaluates the company's dedication in safeguarding the environment for future generations. In addition, considering CSR strategies as an expression of mechanisms linked to corporate governance decisions (Jo & Harjoto, 2011), in this study we aim to investigate the interplay between CG, CSP, and risk. Therefore, we hypothesize and empirically test the moderating role of CG on the relationship between CSP and risk. In particular, to assess the impact of CSR on risk, we considered the total risk, which is given by the volatility of the firm's shares. This enables us to understand in detail how strategic choices relating to CSR and CG mechanisms impact on the firm's general risk level (Albuquerque et al., 2019; Ross et al., 2016). Hence, based on financial and CG literature, we aim to answer the following research questions: What are the effects of CSR outcomes on firm risk? How does CG affect the relationship between CSP and firm risk?

To achieve the research objectives, we collected data on S&P 500 firms from 2015 to 2019. To analyze the data, in line with Sassen et al. (2016), we run a panel data fixed effect model. In addition, to avoid bias in the regression coefficients, we checked for endogeneity issues though a simultaneous equation system (Jo & Na, 2012). The results confirm that the CSP is able to reduce the firm's total risk. Moreover, CG positively moderates this relationship, thus further reducing firm's general risk level. These results lead to the following theoretical and managerial contributions.

First, we contribute to stakeholder theory and CSR literature (Freeman, 1994). Based on stakeholder theory, CSR strategy and its outcomes may mitigate risk due to the attitude to respond to CSR needs and expectations of stakeholders, which lead to better support for the company and increases stakeholders' loyalty (Martínez & Rodríguez del Bosque, 2013). The ability to create loyalty among stakeholders decreases risk, particularly in times of difficulty for the company, while avoiding over-reactions by shareholders (Helm, 2013). The ability of the CSR to mitigate the negative effects of over-reactions in the case of bad news involving the company is also able to reduce the volatility of the shares when the company is listed (Nirino et al., 2021). Second, we contribute to CG literature by suggesting the key role that has in the implementation of CSR strategies to reduce the firm's risk. In fact, CG mechanisms may be able to align the interests of managers and all stakeholders by amplifying the positive effect of CSR outcomes resulting in higher stakeholders' loyalty and lower total risk (John et al., 2008). In fact, adequate CG mechanisms can lead managers to have a greater involvement on CSR-related issues by increasing their commitment and most likely by increasing its effects. These theoretical considerations also lead to important managerial implications. In fact, our results suggest that an adequate implementation by managers of CSR strategies, together with adequate CG mechanisms, may strongly diminish the total risk for the company. This means that in the presence of lower risk, managers may able to increase the total value of the company.

The remainder of this paper is organized as follows. The first part includes the theoretical framework and it presents our research hypotheses. The second part explains the sample and methodology that we adopted in this study, which is followed by discussions of results. The last part includes the conclusion, theoretical and managerial implications, limitations, and recommendations for future research.

2 | LITERATURE AND HYPOTHESES DEVELOPMENT

2.1 | Corporate social responsibility, corporate social performance, and firm risk

Many previous empirical studies have focused on CSR, which includes several aspects related to the environment, society and governance principles, and corporate financial performance relationship (e.g., Bhattacharya et al., 2020; Kim et al., 2018; Luo & Bhattacharya, 2006; McGuire et al., 1988; Nirino, Ferraris, et al., 2020; Surroca et al., 2010). Generally, performance is evaluated according to market measures (e.g., Tobin's *Q* or stock returns) or linked to firm's accounting standards (e.g., ROE, ROA, or ROS). Despite the differences in measurement, it is possible to underline the CSR has a general positive effect on a company's performance (Kim et al., 2018), even if there is no lack of studies showing contrasting effects (e.g., negative or not significant) (Nirino et al., 2019). Gregory et al. (2014) underlined that differences in empirical results are attributable not only to different measures of performance but also because, following the efficient markets hypotheses, investors' returns reflect only alterations in CSP. If they remain the same for some time, then CSP does not seem to influence performance in any way, which leads to a distortion of the results. When assessing the impact of CSR on financial performance, the level of analysis is fundamental to better understand the variables that can moderate or mediate this relationship. Following a holistic perspective, Aguinis and Glavas (2012) identified three levels of analysis: institutional, organizational and individual. Institutional theory suggests that firms are involved in CSR practices due to institutional pressure (Campbell, 2007). Meanwhile, an organizational level of analysis is based on the perspective that companies are aware that CSR-related strategies increase the company's competitive advantage, and therefore performance (Turker, 2009). Regarding an individual level of

analysis, how much the individuals of a company are engaged in certain issues related to CSR has been studied (Aguilera et al., 2007).

At an organizational level of analysis, CSR objectives must align with corporate finance principles, in which companies have only one objective to pursue: the shareholder's value (Damodaran, 2015). Specifically, the maximization of the share price reflects all of the information about the company's operations and reflects the long-term expectations of the company's strategic decisions (e.g., CSR strategies). The subject of risk is closely linked to the topic of share price, which can influence a firm's profitability and also stock price. In particular, the risk for the company can be defined as the uncertainty that the investor has when they hold shares (Damodaran, 2015). Companies are generally exposed by two types of risk: unsystematic and systematic (Jo & Na, 2012). As underlined by Ross et al. (2016), unsystematic risk, commonly known as specific risk, belongs to every company and can be eliminated through proper diversification. Meanwhile, systematic risk, or market risk, is given by a set of macroeconomic variables that have an impact on all companies and cannot be diversified (Damodaran, 2015). The combination of these two types of risk leads to the so-called total risk (Ross et al., 2016). Moreover, CSR may have an impact on shareholder value (Nirino, Battisti, et al., 2020) and risk (Kim & Kim, 2014). Indeed, El Ghoul et al. (2011) underlined that irresponsible companies are seen as riskier by investors. As underlined by Nirino et al. (2021), companies with lower CSP and less involvement in controversy tend to have lower financial performance, which is decreases value for the shareholders. The ability of companies to meet the requests regarding environment and society allows them to create a positive image. This is reflected in a greater loyalty on the part of all stakeholders, which potentially reduces a firm's risk (Godfrey et al., 2009). In particular, companies who are able to concretely implement CSR strategies may reduce the possibility of crises related to social and environmental aspects, keeping performance and cash flows stable, and reducing the firm's risk. Based on this discussion, we lead to following hypotheses:

Hypothesis 1a. *A firm's risk is lower when its environmental outcome is higher.*

Hypothesis 1b. *A firm's risk is lower when its social outcome is higher.*

2.2 | Moderating effect of corporate governance

Following an institutional perspective, a company's Board of Directors (BD) needs to implement sustainable practices in compliance with the requests of stakeholders and the legal constraints (e.g., not to exceed a certain level of polluting emissions) (Chan et al., 2014; Franceschelli et al., 2019). The board's decisions play a primary role in achieving CSR objectives. It is generally accepted that companies who do not follow an ethical and sustainable behavior could face damage to their image by losing reputation, with multiple consequences (e.g., decrease in revenues, loss of market share, etc.) (Li et al., 2020; Nirino et al., 2021). A firm's reputation can be seen as a unique intangible asset outcome of the company's ability to meet the interests of all of its stakeholders (King & Whetten, 2008; Rehman et al., 2020). Based on stakeholder theory, in which a firm should consider the interest of all of its stakeholders, businesses have an ethical and moral responsibility toward all stakeholders, obligations that are tacitly expected by society (Carroll, 2004). However, the implementation of CSR strategies could go against the interests of the shareholders, who aim at maximizing the share price (Brown & Forster, 2013). Therefore, managers must be able to explain the value creation processes behind these strategies and should explain that they are not just a cost for the company (Naciti, 2019). Several studies that have analyzed the different characteristics of the board, and how they can impact CSPs and therefore the benefits for shareholders (Arora & Dharwadkar, 2011; Rao & Tilt, 2016). The board's own characteristic is the natural heterogeneity of its components. A board's members usually have different ages, different school backgrounds, gender, religions, political choices, industrial experiences, and so on. From an individual and psychological perspective, each individual feature can influence in a different way on how certain strategic choices can be implemented. (Jamali et al., 2008; Rose, 2007).

Considering the maximization of share value as the main objective of a firm, good CG, may be able to achieve the objective by also meeting the interests of other stakeholders (Brickley & Zimmerman, 2010; Naciti, 2019). However, understanding how CG may be good or bad is not simple. Fuenzalida et al. (2013) underlined that: "*Good corporate governance seeks to attract capital, to ensure proper company management and administration (mainly for those that issue securities on stock exchanges), to protect investors and other interest groups' rights, to build confidence in financial markets, and to promote competitiveness*." It is fair to assume that good CG is the result of the characteristics of its members. Hence, as underlined by Chan et al. (2014), companies with good CG can be expected to implement CSR strategies better than those with bad CG. This allows them not only to meet the expectations of stakeholders but also to increase CSP, which in the long term positively impacts the firm's performance and provides value for shareholders (Cassely et al., 2020). This implies that the objectives of the company may pass from the correct management and implementation of practices related to sustainability and ethics.

If CG plays a key role in these choices, then it is logical to assume that its actions also influence the risk of the company. For instance, as underlined by Cremers and Nair (2005), CG choices are able to influence stock returns. Based on agency perspective, there is a natural gap of interests between the shareholders and the BD of the company (Shleifer & Vishny, 1997). However, good CG may, through proper mechanisms (e.g., stock options), re-align the interest between ownership and control, with a consequent decrease in risk (Shleifer & Vishny, 1986; Surroca & Tribó, 2008). Managers have personal interests to pursue, which are bound by the objectives of the company. They seek to maximize their power and reputation by implementing decisions that may increase the firm's risk. John et al. (2008) argue that the risk inclination is the result of the personal benefits that managers may obtain through the investment decisions that they make.

However, the implementation of investments linked to environmental and ethical aspects are able to raise the reputation, not only of the company but also of the management (Liao & Zhang, 2020; Xie et al., 2020). Considering CSR as a risk mitigation tool (Chakraborty et al., 2019; El Ghoul et al., 2011; Godfrey et al., 2009; Sun & Cui, 2014), it is possible to suggest that managers do not necessarily adopt riskier choices to increase their interests but instead adopt more sustainable choices that are effective in increasing the reputation of the managers themselves. This may be reflected in a lower risk for the company and for the shareholders. Based on these considerations we suggest the following hypothesis:

Hypothesis 2. *Corporate governance positively moderates the relationship between CSP and risk.*

3 | RESEARCH DESIGN

3.1 | Sample

Our study is based on US firms who reported on the S&P 500 from 2015 to 2019. It contains the 500 largest American companies in terms of capitalization traded on New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and Nasdaq. The weight of each company within the index is given by the market capitalization; thus, the greater the capitalization, the greater the weight of the single company on the index. Our final sample is based on 253 industrial and service companies with 1019 firm-year observations. The companies contained in the index have an average capitalization of $68 billion, with a maximum of $2.4 trillion and a minimum of $4 billion. The S&P 500 companies fall within the Global Industry Classification Standards (GICS), which identifies 11 sectors: energy, materials, industrials, consumer discretionary, consumer staples, health care, financials, information technology, communication services, utilities, real estate.

Companies that were excluded from the S&P500 index before 31 December 2018 were not considered in the final sample. Furthermore, we also excluded companies included in the index after 1 January 2015. This was done to make the sample homogeneous and avoid any type of distortions. All data were gathered from Thomson Reuters, which is a widely used database in studies in the fields of finance and management (Nirino, Ferraris, et al., 2020; Sassen et al., 2016). It allows not only the extrapolation of financial data but also all those indicators related to CG and CSR aspects. Many studies alternatively use KLD or Bloomberg as a database (Dorfleitner et al., 2015; Wang & Sarkis, 2017). Each of these databases calculates its own ESG ratings (which are a widely accepted measure of CSPs) in a different way, which can lead to differing results. As underlined by Surroca et al. (2010), one of major issues in evaluating CSPs is identifying an objective parameter that is capable of capturing the effects of CSR. However, all three methodologies for determining the ESG rating are accepted in the literature (Surroca et al., 2010; Wang & Sarkis, 2017).

Using a sample based on the S&P500 allows us to include the main American companies, which permit to generalize the results for different reasons. The market cap of the S&P500 is worth 99% of the American GDP (the main world economy), which makes the sample representative. Representativeness is a sufficient and necessary condition to generalize the results in empirical research (Gobo, 2004). A representative sample makes the results (while considering methodological limits) automatically generalizable to the entire population (Gobo, 2004).

3.2 | Variables

Regarding our dependent variable, we considered firm's risk as a stock volatility (Huang et al., 2011; Jo & Na, 2012; Sassen et al., 2016). We determined the volatility based on annualized standard deviation of daily stock returns (Ross et al., 2016). It is generally accepted that the stock volatility is a proper measure of firm's total risk, which is composed of idiosyncratic and systematic risk (Huang et al., 2011; Jo & Na, 2012; Sassen et al., 2016). Based on the classical portfolio theory, an investor is interested only in systematic risk and is rewarded on it since the idiosyncratic risk is eliminated by adequate diversification (Markowitz, 1952). However, Goyal and Santa-Clara (2003) stated that "stock risk is mostly driven by idiosyncratic risk," and most of average investors do not have a well-diversified portfolio. These considerations lead to having to consider the firm total risk as a benchmark in assessing the impacts of CSPs on risk.

As independent variables, we consider Environmental and Social pillar score as measure of CSP (Wang & Sarkis, 2017). To understand how and if environmental and social aspects have different impacts on the risk, we decided to separate the two components. Thomson Reuters divides its ESG score into the following three pillars: environmental, social, and governance. Generally, the environmental and social scores can be seen as outcomes of CSR strategies and they are usually considered to be valid indicators in evaluating CSPs (Nirino et al., 2019; Wang & Sarkis, 2017). In particular, the environmental indicator evaluates the company's commitment to safeguarding the environment with concrete strategies. For instance, the development of zero impact products is part of the evaluation of the environmental score. As for the social score, it evaluates the image, reputation and relationship that the company is able to establish with its stakeholders. For example, the employees' working conditions are included in the social score (Wang & Sarkis, 2017). We used the governance pillar score to evaluate the GC as a moderator, which has a value ranging from 0 to 100. A higher score indicates better CG. Moreover, it assesses how the board's decisions are in line with long-term goals, and it is able to influence the so-called environmental and social outcomes of CSR (Sassen et al., 2016) (Table 1).

We also included several control variables in our model. We control on the basis of the incentives that managers may have in achieving sustainability objectives because they can positively or negatively influence the risk and the strategic choices of the company (Wang & Yu, 2020). We also controlled for firm liquidity based on the firm's

TABLE 1 Variables

Variable	Definition	References
Risk	Stock volatility	Huang et al., 2011; Jo & Na, 2012; Sassen et al., 2016
Env	Environmental pillar score (Thomson Reuters)	Wang & Sarkis, 2017
Social	Social pillar score (Thomson Reuters)	Wang & Sarkis, 2017
Gov	Governance pillar score (Thomson Reuters)	Sassen et al., 2016
Incentive	Dummy variable, 1 = sustainable incentives 0 = no sustainable incentives	Wang & Yu, 2020
Liq	Current ratio	Nirino, Ferraris, et al., 2020; Nirino, Battisti, et al., 2020
ROA	Return on asset	Sassen et al., 2016
Size	Natural logarithm of total asset	Kim & Kim, 2014

current ratio (Nirino, Battisti, et al., 2020; Nirino, Ferraris, et al., 2020). Corporate liquidity problems entail greater risk for the company and its shareholders, leading to greater idiosyncratic risk (Damodaran, 2015). Moreover, we control for profitability based on accounting measure, in particular we used firm's return on asset (ROA) (Sassen et al., 2016). We finally include firm size effect on risk calculated as natural logarithm of total asset (Kim & Kim, 2014).

4 | EMPIRICAL RESULTS

4.1 | Descriptive statistics

Table 2 reports the descriptive statistics of our sample. Our dependent variable has an average value equal to 0.250, with 0.077 of standard deviation. Regarding independent variables, environmental outcome has a mean value equal to 55.18 with standard deviation of 24.45, while the social score has an average value of 63.10 and standard deviation of 19.52. The mediator variable, it has a mean value of 61.21 and standard deviation of 18.86.

Table 3 shows the data relating to the correlation between the variables. Independent variables and mediators are negatively correlated with the total risk. This shows that companies engaged in sustainable and social actions generally show a lower risk. In the next section, we will explore whether there is also a causal effect in addition to correlation between the variables of the model. The correlation data does not show very high results, which could lead to multicollinearity problems with bias in the determination of individual predictors (Farrar & Glauber, 1967). However, to test any collinearity between the variables, we calculate the variance inflation factors (VIF) (Hair, 1995). The results obtained vary from a minimum of 1.83 and a maximum of 2.24, which are far below the threshold of 10 that is generally accepted in similar studies (Hair, 1995).

TABLE 2 Descriptive statistics

Variable	Obs.	Mean	Std. dev.
Risk	1104	0.2505557	0.0775854
Env	1039	55.18723	24.45464
Social	1039	63.10921	19.52974
Gov	1039	61.21956	18.86213
Incentive	1039	0.3017408	4,592,355
Liq	1090	1.767193	1.280235
ROA	1090	0.139956	0.1231768
Size	1105	16.82083	1.115832

4.2 | Empirical model results

We have developed several models to test the hypotheses. First, to understand which econometric model best suited our data, we ran the Lagrange multiplier (LM) (Silvey, 1959) test to understand the heterogeneity of our data and if we could adopt the Pooled Ordinary Least Square (POLS) model. The test did not show any significant results demonstrating heterogeneity leading to not being able to apply POLS (Silvey, 1959). Furthermore, moving to panel data analysis, we ran Hausman test (Hausman, 1978) to see which model between fixed effect and random effect was more appropriate. The test indicates that the most appropriate model is the fixed effect. We then adopt fixed effect model and we consider firm, and year fixed effect to control any exogenous economic change that could concretely influence the risk and therefore the volatility of companies in the sample.

The first hypothesis is tested through two different models. In the first, we consider only the environmental output of the CSR, while in the second we only consider the social output. Separating the two indicators into two distinct models allows us to appreciate more precisely how two distinct outcomes impact the dependent variable. Moreover, we used time lag for environmental and social outcomes because the results of investments in environmental and social actions need time to materialize, and their impact on the dynamics of the company are not instantaneous but have long-term benefits (Surroca et al., 2010). The first two models are reported below:

$$\mathrm{RISK}_t = \beta_0 + \beta_1\,\mathrm{Env}_{t-1} + \beta_2\,\mathrm{Incentive}_t + \beta_3\,\mathrm{Liq}_t + \beta_4\,\mathrm{ROA}_t + \beta_5\,\mathrm{Size}_t + \sum_i \beta x \mathrm{Year} + e_{it}.$$

$$\mathrm{RISK}_t = \beta_0 + \beta_1\,\mathrm{Social}_{t-1} + \beta_2\,\mathrm{Incentive}_t + \beta_3\,\mathrm{Liq}_t + \beta_4\,\mathrm{ROA}_t + \beta_5\,\mathrm{Size}_t + \sum_i \beta x \mathrm{Year} + e_{it}.$$

To test the moderating effect of CG, we developed two models in which we calculated the interaction term between governance and environmental and social outcomes. The models are shown below:

TABLE 3 Correlation matrix

	Risk	Env	Soc	Gov	Incentive	Liq	Roi	Size
Risk	1.0000							
Env	−0.2444	1.0000						
Social	−0.2216	0.6849	1.0000					
Gov	−0.1733	0.3136	0.2705	1.0000				
Incentive	−0.1013	0.1772	0.1496	0.3368	1.0000			
Liq	0.1447	−0.1958	−0.1759	−0.1201	−0.0840	1.0000		
ROA	−0.0937	−0.0268	0.0847	0.0367	−0.0721	0.0106	1.0000	
Size	−0.2008	0.4702	0.4250	0.2456	0.1825	−0.1877	−0.2113	1.0000

TABLE 4 Data panel results

	Model 1	Model 2	Model 3	Model 4
Env	−0.0528*** (0.000)	−0.100*** (0.000)		
Social			−0.0483*** (0.000)	−0.109*** (0.003)
Gov		−0.0738*** (0.005)		−0.099*** (0.007)
Env × Gov		−0.0909** (0.038)		
Social × Gov				−0.109* (0.053)
Incentive	−0.094* (0.052)	−0.0671 (0.185)	−0.0104** (0.032)	−0.0721 (0.153)
Liq	−0.056*** (0.001)	0.0558*** (0.001)	0.0606*** (0.000)	0.0571*** (0.001)
ROA	−0.906*** (0.000)	−0.862*** (0.000)	−0.841*** (0.000)	−0.811*** (0.000)
Size	−0.089*** (0.000)	−0.0865*** (0.000)	−0.0104*** (0.000)	−0.0101*** (0.000)
Constant	0.435*** (0.000)	0.468*** (0.000)	0.460*** (0.000)	0.510*** (0.000)
Observation	1019	1019	1019	1019
R-squared	0.109	0.112	0.102	0.106
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: *p* value are reported in parenthesis.

$$\text{RISK}_t = \beta_0 + \beta_1\,\text{Env}_{t-1} + \beta_2\,\text{Gov}_{t-1} + \beta_2\,\text{EnvxGov} + \beta_2\,\text{Incentive}_t + \beta_3\,\text{Liq}_t + \beta_4\,\text{ROA}_t + \beta_5\,\text{Size}_t + \sum_i \beta x\text{Year} + e_{it}.$$

$$\text{RISK}_t = \beta_0 + \beta_1\,\text{Env}_{t-1} + \beta_2\,\text{Gov}_{t-1} + \beta_2\,\text{EnvxGov} + \beta_2\,\text{Incentive}_t + \beta_3\,\text{Liq}_t + \beta_4\,\text{ROA}_t + \beta_5\,\text{Size}_t + \sum_i \beta x\text{Year} + e_{it}.$$

In models 1 and 3, as reported in Table 4, we directly test the effect of environmental and social outcomes on firm's risk. Both models show a negative impact of independent variables on risk. This leads us to confirm Hypotheses 1a and 1b, suggesting an effective decrease in the total risk of companies when the latter implemented high actions inherent to practices linked to environmental and social aspects. In other words, lower volatility is associated with high levels of CSR, these results lead to various implications of both a theoretical and managerial nature, which will be addressed in the following paragraph.

In models 2 and 4, we tested the interaction term between CG and CSR outcomes to highlight an increase or decrease in the main relationship. As suggested in Hypothesis 2, we expected a moderator interaction effect that increased the positive effect of CSR on risk. The interaction term of the two variables is negative and significant, decreasing even more the total risk of the company, so we can accept Hypothesis 2.

Although the hypotheses are confirmed, it is necessary to further deepen the analysis. In particular, it is essential to understand if analysis models suffer from endogeneity problems (Johnston, 1971). As underlined by Wintoki et al. (2012), management and corporate finance research in many cases have relevant issues related to endogeneity. Endogeneity occurs when a variable, whether or not present in the model, is related with the error term (*e*) in the model leading to errors in the determination of the regression coefficients (Wintoki et al., 2012). Usually, it is possible to identify two sources of endogeneity: the problem of omitted variables and simultaneous effects (Smelser & Baltes, 2001). Concerning the first, we used several control variables and yearly and firm fixed effect, which decrease the possibility of having endogeneity problems of the first type. The second problem is when the independent variable is affected by the dependent variable. To avoid this problem, we follow Jo and Na's (2012) approach of developing a simultaneous equation system, as reported below:

TABLE 5 Simultaneous equation system results

	(Risk)	(Env)	(Risk)	(Soc)
Env	−0.0528*** (0.000)			
Social			−0.0483*** (0.000)	
Risk		0.0018 (0.970)		−0.522 (0.240)
Incentive	−0.094* (0.052)	0.0267*** (0.006)	−0.0104** (0.032)	−0.938 (0.289)
Liq	−0.056*** (0.001)	−0.0017 (0.693)	0.0606*** (0.000)	0.0648 (0.875)
ROA	−0.906*** (0.000)	0.0245 (0.523)	−0.841*** (0.000)	−0.803** (0.022)
Size	−0.089*** (0.000)	0.0643*** (0.000)	−0.0104*** (0.000)	0.568*** (0.000)
Constant	0.435*** (0.000)	0.553** (0.025)	0.460*** (0.000)	0.333 (0.141)
Observation	1019	1019	1019	1019
R-squared	0.109	0.132	0.102	0.122
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: p value are reported in parenthesis.

$$\text{RISK}_t = \beta_0 + \beta_1\,\text{Env}_{t-1} + \text{control variables} + \sum\nolimits_i \beta x\text{Year} + e_{it}.$$

$$\text{ENV}_t = \beta_0 + \beta_1\,\text{RISK}_{t-1} + \text{control variables} + \sum\nolimits_i \beta x\text{Year} + e_{it}.$$

$$\text{RISK}_t = \beta_0 + \beta_1\,\text{SOC}_{t-1} + \text{control variables} + \sum\nolimits_i \beta x\text{Year} + e_{it}.$$

$$\text{SOC}_t = \beta_0 + \beta_1\,\text{RISK}_{t-1} + \text{control variables} + \sum\nolimits_i \beta x\text{Year} + e_{it}.$$

In the models, we switched dependent and independent variables while keeping the same control variables. In both cases, we considered the time lag in order to highlight whether a greater risk at time $t-1$ influenced environmental and social actions at t. This technique also allows us to precisely compare the results of the main regression model reported in Table 5 (Jo & Na, 2012). The results show that neither of the two outcomes of the CSR are significantly influenced the by firm's total risk. This allows us to state that the analysis model is not influenced by any endogeneity problem, and shows that the results that we have obtained are not biased. We also underline that CSR outcomes are positively influenced by the size and performance of the company. This is in line with previous studies, which state that both of these indicators have a positive impact on CSR (e.g., Nirino, Ferraris, et al., 2020; Wang & Sarkis, 2017).

5 | DISCUSSION, CONTRIBUTIONS, AND LIMITATIONS

5.1 | Discussion of the results

The objective of this article was to understand in detail how CSPs can impact the total risk of a company. Furthermore, we have also considered CG as a key variable in this relationship. We hypothesized that at higher levels of CG, the main relationship could be even stronger. Compared to previous studies (e.g., Sassen et al., 2016) in which governance was seen at the same level as CSPs, we instead hypothesized that it is the tool with which CSR strategies are implemented and it also has a key role in determining the total risk for the company.

The use of a methodology based on panel data from 2015 to 2019 has allowed to confirm all of the hypotheses of our study. In particular, by disaggregating the CSPs into two distinct measures (i.e., CSR outcomes) (Wang & Sarkis, 2017), it was possible to appreciate in detail how and if different aspects of the CSR can influence the firm overall risk. In both cases, the decrease in risk is significant and there are many explanations. In particular, companies with a high commitment to CSR strategies see greater support from stakeholders, which decreases risk (El Ghoul et al., 2011; Jia et al., 2020). This is also reflected in customer's behavior (who are in many cases the shareholders themselves) because they will be inclined to support the company, even in times of systemic crisis. Rehman et al. (2020) also highlighted how even companies operating in industries with a non-ideal reputation benefit from CSR strategies. These results reinforce the evidence of previous studies (e.g., Jo & Na, 2012). So logically if we associate a decrease in risk with responsible behavior, then it is possible to suggest that irresponsible behavior may increase the risk. In particular, Kim and Kim (2014) argue that irresponsible action (both environmental and social) may lead to a short-term increase in profit. However, this increase in profit is associated with an increase in the idiosyncratic risk, with a direct negative impact on the value for the company.

A successful implementation of these strategies can only pass from CG decisions that can be aligned with the company's main objective—the creation of value. Our results have demonstrated that the risk decreases even more when CSR strategies are implemented with proper CG mechanism. Hence, irresponsible behavior that is not linked to CSR leads to an increase in risk, with a consequent decrease in value for the shareholder. This is due to the fact that at greater risk, investors and lenders will finance the company at a higher cost with a consequent increase in the weighted cost of capital, which is

fundamental element in the evaluation of the company (Damodaran, 2015). This implies that value can only increase if managers are encouraged through adequate remuneration policies to implement concrete CSR strategies and by maintaining responsible behavior.

Managers should also implement CSR strategies more vigorously in those companies where volatility and negative events are more frequent (e.g., oil, gambling, etc.). However, the implementation is not always spontaneous but is also led by policymakers. Following an institutional approach, managers often implement these strategies because they are "forced" from the outside (e.g., laws on pollution). In addition, many national regulators oblige the company to submit integrated reports, in which every corporate aspect is described with a view to achieving corporate objectives. This, in addition to being a tool that makes the company's activity transparent, risks widening the gap between the objectives of the shareholders (maximization of the share price) and the objectives of the other stakeholders who may prioritize environmental and social aspects (Lueg et al., 2016).

5.2 | Theoretical implications

Our research contributes to theory in several ways. First, even if the literature on CSR is wide, it is nevertheless constantly expanding, always opening up new possibilities for study. In particular, through our study we expand the stream of research that seeks to connect CSP with a specific financial measure, as represented by the risk. Moreover, we contribute to stakeholder theory and its implications for CSR literature (Freeman, 1994). Following the stakeholder theory perspective, the ability of CSR and its outcomes to mitigate risk is due to the ability to respond to the CSR stakeholders' expectations. This leads them to support the company's business, leading to greater loyalty (Martinez & Rodriguez del Bosque, 2013). Stakeholder and shareholder loyalty may lead to reduction of total risk. In particular, when the company faces a crisis, they avoid over-reactions and support the company (Helm, 2013). Hence, the ability of the CSR to reduce the negative effects of over-reactions in case of controversies (Nirino et al., 2021) is also able to reduce the volatility of the shares when the company is listed. Moreover, we also contribute to corporate governance literature by suggesting that the implementation of CSR strategies sees an efficacy in the presence of adequate CG mechanisms. In fact, good CG mechanisms, as underlined by John et al. (2008) are able to align the interests of managers and all stakeholders by increasing loyalty and trust reducing risk. CG can lead managers to have a greater involvement on CSR-related issues by increasing the efforts to achieve its objectives.

5.3 | Managerial implications

From a managerial point of view, it is necessary to encourage managers to pursue CSR strategies because decreasing the risk and increasing the value of the company would bring a benefit to the managers and to all stakeholders. Moreover, an increase in firm risk leads also to an increase in the cost of capital, with a consequent decrease in the value of the company (Damodaran, 2015). Managers should effectively implement CSR strategies to avoid these problems. Consequently, managers should pay attention to investments in CSR to be able to increase the value for the shareholders. However, some previous studies have underlined that managers only implement CSR strategies to increase their power by showing a positive image (e.g., Surroca & Tribo, 2008; Kim et al., 2012). Hence, this incorrect implementation can lead to increased risk, and decreased value and performance. The managers may be interested in implementing numerous CSR strategies, which also increase costs. Therefore, the correct implementation, through proper CG mechanism, is a fundamental point in the development of successful CSR strategies, which can potentially lead to better relationships with stakeholders, a decrease in risk and a greater company value.

5.4 | Limitations and future research lines

This paper has observed the following limitations. We used a single CSR measure based on ESG criteria developed by Thomson Reuters. Although it is a measure generally accepted and used in literature (e.g., Sassen et al., 2016), using other indicators would allow us to compare the results. Moreover, given that we have used secondary data, our work may suffer from some valuation bias. In this case, primary data could expand and give new insights. Our study only considers volatility as a risk measure and it does not consider in detail other types of risk (e.g., operational risk, credit risk, default risk, etc.). Therefore, future studies should explore the impacts that CSR strategies may have on risks other than financial risk. Furthermore, our study is based on listed companies. Although this may not be a limit, future studies should focus on small-medium enterprises (SMEs) who often have limited resources or start-ups who have higher risks to investigate if the application of CSR strategies are able to decrease or minimize the risks for these companies, as well as the listed companies. Additionally, other studies should consider new emerging markets to understand how certain strategic and financial decisions regarding CSR are managed. Also, to effectively understand the effects of CSR in other contexts, future studies should compare other companies listed in other countries, and also expose the analysis in emerging markets (e.g., BRICS, Next Eleven, MINT, and CIVETS). Moreover, it would be interesting to broaden the analysis through another theoretical background (e.g., institutional theory) to understand how others aspects can moderate or mediate the relationship between CSR and risk (e.g., management incentive policies). This aspect is also connected with the previous one because each country may have laws that regulate the aspects related to CSR in a different way. In this case, a comparative study will be able to expand the contributions and implications of both a theoretical and managerial nature. Finally, it could be interesting to investigate the impact of the

capital structure (Miglietta et al., 2018) on CSP mediating the role of the different systems of remuneration, which is strictly connected to the corporate governance of listed companies.

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REFERENCES

Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, *32*(3), 836–863. https://doi.org/10.5465/amr.2007.25275678

Aguinis, H., & Glavas, A. (2012). What we know and Don't know about corporate social responsibility: A review and research agenda. *Journal of Management*, *38*(4), 932–968. https://doi.org/10.1177/0149206311436079

Albuquerque, R., Koskinen, Y., & Zhang, C. (2019). Corporate social responsibility and firm risk: Theory and empirical evidence. *Management Science*, *65*(10), 4451–4469. https://doi.org/10.1287/mnsc.2018.3043

Ali, W., Frynas, J. G., & Mahmood, Z. (2017). Determinants of corporate social responsibility (CSR) disclosure in developed and developing countries: A literature review: Determinants of CSR disclosure. *Corporate Social Responsibility and Environmental Management*, *24*(4), 273–294. https://doi.org/10.1002/csr.1410

Ardito, L., & Dangelico, R. M. (2018). Firm environmental performance under scrutiny: The role of strategic and organizational orientations: Firm environmental performance under scrutiny. *Corporate Social Responsibility and Environmental Management*, *25*(4), 426–440. https://doi.org/10.1002/csr.1470

Arora, P., & Dharwadkar, R. (2011). Corporate governance and corporate social responsibility (CSR): The moderating roles of attainment discrepancy and organization slack: Corporate governance and CSR. *Corporate Governance: An International Review*, *19*(2), 136–152. https://doi.org/10.1111/j.1467-8683.2010.00843.x

Battisti, E., Bollani, L., Miglietta, N., & Salvi, A. (2020). The impact of leverage on the cost of capital and market value: Evidence from Sharī'ah-compliant firms. *Management Research Review*, *43*(9), 1081–1096. https://doi.org/10.1108/MRR-01-2019-0007

Battisti, E., Nirino, N., Leonidou, E., & Thrassou, A. (2022). Corporate venture capital and CSR performance: An extended resource based view's perspective. *Journal of Business Research*, *139*, 1058–1066. https://doi.org/10.1016/j.jbusres.2021.10.054

Bhattacharya, A., Good, V., Sardashti, H., & Peloza, J. (2020). Beyond warm glow: The risk-mitigating effect of corporate social responsibility (CSR). *Journal of Business Ethics*, *171*, 317–336. https://doi.org/10.1007/s10551-020-04445-0

Bresciani, S., & Oliveira, N. (2007). Corporate environmental strategy: A must in the new millennium. *International Journal of Business Environment*, *1*(4), 488. https://doi.org/10.1504/IJBE.2007.014604

Brickley, J. A., & Zimmerman, J. L. (2010). Corporate governance myths: Comments on Armstrong, Guay, and weber. *Journal of Accounting and Economics*, *50*(2–3), 235–245. https://doi.org/10.1016/j.jacceco.2010.10.002

Brown, J. A., & Forster, W. R. (2013). CSR and stakeholder theory: A tale of Adam smith. *Journal of Business Ethics*, *112*(2), 301–312. https://doi.org/10.1007/s10551-012-1251-4

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946–967. https://doi.org/10.5465/amr.2007.25275684

Carayannis, E. G., Grigoroudis, E., Del Giudice, M., Della Peruta, M. R., & Sindakis, S. (2017). An exploration of contemporary organizational artifacts and routines in a sustainable excellence context. *Journal of Knowledge Management*, *21*(1), 35–56. https://doi.org/10.1108/JKM-10-2015-0366

Carroll, A. B. (2004). Managing ethically with global stakeholders: A present and future challenge. *Academy of Management Perspectives*, *18*(2), 114–120. https://doi.org/10.5465/ame.2004.13836269

Cassely, L., Revelli, C., Ben Larbi, S., & Lacroux, A. (2020). Sustainable development drivers of companies: An international and multilevel analysis. *Corporate Social Responsibility and Environmental Management*, *27*(5), 2028–2043. https://doi.org/10.1002/csr.1944

Chakraborty, A., Gao, L., & S., & Sheikh, S. (2019). Managerial risk taking incentives, corporate social responsibility and firm risk. *Journal of Economics and Business*, *101*, 58–72. https://doi.org/10.1016/j.jeconbus.2018.07.004

Chan, M. C., Watson, J., & Woodliff, D. (2014). Corporate governance quality and CSR disclosures. *Journal of Business Ethics*, *125*(1), 59–73. https://doi.org/10.1007/s10551-013-1887-8

Cillo, V., Petruzzelli, A. M., Ardito, L., & Del Giudice, M. (2019). Understanding sustainable innovation: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, *26*(5), 1012–1025. https://doi.org/10.1002/csr.1783

Cortese, D., Rainero, C., & Cantino, V. (2020). Stakeholders' social dialogue about responsibility and sustainability in the food sector. *British Food Journal*, *123*(3), 1287–1301. https://doi.org/10.1108/BFJ-11-2019-0826

Cremers, K. J. M., & Nair, V. B. (2005). Governance mechanisms and equity prices. *The Journal of Finance*, *60*(6), 2859–2894. https://doi.org/10.1111/j.1540-6261.2005.00819.x

Damodaran, A. (2015). *Applied corporate finance* (4th ed.). Wiley.

Del Giudice, M., Khan, Z., De Silva, M., Scuotto, V., Caputo, F., & Carayannis, E. (2017). The microlevel actions undertaken by owner-managers in improving the sustainability practices of cultural and creative small and medium enterprises: A United Kingdom-Italy comparison. *Journal of Organizational Behavior*, *38*(9), 1396–1414. https://doi.org/10.1002/job.2237

Dorfleitner, G., Halbritter, G., & Nguyen, M. (2015). Measuring the level and risk of corporate responsibility – An empirical comparison of different ESG rating approaches. *Journal of Asset Management*, *16*(7), 450–466. https://doi.org/10.1057/jam.2015.31

El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance*, *35*(9), 2388–2406. https://doi.org/10.1016/j.jbankfin.2011.02.007

Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: The problem revisited. *The Review of Economics and Statistics*, *49*(1), 92. https://doi.org/10.2307/1937887

Franceschelli, M. V., Santoro, G., Giacosa, E., & Quaglia, R. (2019). Assessing the determinants of performance in the recycling business: Evidence from the Italian context. *Corporate Social Responsibility and Environmental Management*, *26*(5), 1086–1099. https://doi.org/10.1002/csr.1788

Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, *4*(4), 409–421. https://doi.org/10.2307/3857340

Fuenzalida, D., Mongrut, S., Arteaga, J. R., & Erausquin, A. (2013). Good corporate governance: Does it pay in Peru? *Journal of Business Research*, *66*(10), 1759–1770. https://doi.org/10.1016/j.jbusres.2013.01.008

Galati, A., Sakka, G., Crescimanno, M., Tulone, A., & Fiore, M. (2019). What is the role of social media in several overtones of CSR communication? The case of the wine industry in the southern Italian regions. *British Food Journal*, *121*(4), 856–873. https://doi.org/10.1108/BFJ-07-2018-0437

Gangi, F., Mustilli, M., & Varrone, N. (2019). The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: Evidence from the European banking industry. *Journal of Knowledge Management*, *23*(1), 110–134. https://doi.org/10.1108/JKM-04-2018-0267

Gobo, G. (2004). Sampling, representativeness and generalizability. In C. Seale, G. Gobo, J. F. Gubrium, & D. Silverman (Eds.), *Qualitative research practice* (pp. 435–456). Sage.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal*, *30*(4), 425–445. https://doi.org/10.1002/smj.750

Goyal, A., & Santa-Clara, P. (2003). Idiosyncratic risk matters! *The Journal of Finance*, *58*(3), 975–1007. https://doi.org/10.1111/1540-6261.00555

Gregory, A., Tharyan, R., & Whittaker, J. (2014). Corporate social responsibility and firm value: Disaggregating the effects on cash flow, risk and growth. *Journal of Business Ethics*, *124*(4), 633–657. https://doi.org/10.1007/s10551-013-1898-5

Hair, J. F. (Ed.). (1995). *Multivariate data analysis with readings* (4th ed.). Prentice Hall.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, *46*(6), 1251. https://doi.org/10.2307/1913827

Helm, S., & Tolsdorf, J. (2013). How does corporate reputation affect customer loyalty in a corporate crisis?: Corporate reputation, customer loyalty and crises. *Journal of Contingencies and Crisis Management*, *21*(3), 144–152. https://doi.org/10.1111/1468-5973.12020

Huang, H.-H., Chan, M.-L., Huang, I.-H., & Chang, C.-H. (2011). Stock price volatility and overreaction in a political crisis: The effects of corporate governance and performance. *Pacific-Basin Finance Journal*, *19*(1), 1–20. https://doi.org/10.1016/j.pacfin.2010.08.001

Jamali, D., Safieddine, A. M., & Rabbath, M. (2008). Corporate governance and corporate social responsibility synergies and interrelationships. *Corporate Governance: An International Review*, *16*(5), 443–459. https://doi.org/10.1111/j.1467-8683.2008.00702.x

Jia, Y., Gao, X., & Julian, S. (2020). Do firms use corporate social responsibility to insure against stock Price risk? Evidence from a natural experiment. *Strategic Management Journal*, *41*(2), 290–307. https://doi.org/10.1002/smj.3107

Jo, H., & Harjoto, M. A. (2011). Corporate governance and firm value: The impact of corporate social responsibility. *Journal of Business Ethics*, *103*(3), 351–383. https://doi.org/10.1007/s10551-011-0869-y

Jo, H., & Na, H. (2012). Does CSR reduce firm risk? Evidence from controversial industry sectors. *Journal of Business Ethics*, *110*(4), 441–456. https://doi.org/10.1007/s10551-012-1492-2

John, K., Litov, L., & Yeung, B. (2008). Corporate governance and risk-taking. *The Journal of Finance*, *63*(4), 1679–1728. https://doi.org/10.1111/j.1540-6261.2008.01372.x

Johnston, J. (1971). *Econometric methods (2d ed)*. McGraw-Hill.

Kim, K.-H., Kim, M., & Qian, C. (2018). Effects of corporate social responsibility on corporate financial performance: A competitive-action perspective. *Journal of Management*, *44*(3), 1097–1118. https://doi.org/10.1177/0149206315602530

Kim, M., & Kim, Y. (2014). Corporate social responsibility and shareholder value of restaurant firms. *International Journal of Hospitality Management*, *40*, 120–129. https://doi.org/10.1016/j.ijhm.2014.03.006

Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review*, *87*(3), 761–796. https://doi.org/10.2308/accr-10209

King, B. G., & Whetten, D. A. (2008). Rethinking the relationship between reputation and legitimacy: A social actor conceptualization. *Corporate Reputation Review*, *11*(3), 192–207. https://doi.org/10.1057/crr.2008.16

Kraus, S., Rehman, S. U., & García, F. J. S. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, *160*, 120262. https://doi.org/10.1016/j.techfore.2020.120262

Li, W., Zheng, M., Zhang, Y., & Cui, G. (2020). Green governance structure, ownership characteristics, and corporate financing constraints. *Journal of Cleaner Production*, *260*, 121008. https://doi.org/10.1016/j.jclepro.2020.121008

Liao, Z., & Zhang, M. (2020). The influence of responsible leadership on environmental innovation and environmental performance: The moderating role of managerial discretion. *Corporate Social Responsibility and Environmental Management*, *27*(5), 2016–2027. https://doi.org/10.1002/csr.1942

Lueg, K., Lueg, R., Andersen, K., & Dancianu, V. (2016). Integrated reporting with CSR practices: A pragmatic constructivist case study in a Danish cultural setting. *Corporate Communications: An International Journal*, *21*(1), 20–35. https://doi.org/10.1108/CCIJ-08-2014-0053

Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of Marketing*, *70*(4), 1–18. https://doi.org/10.1509/jmkg.70.4.1

Malik, M. (2015). Value-enhancing capabilities of CSR: A brief review of contemporary literature. *Journal of Business Ethics*, *127*(2), 419–438. https://doi.org/10.1007/s10551-014-2051-9

Markowitz, H. (1952). Portfolio selection. *The. Journal of Finance*, *7*(1), 77. https://doi.org/10.2307/2975974

Martínez, P., & Rodríguez del Bosque, I. (2013). CSR and customer loyalty: The roles of trust, customer identification with the company and satisfaction. *International Journal of Hospitality Management*, *35*, 89–99. https://doi.org/10.1016/j.ijhm.2013.05.009

McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academy of Management Journal*, *31*(4), 854–872. https://doi.org/10.5465/256342

Miglietta, N., Battisti, E., Carayannis, E., & Salvi, A. (2018). Capital structure and business process management: Evidence from ambidextrous organizations. *Business Process Management Journal*, *24*(5), 1255–1270.

Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, *237*, 117727. https://doi.org/10.1016/j.jclepro.2019.117727

Nirino, N., Battisti, E., Papa, A., & Miglietta, N. (2020). Shareholder value and dividend policy: The role of ESG strategies. In *IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD)* (pp. 1–5). IEEE. https://doi.org/10.1109/ICTMOD49425.2020.9380585

Nirino, N., Ferraris, A., Miglietta, N., & Invernizzi, A. C. (2020). Intellectual capital: The missing link in the corporate social responsibility–financial performance relationship. *Journal of Intellectual Capital*, *23*, 420–438. https://doi.org/10.1108/JIC-02-2020-0038

Nirino, N., Miglietta, N., & Salvi, A. (2019). The impact of corporate social responsibility on firms' financial performance, evidence from the food and beverage industry. *British Food Journal*, *122*(1), 1–13. https://doi.org/10.1108/BFJ-07-2019-0503

Nirino, N., Santoro, G., Miglietta, N., & Quaglia, R. (2021). Corporate controversies and company's financial performance: Exploring the moderating role of ESG practices. *Technological Forecasting and Social Change*, *162*, 120341. https://doi.org/10.1016/j.techfore.2020.120341

Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics*, *138*(2), 327–347. https://doi.org/10.1007/s10551-015-2613-5

Rehman, Z., Khan, A., & Rahman, A. (2020). Corporate social responsibility's influence on firm risk and firm performance: The mediating role of firm reputation. *Corporate Social Responsibility and Environmental Management*, *27*(6), 2991–3005. https://doi.org/10.1002/csr.2018

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International*

Review, *15*(2), 404–413. https://doi.org/10.1111/j.1467-8683.2007.00570.x

Ross, S. A., Westerfield, R., & Jaffe, J. F. (2016). *Corporate finance* (11th ed.). Published by McGraw-Hill Education.

Sassen, R., Hinze, A.-K., & Hardeck, I. (2016). Impact of ESG factors on firm risk in Europe. *Journal of Business Economics*, *86*(8), 867–904. https://doi.org/10.1007/s11573-016-0819-3

Shim, J. M., Lee, W. S., Moon, J., & Song, M. (2021). Coffee shop corporate social responsibility (CSR) and reuse intention using triple bottom line theory. *British Food Journal*, *123*, 4421–4435. https://doi.org/10.1108/BFJ-12-2020-1134

Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. *Journal of Political Economy*, *94(3, Part 1)*, 461–488. https://doi.org/10.1086/261385

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, *52*(2), 737–783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x

Silvey, S. D. (1959). The Lagrangian multiplier test. *The Annals of Mathematical Statistics*, *30*(2), 389–407. https://doi.org/10.1214/aoms/1177706259

Sinthupundaja, J., Chiadamrong, N., & Kohda, Y. (2020). Knowledge acquisition from intra- and inter-organisational relationships, CSR and financial performance. *International Journal of Knowledge Management Studies*, *11*(2), 190. https://doi.org/10.1504/IJKMS.2020.106332

Smelser, N. J., & Baltes, P. B. (Eds.). (2001). *International encyclopedia of the social & behavioral sciences* (1st ed.). Elsevier.

Sun, W., & Cui, K. (2014). Linking corporate social responsibility to firm default risk. *European Management Journal*, *32*(2), 275–287. https://doi.org/10.1016/j.emj.2013.04.003

Surroca, J., & Tribó, J. A. (2008). Managerial entrenchment and corporate social performance. *Journal of Business Finance & Accounting*, *35*(5–6), 748–789. https://doi.org/10.1111/j.1468-5957.2008.02090.x

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources: Intangibles, corporate responsibility, and financial performance. *Strategic Management Journal*, *31*(5), 463–490. https://doi.org/10.1002/smj.820

Turker, D. (2009). How corporate social responsibility influences organizational commitment. *Journal of Business Ethics*, *89*(2), 189–204. https://doi.org/10.1007/s10551-008-9993-8

Wang, G., & Yu, L. (2020). Analysis of Enterprise sustainable crowdsourcing incentive mechanism based on principal-agent model. *Sustainability*, *12*(8), 3238. https://doi.org/10.3390/su12083238

Wang, Z., & Sarkis, J. (2017). Corporate social responsibility governance, outcomes, and financial performance. *Journal of Cleaner Production*, *162*, 1607–1616. https://doi.org/10.1016/j.jclepro.2017.06.142

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, *105*(3), 581–606. https://doi.org/10.1016/j.jfineco.2012.03.005

Xie, J., Nozawa, W., & Managi, S. (2020). The role of women on boards in corporate environmental strategy and financial performance: A global outlook. *Corporate Social Responsibility and Environmental Management*, *27*(5), 2044–2059. https://doi.org/10.1002/csr.1945

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