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ESG Practices and the Relevance of Accounting Information: The Moderating Effect of Corruption Levels in G20 Countries

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ABSTRACT

Objective: this study is based on the assumption that the level of corruption in a country's context can influence how stakeholders perceive the environmental, social, and governance (ESG) practices disclosed by companies. The objective is to analyze the moderating effect of corruption on the relationship between ESG performance and the relevance of accounting information for companies in G20 countries. **Methods:** the study considered 171,693 firm/year observations from organizations in G20 countries that had all the necessary data to measure the relevance of accounting information from 2013 to 2021. Descriptive analysis, correlation, and multiple linear regression were conducted. **Results:** based on the findings, it can be inferred that unified ESG performance, as well as its individual pillars, is positively associated with the market value of the analyzed organizations. However, when observing the moderating effect of corruption levels, no significant results were obtained. **Conclusions:** this study contributes to the literature and to users of accounting information by identifying that the ESG performance of G20 companies helps increase the relevance of accounting information, and that external factors, such as corruption, affect the level of ESG disclosure, but not to the extent of being significant for the market.

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INTRODUCTION

Research related to environmental, social, and governance (ESG) practices has been emerging globally. This phenomenon can be explained by the positive effects identified by organizations as a result of their engagement in such practices (Dunn & Harness, 2018; Xu et al., 2020. The relationship between socially responsible behavior and financial performance, including the quality of accounting information (QAI), has been explored in the literature (Huang & Watson, 2015). Studies report that companies engaged in ESG practices have better market performance and lower cost of capital (Dhaliwal et al., 2011; El Ghoul et al., 2011; Ng & Rezaee, 2015; Peng & Isa, 2020; Salehi et al., 2018; Velte, 2017).

It is noted that the incorporation of ESG practices into corporate culture, as well as into business models and strategic planning, reflects on the quality of earnings (Rezaee, 2016). Thus, there is a positive relationship between ESG and QAI, which is measured by numerous metrics, such as earnings management (Chih et al., 2008; Martínez-Ferrero et al., 2016), earnings persistence (Jia & Li, 2021; Rezaee et al., 2020), and value relevance (VR) (Cordazzo et al., 2020; Degenhart et al., 2017).

The literature related to VR, also known as the value relevance of accounting information, presents various models aimed at capturing the effect of accounting disclosures on earnings and equity in stock prices or returns. In this study, VR was analyzed by considering, in addition to earnings and equity values, ESG performance and the corruption index as determining factors to explain variations in the market-to-book ratio of companies from Group of 20 (G20) countries.

ESG performance is considered as the engagement of organizations in socially responsible practices. From the perspective of signaling theory, the level of engagement in such practices is viewed as a way for companies to signal their ability to address institutional gaps to stakeholders, compared to other organizations (Zhang et al., 2020). In this way, organizations can demonstrate their commitment to socially responsible practices to market participants.

In this study, ESG performance is represented by the unified score (obtained from the Refinitiv Eikon® database), as well as by its individual pillars: environmental, social, and governance. Peng and Isa (2020) emphasize that environmental practices relate to actions involving resource use, emissions, and innovations. Social practices pertain to the workforce, human rights, and product responsibility offered to the public (Peng & Isa, 2020). Lastly, governance practices focus on issues related to management, shareholders, and socially responsible strategies (Peng & Isa, 2020).

However, the relationship between organizational performance and their engagement in ESG practices can be influenced by external factors that may mitigate the positive effects highlighted in the literature. Studies indicate that companies operating in contexts where questionable practices are the norm face higher costs to implement ESG actions, thereby reducing the potential benefits of this strategy (Barnea & Rubin, 2010; Grougiou et al., 2016; McWilliams & Siegel, 2001). Hossain and Kryzanowski (2021) identified a negative association between ESG performance and the level of corruption in U.S. companies, and further noted that the effects of corruption on such practices are more significant than other external traditional norms, such as social capital and religiosity.

This research defines corruption as the misuse of power by public officials or established legal and regulatory systems by individuals or organizations for private gain (Hossain & Kryzanowski, 2021; Lambert-Mogiliansky et al., 2008; Neu et al., 2013). Corruption also involves the marginalization of social welfare, prioritizing goals related to individual or organizational enrichment (Arghyrou, 2010; Hossain & Kryzanowski, 2021).

Although there is growing research on the relevance of ESG performance within organizations, particularly due to the increasing demand for information related to such practices (Ali et al., 2017), much remains to be explored about its influence, especially regarding the external context in which companies operate. Therefore, the relationship between ESG performance and VR is an empirical issue that requires further investigation, along with the potential moderating effects of corruption levels in G20 countries on this relationship. Consequently, this study aims to answer the following research question: "How does corruption influence the relationship between ESG performance and the relevance of accounting information?" The objective is to analyze the moderating effect of corruption on the relationship between ESG performance and the relevance of accounting information for companies in G20 countries.

The originality of this research lies in the investigation of the relationship between ESG performance and the relevance of accounting information, with a specific focus on G20 countries. Additionally, the study's distinguishing feature is the inclusion of the corruption index as a moderating factor, an aspect that has been underexplored in the existing literature. By addressing this topic, the research provides a more in-depth and contextualized analysis of corporate operations, reflecting the complexity of institutional and regulatory environments. It considers the potential impacts that a high-corruption context may have on the potential benefits related to ESG engagement. Therefore, this study not only

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contributes to the theoretical advancement of ESG dynamics but also offers significant practical insights for accountants, managers, and policymakers.

Thus, this study contributes theoretically in several ways. First, it addresses the engagement of G20 companies in ESG practices, as socially responsible behavior is an emerging topic from both theoretical and financial market perspectives (Friede et al., 2015). Additionally, this study distinguishes itself from others that have examined the relevance of accounting information concerning ESG practices by utilizing a broader measure that considers all three ESG pillars (environmental, social, and governance), rather than focusing on a specific measure related to environmental information (Hassel et al., 2005) or corporate social responsibility (Degenhart et al., 2017).

Additionally, previous studies have almost exclusively examined the effects of corruption in different countries on ESG performance (Hossain & Kryzanowski, 2021; Ioannou & Serafeim, 2012; Krishnamurti et al., 2018; Lopatta et al., 2017). This study seeks to examine the potential moderating effect of corruption on the relationship between socially responsible behavior and the value relevance (VR) of accounting information disclosed by organizations. In doing so, it contributes to the literature by expanding the analysis of the influence of external factors on ESG practices, observing their combined effects on the relevance of the information disclosed by the organizations analyzed.

Practically, this study contributes to accountants and managers by demonstrating how ESG practices can influence the quality of accounting information, as these practices are shown to be relevant to financial market participants. The findings can help organizations in managing future investments in socially responsible behavior. Additionally, understanding the potential effects of corruption on the benefits of ESG practices allows managers to develop more robust strategies for operating in challenging environments, minimizing risks associated with unethical practices, and improving the quality of ESG reporting to financial market participants.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Signaling theory (ST) focuses on the voluntary communication of information related to an organization's positive attributes to those who are interested in such information (Connelly et al., 2011). Additionally, ST addresses the reduction of information asymmetry between two related parties (Spence, 2002). It is noteworthy that information disclosure in capital markets occurs unequally; therefore, the voluntary signaling of certain information, such as those related to ESG practices, can add economic value to organizations.

In the organizational context, the ST emphasizes the intention of organizations to share information and, in doing so, receive feedback from the market, their stakeholders, and society (Connelly et al., 2011). Thus, managers are responsible for signaling information to market participants, such as investors and analysts. These signals can affect the company's value by reducing information asymmetry (Levy & Lazarovich-Porat, 1995).

Thus, in a context where managers and investors have different information, the manager, as the signaler, must decide whether and how to signal information to potential receivers. On the other hand, the receivers evaluate how they interpret the signal received (Connelly et al., 2011). It is also worth noting that high-quality companies are more motivated to signal their information (Connelly et al., 2011), and one of the characteristics of these organizations is a high level of investment in socially responsible practices (Daugaard, 2020).

A high-quality signaler is considered to be one who has the ability to meet the demands of a potential receiver, and thus, the costs of producing that signal are outweighed by the benefits of signaling (Connelly et al., 2011). Therefore, it can be inferred that an organization's engagement in ESG practices is a signal it sends to market participants, such as investors and analysts, regarding its commitment to such behaviors. It is also inferred that this signal is perceived positively by the receivers, thereby reflecting in the value relevance of these organizations.

Previous studies have investigated sustainability from various perspectives (Dyllick & Muff, 2016; Hahn et al., 2015; Hahn & Tampe, 2021; Landrum, 2018). According to Hahn et al. (2015), the paradoxical perspective on sustainability suggests that organizations must accept and manage the inherent tensions among the different aspects of corporate sustainability, even when they appear contradictory. This approach emphasizes the need for integrating the economic, environmental, and social dimensions, ensuring that one is not prioritized at the expense of the others (Hahn et al., 2015).

Dyllick and Muff (2016) classify corporate sustainability into three levels: sustainability 1.0, 2.0, and 3.0. The authors describe sustainability 1.0 as a stage where organizations adopt sustainable practices primarily to enhance their corporate image and generate value for shareholders. In sustainability 2.0, there is an expanded stakeholder perspective, where organizations aim to balance and create positive impacts across the economic, social, and environmental dimensions, applying management strategies aligned with the triple bottom line. Sustainability 3.0, according to the authors, involves

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truly sustainable businesses, where companies position themselves as responsible corporate citizens, creating value for the common good and transforming sustainability challenges into business opportunities.

Additionally, Landrum (2018) highlights the concept of weak sustainability, which is based on the premise that human capital can substitute natural capital, thereby promoting the idea that economic growth and technological advancement can compensate for environmental degradation. In contrast, strong sustainability argues that natural capital has irreplaceable value, prioritizing environmental protection (Landrum, 2018).

Hahn and Tampe (2021) discuss regenerative sustainability, which goes beyond merely mitigating the negative impacts of human activities on the environment. This approach is based on business practices that promote ecosystem resilience, adopting a systemic perspective that recognizes the interdependence between the economic, social, and ecological spheres.

Thus, it is evident that the concept of sustainability continues to evolve and can still be considered as something related to environmental, social, and governance (ESG) factors, increasingly becoming central to corporate decision-making (Durand et al., 2019), and a growing concern for numerous institutional and private investors (Iazzolino et al., 2023). As companies place increasing importance on ESG, a shift in value creation perspectives is observed, where organizations aim to generate sustainable long-term value for shareholders and stakeholders (Șerban et al., 2022; Taliento et al., 2019). In this context, the literature shows that ESG is being used as a signal by organizations to demonstrate their commitment to these behaviors to the market (Barbosa & Klann, 2023; Connelly et al., 2011; Uyar et al., 2020).

The role of investment in socially responsible practices within the financial market has been gaining prominence (Velte, 2019), as the literature suggests that such investments can generate superior financial returns for shareholders (Moskowitz, 1972). Beyond financial returns, the engagement in ESG practices aims to create positive impacts on society and the world. Consequently, numerous companies have gradually begun to voluntarily declare their commitment to these practices, making the investment relevant (Daugaard, 2020). In this context, it is noteworthy that organizations voluntarily adopt ESG practices in response to pressures exerted by stakeholders, such as regulatory bodies, environmentalists, creditors, and the media, which are identified as the main influencers of voluntary disclosure (Ali et al., 2017).

Rezaee et al. (2020) emphasize that there are numerous reasons why organizations commit to disclosing their superior performance in ESG practices, such as building better relationships with their stakeholders and enhancing their brand reputation. As a result, these organizations tend to have higher quality earnings. Additionally, the literature suggests that voluntary disclosure practices can be influenced by the cultural environment in which companies operate, along with corporate governance practices, ownership structure, and the individual characteristics of the company, board members, and managers (Jia & Li, 2021). The existence of these factors is one reason that may explain the variations in findings in the literature regarding ESG practices and organizational financial performance (Gregory et al., 2014).

Due to the emphasis on the financial returns of ESG practices, numerous studies have sought to investigate the existence of a positive relationship between ESG performance and the financial performance of organizations (Dhaliwal et al., 2011; El Ghoul et al., 2011; Ng & Rezaee, 2015; Peng & Isa, 2020; Velte, 2017). Velte (2017) found that both the unified value and the individual pillars of ESG performance positively influenced the financial performance of German companies, measured by return on assets and Tobin's Q. In an emerging market context, Salehi et al. (2018) examined this same relationship and their findings indicated positive returns for companies listed on the Tehran Stock Exchange. A common point in the findings of these studies is that engagement in ESG practices has significant effects in the financial market.

These findings suggest that high ESG performance demonstrates an organization's commitment to such practices. This underscores the importance of further investigating their potential effects in the capital markets. As a result, there is a growing body of research examining these practices and their impact on the relevance of companies' accounting information (Alipour et al., 2019; Cordazzo et al., 2020; Jia & Li, 2021; Rezaee et al., 2020).

Although the literature provides evidence on the relevance of ESG information (Jia & Li, 2021), there is a significant portion of divergent results regarding the relevance of ESG information in the financial market context. Observing Iranian companies, Alipour et al. (2019) found that the environmental disclosure of these companies did not significantly influence the persistence of their earnings. The same was identified in the Italian context, where Cordazzo et al. (2020) observed that ESG-related information was not relevant to the market. On the other hand, there is evidence showing a positive relationship between ESG performance and higher-quality earnings, with organizations presenting more persistent profits (Jia & Li, 2021).

Thus, investigating the effects of ESG disclosure in different countries must also consider the impact of national contextual factors, particularly regarding changes

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in the concerns of specific stakeholders who may exert varying pressures, thereby influencing companies' engagement in these practices (Ali et al., 2017). Moreover, the inconclusive evidence in the literature highlights the importance of continuing to investigate the relevance of ESG performance, especially when considering diverse contexts, such as those of the G20 countries.

Based on the discussion presented and despite the empirical evidence showing some divergence regarding the relevance of these information for the market, part of the literature has supported a positive relationship between ESG performance and organizational performance (Alipour et al., 2019; Cordazzo et al., 2020; Jia & Li, 2021; Rezaee et al., 2020), as it improves reputation (Melewar et al., 2017), reduces the cost of equity capital (Dhaliwal et al., 2011), and results in a higher expected growth rate in abnormal earnings (Gregory et al., 2014). From the perspective that ESG performance maximizes value for stakeholders and that the market views this positively, the following hypothesis is proposed:

> H1: ESG performance is positively related to the relevance of accounting information disclosed by G20 companies.

If H1 is not rejected, it can be inferred that ESG performance is relevant information for market participants, as it is reflected in the market performance of organizations located in G20 countries. This would suggest that ESG information is considered by investors and analysts in their decision-making models regarding the buying and selling of equity stakes.

As mentioned earlier, the level of engagement in socially responsible behaviors can be influenced by numerous factors, which can, in turn, affect its relevance to the market. Studies suggest, for example, that the political environment and corruption can impact the quality of accounting information (Martínez-Ferrero & García-Sánchez, 2015; García-Sánchez & García-Meca, 2017; Hossain & Kryzanowski, 2021). In this sense, the engagement in ESG practices signaled by organizations to their stakeholders may be undermined in environments with high levels of corruption, and thus the relevance of such information tends to decrease.

According to Bao and Lewellyn (2017), corruption is embedded in the beliefs of society and, as such, impacts the social and economic daily life of individuals. Thus, the level of corruption in each country can be a factor influencing the discretionary practices of managers (Bao & Lewellyn, 2017). Moreover, the presence of widespread corruption in society leads individuals to be less likely to restrict behaviors considered unethical or questionable (Bao & Lewellyn, 2017), and they tend to prioritize self-interest over the collective good (Judge et al., 2008).

The literature demonstrates that corruption has direct effects on increasing carbon emissions (Ren et al., 2021), reduces ecological efficiency (Wang et al., 2020), and affects social norms and values, thereby positioning corruption, in part, as a cultural phenomenon (Barr & Serra, 2010; Hoang, 2022; Villoria et al., 2013). Additionally, high levels of corruption impact organizations by acting as a barrier to corporate investment in environmental protection (Yang et al., 2021) and preventing organizations from engaging in actions for social good (Ucar & Staer, 2020). Corruption also encourages tax evasion (Villoria et al., 2013) and reduces corporate transparency (Dass et al., 2016).

The findings of Baldini et al. (2018), obtained from the period of 2005 to 2012, demonstrate that country-level characteristics, such as the political system, considering its legal structure and levels of corruption, as well as labor and cultural systems, significantly affect the level of engagement in ESG practices of the organizations analyzed. However, their evidence points to a heterogeneous impact, as there are reductions or increases in ESG disclosure levels, as well as different impacts on each of its pillars.

Hoang (2022) investigated the impacts of political corruption and carbon risk on ESG information disclosure. Using a sample of companies listed in the United States and state-level corruption data from 2005 to 2018, his findings demonstrate that political corruption affects the disclosure of ESG information. Additionally, his evidence suggests that highly polluting companies benefit from high-corruption environments and are less likely to voluntarily disclose information related to their ESG performance compared to those with lower pollution levels.

Based on the presented context, it is evident that organizations tend to have lower ESG performance levels when located in countries with higher degrees of corruption. Therefore, to contribute to the findings related to this topic, as well as those involving the quality of accounting information, the present study proposes the following research hypothesis:

> H2: The positive relationship between ESG performance and the relevance of companies' accounting information is weakened by the level of corruption in G20 countries.

If H2 is not rejected, it can be inferred that high levels of corruption reduce the ESG performance of organizations, thereby diminishing the relevance of such information for market participants.

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METHODOLOGICAL PROCEDURES

The study population comprised all companies located in the countries that make up the G20, as these countries are considered economically representative. Additionally, the inclusion of the nearly 40 countries in this group is relevant for analyzing distinctions in corruption levels. The sample consists of companies available in the Refinitiv Eikon® database during the collection period, which have all the necessary information for calculating financial variables. The analysis period covers the years 2013 to 2021, due to the limited availability of ESG information before 2013.

Additionally, companies located in countries considered less representative, with fewer than 50 companies, were excluded, as well as those in the financial sector due to their specific characteristics regarding accounting standards. The final sample consisted of 19,077 companies (171,693 observations), located in 31 countries and belonging to 10 sectors, classified according to the Global Industry Classification Standard (GICS). Table 1 presents the study sample by country (Panel A) and by economic sector (Panel B).

It is noteworthy that among the countries in the sample, Japan has the largest number of companies (2,933), representing 15.37% of the total sample, followed by the United States (2,850) and China (2,697), representing 14.94% and 14.14%, respectively. Regarding economic sectors, the energy sector accounts for more than 20% of the total sample (3,912), followed by the Consumer discretionary and real estate sectors, representing 18.08% and 14.91%, respectively.

Table 2 presents the research construct, which includes the description of the variables used, their measurement methods, and the authors who previously utilized them. The information related to the unified ESG score, as well as its individual pillars, and the financial data were collected from the Refinitiv Eikon® database.

The relevance of accounting information is defined as the ability to capture information that affects the value of an organization (Francis & Schipper, 1999). This study utilizes the model of Cormier and Magnan (2016), which considers the market value of shares divided by their book value as the dependent variable. To explain value relevance, the authors consider equity per share (EPS) and return on equity (ROE). Therefore, the market-to-book (MTB) ratio is used as a reference in market valuation.

Table 1. Research sample.

Panel A: Companies by country		
Countries	Companies	%
South Africa	147	0.77
Germany	421	2.21
Saudi Arabia	107	0.56
Argentina	51	0.27
Australia	1,056	5.54
Belgium	87	0.46
Brazil	216	1.13
Bulgaria	84	0.44
Canada	1,688	8.85
China	2,697	14.14
Cyprus	51	0.27
South Korea	1,434	7.52
Denmark	85	0.45
Spain	93	0.49
USA	2,850	14.94
Finland	88	0.46
France	424	2.22
Greece	132	0.69
Holland	70	0.37
India	1,963	10.29
Indonesia	352	1.85
Ireland	60	0.31
Italy	140	0.73
Japan	2,933	15.37
Mexico	82	0.43
Poland	286	1.50
United Kingdom	694	3.64
Romania	58	0.30
Russia	160	0.84
Sweden	296	1.55
Turkey	272	1.43
Total	19,077	100
Panel B: Companies by economic sector classified by GICS		
Sector	Companies	%
Basic Consumption	909	4.76
Discretionary Consumption	3,450	18.08
Energy	3,912	20.51
Real Estate	2,844	14.91
Industrial	1,310	6.87
Materials	1,735	9.09
Health	2,485	13.03
Telecommunications Services	901	4.72
Public Utility Services	477	2.50
Information Technology	1,054	5.52
Total	19,077	100

Note. ESG: environmental, social, and governance; GICS: Global Industry Classification Standard. Source: Research data.

For the ESG scores, a set of ten categories forming the three individual pillars as well as the unified ESG score were considered. According to the Refinitiv Eikon® database report published in February 2021, the unified ESG score is calculated by capturing and computing over 450 ESG measures available at the company level. From these, a subset of the 186 most comparable and material measures in each sector is formed for the overall company assessment. The ESG score corresponds to the sum of the relative weights of each category, normalized to percentages ranging from 0 to 100. In addition to the unified ESG score, the individual scores for each dimension were also considered in sensitivity tests.

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Table 2. Construct for unexpected ESG performance.

Variables	Description and operationalization		Authors
Dependent variable			
Market-to-Book (MTB_{it})	Market value of equity divided by the book value of equity for company i in period t.		Cormier and Magnan (2016)
Independent variables			
EPS_{it}	1 divided by the equity per share of company i in period t.		Cormier and Magnan (2016)
Return on Equity (ROE_{it})	Net income divided by the total equity of company i in period t.		
Envir_Score	Evaluates the impact of a company on environmental ecologies.	Score from 0 to 100: the more items companies disclose, the closer their score will be to 100.	Peng and Isa (2020); Jia and Li (2021)
Social_Score	Evaluates a company's ability to build healthy relationships with its employees, consumers, and the public.		
Gover_Score	Measures a company's governance actions to create long-term shareholder interest.		
ESG Performance (ESG_{it})	Measures the environmental, social, and governance performance and effectiveness of a company, based on data provided by the organizations themselves.		
Corruption Perceptions Index (CPI_{it})	Corruption level in each country for company i in period t.	Scale from 0 to 100: where 0 represents highly corrupt and 100 represents 'very clean.'	Lourenço et al. (2018)
Control variables			
Sector (SETOR_EF)	Company's main activity.	GICS sector code.	Soschinski et al. (2021)
Year (ANO_EF)	Analysis period from 2013 to 2021.	Year dummy.	
Country (PAÍS_EF)	Country in which the company is located.		Prior et al. (2008)

Note. ESG: environmental, social, and governance; EF: fixed effect. Source: Research data.

The level of corruption in each country was considered as the moderating variable. To measure this variable, the Corruption Perceptions Index (CPI) available on the Transparency International website was used, as previously utilized in the research by Lourenço et al. (2018). This index ranks 180 countries and territories by their perceived levels of corruption, according to experts and businesspeople. To facilitate the interpretation of the results, the provided index was transformed into a dummy variable, with companies below the median (with higher corruption levels) assigned a value of 1, and 0 for the others.

For the data analysis, the variables were first winsorized at the 5% level. Then, the Shapiro-Francia normality test was conducted, which showed that the residuals are not normal (Z = 31.398; z < 0.000). However, the normality assumption of multiple linear regression (ordinary least squares — OLS) was relaxed by considering the central limit theorem, as this assumption is typically restricted to samples with fewer than 100 observations (Gujarati, 2006; Stevenson, 1981). To meet the proposed objective, OLS regressions with robust standard errors and fixed effects controls by sector and year were operationalized. The use of robust regressions is justified by the White test, which was significant (P = 20724; p < 0.000), indicating the presence of heteroscedasticity. Additionally, the Variance inflation factor (VIF) and Durbin-Watson tests were conducted to check for multicollinearity and autocorrelation issues, respectively, and indicated that none of these problems were present in the analyzed data. The VIF and Durbin-Watson test values for each analysis model are presented in the respective result tables. The empirical models are presented in Equations 1 and 2:

$$MTB_{it} = \alpha_0 + \beta_1 EPS_{it} + \beta_2 ROE_{it} + \beta_3 ESG_{it} + \beta_4 (ESG * EPS)_{it} + \beta_5 (ESG * ROE)_{it} + \sum SETOR\_EF_{it} + \sum ANO\_EF_{it} + \sum EF\_país_{it} + \varepsilon_{it} \quad (1)$$

$$MTB_{it} = \alpha_0 + \beta_1 EPS_{it} + \beta_2 ROE_{it} + \beta_3 ESG_{it} + \beta_4 CPI_{it} + \beta_5 (ESG * EPS)_{it} + \beta_6 (ESG * ROE)_{it} + \beta_7 (ESG * CPI)_{it} + \beta_8 (CPI * PA)_{it} + \beta_9 (CPI * ROE)_{it} + \beta_{10} (CPI * PA * ESG)_{it} + \beta_{11} (CPI * ROE * ESG)_{it} + \sum EF_{setor_{it}} + \sum EF_{ano_{it}} + \sum EF\_país_{it} + \varepsilon_{it} \quad (2)$$

In general, a positive and significant coefficient for β4 and β5 in Equation 1 supports a positive relationship between companies' ESG performance and value relevance, as measured by the MTB of the analyzed companies. This finding would indicate that engagement in ESG practices has positive effects on the companies' MTB and thus is considered relevant information for the financial market.

Furthermore, a negative and significant coefficient for β10 and β11 in Equation 2 is expected, which would indicate that more corrupt countries weaken the positive relationship between ESG performance and eq-

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uity and earnings information, thereby reducing the relevance of accounting information for companies engaged in ESG practices. This would make it clear that external factors, such as the corruption levels of each country, moderate the existing relationship between MTB and the ESG performance of the analyzed organizations. In addition to the main tests, sensitivity tests were conducted, for which the individual ESG pillar scores were included in the empirical models presented.

ANALYSIS AND DISCUSSION OF RESULTS

Table 3 presents the descriptive analysis of the variables. Panel A includes all companies in the sample, while Panels B and C show companies that do and do not have ESG scores, respectively. The results shown in Panel A demonstrate that, on average, the analyzed companies have negative returns on equity (ROE). Regarding ESG performance, it is noteworthy that the number of companies engaged in such practices increased significantly during the period analyzed in this study (from 1,972 in 2013 to 4,829 in 2021 — data not tabulated).

The Mann-Whitney test was conducted to verify significant differences between the groups in Panels B and C. The test highlighted that, on average, companies engaged in ESG practices have a market value (MTB) approximately twice as high as their book equity. Additionally, it was observed that companies with ESG performance have a positive return on equity (ROE), with the findings indicating that these companies are generating, on average, a 5.9% profit relative to the capital invested.

Regarding corruption scores, there is a significant difference in these scores between companies with and without an ESG score (Panels B and C, respectively). On average, companies engaged in ESG practices are located in countries with lower levels of corruption.

Table 3. Descriptive statistics of the variables.

Panel A — Total Sample					
Variable	Mean	Standard deviation	25th percentile	Median	75th percentile
MTB	1.799	2.333	0.404	0.874	2.019
EPS	1.114	2.516	0.023	0.127	0.698
ROE	-0.009	0.313	-0.035	0.056	0.129
ESG	7.296	18.540	0	0	0
Envir_Score	5.861	17.687	0	0	0
Social_Score	7.475	19.505	0	0	0
Gover_Score	8.334	20.839	0	0	0
CPI	61.732	17.049	41	70	76
Panel B — Companies with ESG score					
Variable	Mean	Standard deviation	25th percentile	Median	75th percentile
MTB	1.755***	2.001	0.537	1.027	2.096
EPS	0.292***	1.114	0.013	0.038	0.149
ROE	0.059***	0.260	0.019	0.097	0.175
ESG	44.472	2.,020	27.374	43.018	61.020
Envir_Score	35.727	28.980	7.111	32.757	60.446
Social_Score	45.559	24.162	25.846	45.524	64.830
Gover_Score	50.794	22.141	33.219	51.518	68.716
CPI	66.137***	15.139	58	71	77
Panel C — Companies without ESG score					
Variable	Mean	Standard deviation	25th percentile	Median	75th percentile
MTB	1.807***	2.392	0.383	0.841	2.001
EPS	1.275***	2.678	0.029	0.176	0.872
ROE	-0.022***	0.321	-0.049	0.049	0.118
ESG	-	-	-	-	-
Envir_Score	-	-	-	-	-
Social_Score	-	-	-	-	-
Gover_Score	-	-	-	-	-
CPI	60.867	17.267	41	69	75

Note. MTB = market-to-book; EPS = 1 divided by equity per share; ROE = return on equity; ESG = unified ESG score; Envir_Score = environmental pillar score; Social_Score = social pillar score; Gover_Score = governance pillar score; CPI = corruption level in each country. Mann-Whitney test significance levels: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. Source: Research data.

The Pearson correlation matrix presented in Table 4 preliminarily indicates that the relevance of accounting information for G20 companies, measured by their market-to-book (MTB) ratio, is positively correlated, at the 5% level, with equity (E). However, when observing the return on equity (ROE), there is a significant negative correlation with the MTB of the analyzed companies.

Furthermore, it is noteworthy that the unified and individual ESG scores are negatively and significantly correlated with the MTB of the analyzed companies.

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This suggests that, in the context studied, socially responsible behaviors may not be recognized by the financial market. However, there is a positive and significant relationship between these practices and the ROE of these companies, indicating that companies with high ESG performance have a higher return on equity.

Regarding the levels of corruption, it is noteworthy that this indicator (CPI) shows negative and significant relationships with the other variables considered in this study. Based on this finding, it can be inferred that among the analyzed companies, those located in countries with higher levels of corruption present accounting information that is less relevant to the market (MTB), as well as lower levels of engagement in ESG practices.

Table 4. Pearson correlation.

Variables	MTB	EPS	ROE	ESG	Envir_Score	Social_Score	Gover_Score	CPI
MTB	1							
EPS	0.184*	1						
ROE	-0.032*	-0.369*	1					
ESG	-0.024*	-0.140*	0.106*	1				
Envir_Score	-0.044*	-0.122*	0.102*	0.932*	1			
Social_Score	-0.016*	-0.136*	0.101*	0.977*	0.901*	1		
Gover_Score	-0.021*	-0.138*	0.099*	0.931*	0.787*	0.867*	1	
CPI	-0.094*	-0.024*	-0.111*	-0.029*	-0.023*	-0.034*	-0.024*	1

Note. MTB = market-to-book; EPS = 1 divided by equity per share; ROE = return on equity; ESG = unified ESG score; Envir_Score = Environmental pillar score; Social_Score = Social pillar score; Gover_Score = Governance pillar score; CPI = corruption level in each country; * significant at the 5% level. Source: Research data.

Table 5 presents the results of the effects of ESG performance on the relevance of accounting information for G20 companies, using the Cormier and Magnan (2016) model. Based on the data presented, it is observed that the model has an explanatory power of 20.26%, with significance at the 1% level. Additionally, it is noteworthy that the explanatory variables for the relevance of accounting information, namely EPS (1/equity per share) and ROE (return on equity), were positive and significant at the 1% level. Thus, it can be inferred that these pieces of information are relevant to the financial markets of G20 countries.

Table 5. Relationship between ESG performance and value relevance.

Variables	Dependent variable: Market-to-book		
	Coefficient	t statistics	VIF
Constant	0.341	7.29	-
EPS	0.189***	51.44	1.69
ROE	0.853***	30.58	1.39
ESG	-0.007***	-25.49	1.42
ESG*EPS	0.003***	6.49	1.09
ESG*ROE	0.012***	9.20	1.25
FE sector, year, and country		Yes	
Observations no.		171,693	
Model sig.		0.000	
R^2		20.26%	
Adjusted R^2		20.24%	
Durbin-Watson		1.880	
Joint F test			
Sector		1,078.60***	
Year		245.55***	
Country		598.96***	

Note. OLS regression with robust standard errors and fixed effects control for sector, year, and country. VIF = variance inflation factor; EPS = 1 divided by equity per share; ROE = return on equity; ESG = unified ESG score. *** significance at the 1% level; ** 5%; * 10%. Value relevance model by Cormier, D. & Magnan, M. L. (2016). The advent of IFRS in Canada: incidence on value relevance. *Journal of International Accounting Research, 15*(3), 113-130. https://doi.org/10.2308/jiar-51404. Source: Research data.

Regarding the information related to ESG performance, the findings indicate a negative and significant relationship, at the 1% level, between the unified ESG score and the market value of the analyzed companies. Based on this finding, it can be inferred that the financial market does not perceive ESG practices in isolation as a relevant factor, or it may even have the opposite effect to what is expected. However, when observing the effects of these practices on MTB when interacting with its explanatory variables (EPS and ROE), a positive

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and significant relationship is noted in both cases. Thus, it can be inferred that stakeholders perceive the equity and profitability accounting information of companies engaged in ESG practices as more relevant for their decision-making.

Table 6 presents the results of the moderating effect of corruption levels on the relationship between ESG performance and the relevance of accounting information. Similar to the previous model, a significance level of 1% is noted, along with an explanatory power of 20.53%.

Table 6. Moderating effect of corruption levels on the value relevance of ESG performance.

Variables	Dependent variable: Market-to-book		
	Coefficient	t statistics	VIF
Constant	0.362	6.59	-
EPS	0.204***	40.43	2.88
ROE	0.799***	20.85	2.25
ESG	-0.012***	-31.43	2.57
CPI	-0.190***	-5.12	9.08
ESG*EPS	0.002**	2.21	3.93
ESG*ROE	0.012***	7.20	2.39
ESG*CPI	0.010***	18.40	2.82
CPI*EPS	-0.049***	-6.73	3.07
CPI*ROE	0.249***	4.66	1.96
CPI*EPS*ESG	0.000	0.68	3.99
CPI*ROE*ESG	-0.003	-1.48	2.40
FE sector, year, and country		Yes	
Observations no.		171,693	
Model sig.		0.000***	
R^2		20.53%	
Adjusted R^2		20.51%	
Durbin-Watson		1.881	
Joint F test			
Sector		1,065.69***	
Year		243.16***	
Country		513.66***	

Note. OLS regression with robust standard errors and fixed effects control for sector, year, and country. VIF = variance inflation factor; EPS = 1 divided by equity per share; ROE = return on equity; ESG = unified ESG score; CPI = corruption level in each country. *** significance at the 1% level; ** 5%; * 10%. Value relevance model by Cormier, D. & Magnan, M. L. (2016). The advent of IFRS in Canada: Incidence on value relevance. *Journal of International Accounting Research*, *15*(3), 113-130. https://doi.org/10.2308/jiar-51404. Source: Research data.

Based on the findings in Table 6, it is observed that the level of corruption (CPI) has a negative and significant relationship with the market value of the analyzed organizations at the 1% level. This result suggests that among the companies analyzed, those located in countries with higher levels of corruption have a lower market value. Additionally, the interaction between the level of corruption and the equity of the organizations (CPI*EPS) shows that a high level of corruption reduces the relevance of the book equity value per share.

When examining the findings related to ESG practices, it is noteworthy that, as in the first model analyzed (Table 5), such engagement, when considered in isolation, does not have relevance for the financial market of G20 countries, or at least it does not contribute to an increase in the market value of companies as expected. However, when ESG performance interacts with the corruption level of these countries (ESG*CPI), a positive and significant relationship at the 1% level was found. These results may suggest that engagement in socially responsible behaviors becomes relevant to the financial market when companies operate in a context with high levels of corruption.

However, the coefficients of interest related to the moderating effect of corruption levels on the relationship between ESG performance (CPI*EPS*ESG and CPI*ROE*ESG) did not present significant results for the context analyzed.

To reinforce the results previously found, two sensitivity tests were conducted, considering the ESG pillars separately. First, the relationship between these pillars and the relevance of accounting information for G20 companies was analyzed (Table 7). Subsequently, the moderating effect of corruption levels on the relationship between each of the ESG pillars and the relevance of accounting information for the countries analyzed was examined (Table 8).

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Based on the findings in Table 7, it is first possible to observe that, consistent with the results in Table 5, the individual scores of the ESG pillars also have a negative relevance for the financial market in the analyzed sample. However, when considering the effects of the individual performance of each pillar on the relevance of accounting information, a positive and significant relationship is noted, similar to the main analysis. Therefore, it can be inferred that, in addition to unified ESG performance, engagement in each of its individual pillars contributes to increasing the relevance of accounting information for G20 companies. These findings align with previous studies (Jia & Li, 2021; Peng & Isa, 2020; Velte, 2017), as they suggest that practices measured for each of the ESG dimensions add value to organizations.

Table 7. Sensitivity test — Relationship between the E, S, and G pillars in value relevance.

Variables	Dependent variable: Market-to-book		
	Envir_Score	Social_Score	Gover_Score
Constant	0.330	0.300	0.364
EPS	0.191***	0.191***	0.188***
ROE	0.853***	0.858***	0.864***
Score	-0.007***	-0.006***	-0.007***
Score*EPS	0.002***	0.002***	0.002***
Score*ROE	0.016***	0.009***	0.009***
FE sector, year and country	Yes	Yes	Yes
Model sig.	0.000***	0.000***	0.000***
R^2	20.26%	20.18%	20.30%
Adjusted R^2	20.24%	20.16%	20.28%
Maximum VIF	1.38	1.68	1.69
Durbin-Watson	1.880	1.880	1.881
Observations no.	171,693	171,693	171,693
Joint F test			
Sector	1,067.62***	1,087.67***	1,072.18***
Year	245.92***	243.83***	245.59***
Country	607.80***	598.28***	593.73***

Note. OLS regression with robust standard errors and fixed effects control for sector, year, and country. VIF = variance inflation factor; EPS = 1 divided by equity per share; ROE = return on equity; Envir_Score = environmental pillar score; Social_Score = social pillar score; Gover_Score = governance pillar score; CPI = corruption level in each country. *** significance at the 1% level; ** 5%; * 10%. Value relevance model by Cormier, D. & Magnan, M. L. (2016). The advent of IFRS in Canada: incidence on value relevance. *Journal of International Accounting Research*, *15*(3), 113-130. https://doi.org/10.2308/jiar-51404. Source: Research data.

Considering the findings from the main analysis (Table 5) as well as the sensitivity test (Table 7), it was determined that engagement in ESG practices, measured both in a unified manner and by individual pillars, contributes to the relevance of accounting information for companies located in G20 countries. Therefore, hypothesis H1 cannot be rejected.

Previous literature has highlighted that stakeholders perceive potential long-term benefits from organizations' engagement in socially responsible practices (Dhaliwal et al., 2011; El Ghoul et al., 2011; Lee & Faff, 2009). The findings of this study, related to the ESG performance of companies in G20 countries, contribute to the literature by demonstrating an increase in the market value of the analyzed organizations as one of these potential benefits. Additionally, the results suggest that such disclosures, when made with high quality, can be considered a signal of the organization's transparency, which is reflected in its market performance.

The findings in Table 8 also reinforce those from the main analysis (Table 6), where negative relevance was identified for each of the ESG pillars as well as for the level of corruption in the analyzed organizations. However, when these indicators interact with the explanatory variables of accounting information relevance, it is observed that ESG performance, considering its individual pillars, is positively associated with the market value of the analyzed sample. Additionally, the level of corruption has ambiguous effects on the relevance of the information: the higher the level of corruption, the lower the relevance of the organizations' equity (CPI*EPS), while there is an inverse effect concerning return on equity (CPI*ROE).

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Table 8. Moderating effect of corruption levels on the value relevance of E, S, and G performance.

Variables	Dependent variable: Market-to-book		
	Envir_Score	Social_Score	Gover_Score
Constant	0.354	0.332	0.395
EPS	0.209***	0.207***	0.202***
ROE	0.795***	0.804***	0.811***
Score	-0.011***	-0.010***	-0.011***
CPI	-0.133***	-0.199***	-0.185***
Score*EPS	0.002*	0.001*	0.001***
Score*ROE	0.015***	0.009***	0.008***
Score*CPI	0.009***	0.010***	0.009***
CPI*EPS	-0.053***	-0.050***	-0.047***
CPI*ROE	0.250***	0.255***	0.251***
CPI*EPS*score	0.000	0.001	0.000
CPI*ROE*score	-0.001	-0.003	-0.002
FE sector and year	Yes	Yes	Yes
Model sig.	0.000***	0.000***	0.000***
R^2	20.49%	20.46%	20.57%
Adjusted R^2	20.46%	20.43%	20.55%
Maximum VIF	8.37	9.08	9.24
Durbin-Watson	1.880	1.880	1.882
Observations no.	171,693	171,693	171,693
Joint F test			
Sector	1,055.89***	1,074.02***	1,058.89***
Year	246.18***	241.89***	242.05***
Country	520.58***	512.69***	509.25***

Note. OLS regression with robust standard errors and fixed effects control for sector, year, and country. VIF = variance inflation factor; EPS = 1 divided by equity per share; ROE = return on equity; Envir_Score = environmental pillar score; Social_Score = social pillar score; Gover_Score = governance pillar score; CPI = corruption level in each country. *** significance at the 1% level; ** 5%; * 10%. Value relevance model by Cormier, D. & Magnan, M. L. (2016). The advent of IFRS in Canada: Incidence on value relevance. *Journal of International Accounting Research*, *15*(3), 113-130. https://doi.org/10.2308/jiar-51404. Source: Research data.

Furthermore, it is observed that the interaction between corruption levels and the three individual pillars also has a positive and significant relationship. This suggests that ESG performance, whether considered broadly through its unified score or by its individual pillars, is relevant to the financial markets of G20 countries with high levels of corruption. These findings align with Baldini et al. (2018) and Hoang (2022), as significant effects of country-level characteristics, such as corruption levels, on the engagement in ESG practices by the analyzed organizations were found. However, regarding the moderation of corruption levels in the relationship between the ESG pillars and the relevance of accounting information, no significant results were found, leading to the rejection of hypothesis H2.

Based on the literature's considerations regarding the impacts of corruption levels on engagement in ESG practices (Bao & Lewellyn, 2017; Hossain & Kryzanowski, 2021), this research aimed to analyze whether factors external to organizations would have moderating effects on the relationship between ESG performance and the relevance of accounting information. The findings suggest that, in the context analyzed, there is a preference for addressing collective interest over individual interest, as companies in highly corrupt environments tend to be more engaged in ESG practices (ESG*CPI), conflicting with the findings of Judge et al. (2008). However, this engagement does not appear to be sufficient to cause significant effects on the relevance of accounting information, as measured by the market value of the companies.

CONCLUDING REMARKS

This study aimed to analyze the moderating effect of corruption on the relationship between ESG performance and the relevance of accounting information for companies in G20 countries. To achieve this, a descriptive, documentary, and quantitative research was conducted with a sample of 19,077 companies located in 31 G20 countries during the years 2013 to 2021, resulting in a total of 171,693 observations.

In the first stage of the analysis, the relationship between ESG performance and the relevance of accounting information for these organizations was examined. The analysis indicated that ESG performance on its own does not hold relevance for the financial markets of these countries, as it was negatively associated with the market value of the organizations. However, when interacting with indicators such as equity per share and return on equity, positive relationships with the market value of these organizations were observed, indicating that this information is relevant to market stakeholders. Based on the analysis conducted, it is concluded that ESG performance, whether measured by its unified score or its individual pillars, contributes to the relevance of accounting information for companies

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located in G20 countries, leading to the non-rejection of hypothesis H1. Thus, it can be concluded that ESG information, whether environmental-, social-, or governance-related, enhances the relevance of accounting information for market participants.

In the second stage, the moderating effect of corruption levels on the relationship observed in the first hypothesis of the study was analyzed. The findings from this analysis indicated that corruption does not significantly weaken the effects of ESG performance on the relevance of accounting information, leading to the rejection of hypothesis H2. These results suggest that, within the context of the analyzed countries, the level of corruption does not affect the impact of ESG practices on the relevance of equity and return on equity information for the market.

This study contributes to the literature by providing evidence on the effects of ESG practices on the relevance of accounting information within a broader context, specifically among G20 countries. Additionally, it contributes by analyzing the moderating effect of corruption levels on the relationship between organizations' ESG performance and the relevance of their accounting information. By doing so, this research seeks to expand existing empirical evidence through the analysis of value creation for shareholders stemming from socially responsible activities. Furthermore, it adds value by considering the context in which the analyzed organizations operate, allowing for an understanding of the potential effects that a highly corrupt environment may have on the relevance of ESG practices for financial market participants.

As practical contributions, this study's results help companies understand that ESG practices are relevant to capital market participants, as they affect market value and therefore require greater management attention. The findings have implications for shareholders in guiding their investment decisions, as well as for managers in making decisions regarding ESG information disclosure. E-Vahdati et al. (2023) emphasize that such information can be considered in future investment decisions by stakeholders, as it may impact shareholder wealth.

Among the limitations of this study, the exclusive use of the Cormier and Magnan (2016) model to measure the relevance of accounting information stands out. As a result, other models available in the literature may yield different results by capturing the relevance of this information in the context analyzed in this study. Additionally, the measurement of ESG performance using the score available in the Refinitiv Eikon® database may limit the number of observations.

Considering these limitations, future research could opt to use other models for measuring the relevance of accounting information, such as the Francis and Schipper (1999) model or the Ohlson (1995) model, for example. Regarding ESG performance, additional measures could be explored to complement the findings of this study, given the limited number of companies that disclose ESG information through the Refinitiv Eikon® database. Thus, future studies might address other perspectives on ESG practices, such as systemic sustainability, regenerative sustainability, weak or strong sustainability, and the paradoxical approach.

Finally, it is suggested to expand the investigation of the effects of ESG performance on the relevance of accounting information across various contexts, as well as to explore potential moderating effects in this relationship caused by external factors to organizations, such as national culture.

REFERENCES

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

Alipour, M., Ghanbari, M., Jamshidinavid, B., & Taherabadi, A. (2019). The relationship between environmental disclosure quality and earnings quality: A panel study of an emerging market. *Journal of Asia Business Studies, 13*(2), 326-347. https://doi.org/10.1108/JABS-03-2018-0084

Arghyrou, M. G. (2010). *Corruption as a form of extreme individualism: An economic explanation based on geography and climate conditions* (No. E2010/8). Cardiff Economics Working Papers. https://www.econstor.eu/bitstream/10419/65823/1/637460588.pdf

Baldini, M., Maso, L. D., Liberatore, G., Mazzi, F., & Terzani, S. (2018). Role of country-and firm-level determinants in environmental, social, and governance disclosure. *Journal of Business Ethics, 150*(1), 79-98. https://link.springer.com/article/10.1007%2Fs10551-016-3139-1

Bao, R., & Lewellyn, K. (2017). Corruption in China-A review. *Modern China Studies, 24*(2), 158.

Barbosa, I. de S., & Klann, R. C. (2023). Efeitos do desempenho ambiental, social e de governança na relevância das informações contábeis de empresas brasileiras. *Revista Contemporânea de Contabilidade, 20*(54), Artigo 54. https://doi.org/10.5007/2175-8069.2023.e86044

Barr, A., & Serra, D. (2010). Corruption and culture: An experimental analysis. *Journal of Public economics, 94*(11-12), 862-869. https://doi.org/10.1016/j.jpubeco.2010.07.006

Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of business ethics, 97*, 71-86. https://www.jstor.org/stable/40929374

Chih, H. L., Shen, C. H., & Kang, F. C. (2008). Corporate social responsibility, investor protection, and earnings management: Some international evidence. *Journal of Business Ethics, 79*(1-2), 179-198. https://link.springer.com/article/10.1007/s10551-007-9383-7

Coleman, L. (2011). Losses from failure of stakeholder sensitive processes: Financial consequences for large us companies from breakdowns in product, environmental, and accounting standards. *Journal of Business Ethics, 98*(2), 247-258. https://doi.org/10.1007/s10551-010-0544-8

Connelly, B. L. Certo, S. T., Ireland, R. D. & Reutzel, C. R. (2011) Signaling theory: A review and assessment. *Journal of Management*, 37(1), 39-67. https://doi.org/10.1177/0149206310388419

Cordazzo, M., Bini, L., & Marzo, G. (2020). Does the EU Directive on non-financial information influence the value relevance of ESG disclosure? Italian evidence. *Business Strategy and the Environment, 29*(8), 3470-3483. https://doi.org/10.1002/bse.2589

Cormier, D. & Magnan, M. L. (2016). The advent of IFRS in Canada: incidence on value relevance. *Journal of International Accounting Research, 15*(3), 113-130. https://doi.org/10.2308/jiar-51404

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Dass, N., Nanda, V., & Xiao, S. C. (2016). Public corruption in the United States: Implications for local firms. *The Review of Corporate Finance Studies, 5*(1), 102-138. http://dx.doi.org/10.2139/ssrn.2709643

Daugaard, D. (2020). Emerging new themes in environmental, social and governance investing: A systematic literature review. *Accounting and Finance*, *60*(2), 1501-1530. https://doi.org/10.1111/acfi.12479

Degenhart, L., Mazzuco, M. S. A. & Klann, R. C. (2017). The relevance of accounting information and the corporate social responsibility of Brazilian companies. *BASE - Revista de Administração e Contabilidade da Unisinos*, *14*(3), 157-168. https://revistas.unisinos.br/index.php/base/article/view/base.2017.143.01

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary non-financial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review*, *86*(1), 59-100. https://doi.org/10.2308/accr.00000005

Durand, R., Paugam, L., & Stolowy, H. (2019). Do investors actually value sustainability indices? Replication, development, and new evidence on CSR visibility. *Strategic Management Journal*, *40*(9), 1471-1490. https://doi.org/10.1002/smj.3035

Dunn, K. & Harness, D. (2018). Communicating corporate social responsibility in a social world: the effects of company-generated and user-generated social media content on CSR attributions and skepticism. *Journal of Marketing Management*, 34(17-18), 1503-1529. http://doi.org/10.1080/0267257X.2018.1536675

Dyllick, T., & Muff, K. (2016). Clarifying the meaning of sustainable business: Introducing a typology from business-as-usual to true business sustainability. *Organization & Environment*, *29*(2), 156-174. https://doi.org/10.1177/1086026615575176

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

E-Vahdati, S., Wan-Hussin, W. N., & Mohd Ariffin, M. S. (2023). The value relevance of ESG practices in Japan and Malaysia: Moderating roles of CSR award, and former CEO as a board chair. *Sustainability*, *15*(3), 2728. https://doi.org/10.3390/su15032728

Francis, J. & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, 37(2), 319-352. https://doi.org/10.2307/2491412

Friede, G., Busch, T. & Bassen, A. (2015). ESG financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233. https://doi.org/10.1080/20430795.2015.1118917

García-Sánchez, I. M., & García-Meca, E. (2017). CSR engagement and earnings quality in banks. The moderating role of institutional factors. *Corporate Social Responsibility and Environmental Management*, *24*(2), 145-158. https://doi.org/10.1002/csr.1405

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

Grougiou, V., Dedoulis, E., & Leventis, S. (2016). Corporate social responsibility reporting and organizational stigma: The case of "sin" industries. *Journal of Business Research*, *69*(2), 905-914. https://doi.org/10.1016/j.jbusres.2015.06.041

Gujarati, D. N. (2006). *Econometria básica*. Elsevier.

Hahn, T., & Tampe, M. (2021). Strategies for regenerative business. *Strategic Organization*, *19*(3), 456-477. https://doi.org/10.1177/1476127020979228

Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, *127*, 297-316. https://doi.org/10.1007/s10551-014-2047-5

Hassel, L., Nilsson, H. & Nyquist, S. (2005). The value relevance of environmental performance. *European Accounting Review*, *14*(1), 41-61. https://doi.org/10.1080/0963818042000279722

Hoang, K. (2022). Silent but deadly: Political corruption and voluntary ESG disclosure in the United States. *Managerial and Decision Economics*, *43*(7), 2775-2793. https://doi.org/10.1002/mde.3562

Hossain, A. T., & Kryzanowski, L. (2021). Political corruption and corporate social responsibility (CSR). *Journal of Behavioral and Experimental Finance*, *31*, 100538. https://doi.org/10.1016/j.jbef.2021.100538

Huang, X. B., & Watson, L. (2015). Corporate social responsibility research in accounting. *Journal of Accounting Literature, 34*, 1-16. https://doi.org/10.1016/j.acclit.2015.03.001

Iazzolino, G., Bruni, M. E., Veltri, S., Morea, D., & Baldissarro, G. (2023). The impact of ESG factors on financial efficiency: An empirical analysis for the selection of sustainable firm portfolios. *Corporate Social Responsibility and Environmental Management*, *30*(4), 1917-1927. https://doi.org/10.1002/csr.2463

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, *43*, 834-864. https://doi.org/10.1057/jibs.2012.26

Jia, J., & Li, Z. (2021). Corporate sustainability, earnings persistence and the association between earnings and future cash flows. *Accounting & Finance, 62* (1), 299-336. https://doi.org/10.1111/acfi.12791

Judge, W. Q., Douglas, T. J., & Kutan, A. M. (2008). Institutional antecedents of corporate governance legitimacy. *Journal of Management*, *34*(4), 765-785. http://doi.org/10.1177/0149206308318615

Krishnamurti, C., Shams, S., & Velayutham, E. (2018). Corporate social responsibility and corruption risk: A global perspective. *Journal of Contemporary Accounting & Economics, 14*(1), 1-21. https://doi.org/10.1016/j.jcae.2018.02.002

Lambert-Mogiliansky, A., Majumdar, M., & Radner, R. (2008). Petty corruption: A game-theoretic approach. *International Journal of Economic Theory*, *4*(2), 273-297. https://doi.org/10.1111/j.1742-7363.2008.00078.x

Landrum, N. E. (2018). Stages of Corporate Sustainability: Integrating the Strong Sustainability Worldview. *Organization and Environment*, *31*(4), 287-313. http://doi.org/10.1111/j.1742-7363.2008.00078.x

Lee, D. D., & Faff, R. W. (2009). Corporate sustainability performance and idiosyncratic risk: A global perspective. *Financial Review*, *44*(2), 213-237. http://doi.org/10.1111/j.1540-6288.2009.00216.x

Levy, H., & Lazarovich-Porat, E. (1995). Signaling theory and risk perception: An experimental study. *Journal of Economics and Business, 47*(1), 39-56. https://doi.org/10.1016/0148-6195(94)00022-6

Lopatta, K., Jaeschke, R., Tchikov, M., & Lodhia, S. (2017). Corruption, corporate social responsibility and financial constraints: International firm-level evidence. *European Management Review*, *14*(1), 47-65. https://doi.org/10.1111/emre.12098

Lourenço, I. C., Rathke, A., Santana, V., & Branco, M. C. (2018). Corruption and earnings management in developed and emerging countries. *Corporate Governance*, *18*(1). 35-51. https://doi.org/10.1108/CG-12-2016-0226

Martínez-Ferrero, J., Banerjee, S., & García-Sánchez, I. M. (2016). Corporate social responsibility as a strategic shield against costs of earnings management practices. *Journal of Business Ethics*, *133*, 305-324. https://doi.org/10.1007/s10551-014-2399-x

Martínez-Ferrero, J., & García-Sánchez, I. M. (2015). Is corporate social responsibility an entrenchment strategy? Evidence in stakeholder protection environments. *Review of Managerial Science*, *9*, 89-114. https://doi.org/10.1007/s11846-014-0120-1

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of management review*, *26*(1), 117-127. https://doi.org/10.2307/259398

Melewar, T. C., Foroudi, P., Gupta, S., Kitchen, P. J. & Foroudi, M. M. (2017). Integrating identity, strategy and communications for trust, loyalty and commitment. *European Journal of Marketing,* 51(3), 572-604. http://doi.org/10.1108/EJM-08-2015-0616

Moskowitz, M. (1972). Choosing socially responsible stocks. *Business and Society Review*, 1, 71–75.

Neu, D., Everett, J., Rahaman, A. S., & Martinez, D. (2013). Accounting and networks of corruption. *Accounting, Organizations and Society*, *38*(6-7), 505-524. https://doi.org/10.1016/j.aos.2012.01.003

Ng, A. C., & Rezaee, Z. (2015). Business sustainability performance and cost of equity capital. *Journal of Corporate Finance*, *34*, 128-149. https://doi.org/10.1016/j.jcorpfin.2015.08.003

Ohlson, J. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research, 11*(2), 661-687. https://doi.org/10.1111/j.1911-3846.1995.tb00461.x

Peng, L. S. & Isa, M. (2020). Environmental, social and governance (Esg) practices and performance in shariah firms: Agency or stakeholder theory? *Asian Academy of Management Journal of Accounting and Finance,* 16(1), 1–34. http://doi.org/10.21315/aamjaf2020.16.1.1

Prior, D., Surroca, J., & Tribó, J. A. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corporate governance: An international review*, *16*(3), 160-177. https://doi.org/10.1111/j.1467-8683.2008.00678.x

Ren, Y. S., Ma, C. Q., Apergis, N., & Sharp, B. (2021). Responses of carbon emissions to corruption across Chinese provinces. *Energy Economics*, *98*, 105241. https://doi.org/10.1016/j.eneco.2021.105241

Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. *Journal of Accounting Literature*, *36*(1), 48-64. https://doi.org/10.1016/j.acclit.2016.05.003

Rezaee, Z., Dou, H., & Zhang, H. (2020). Corporate social responsibility and earnings quality: Evidence from China. *Global Finance Journal*, *45*(4). http://dx.doi.org/10.1016/j.gfj.2019.05.002

Salehi, M., Dashtbayaz, M. & Khorashadizadeh, S. (2018). Corporate social responsibility and future financial performance: Evidence from Tehran Stock Exchange. *EuroMed Journal of Business, 13*(3), 351-371. http://doi.org/10.1108/EMJB-11-2017-0044

Şerban, R. A., Mihaiu, D. M., & Ţichindelean, M. (2022). Environment, social, and governance score and value added impacts on market capitalization: A sectoral-based approach. *Sustainability*, *14*(4), 2069. http://doi.org/10.3390/su14042069

Soschinski, C. K., Giordani, M. S., Klann, R. C. & Brizollia, M. M. B. (2021). Influence of national culture on corporate social responsibility. *Cross-Cultural Management Journal, 23*(1), 1-15. https://ideas.repec.org/a/cmj/journl/y2021i1p71-88.html

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review, 92*(3), 434-459. https://www.jstor.org/stable/3083350

Stevenson, W. J. (1981). *Estatística aplicada à administração*. Harper.

Taliento, M., Favino, C., & Netti, A. (2019). Impact of environmental, social, and governance information on economic performance: Evidence of a corporate 'sustainability advantage' from Europe. *Sustainability, 11*(6), 1738. http://doi.org/10.3390/su11061738

Ucar, E., & Staer, A. (2020). Local corruption and corporate social responsibility. *Journal of Business Research*, *116*, 266-282. https://doi.org/10.1016/j.jbusres.2020.05.012

Uyar, A., Karaman, A. S., & Kilic, M. (2020). Is corporate social responsibility reporting a tool of signaling or greenwashing? Evidence from the worldwide logistics sector. *Journal of Cleaner Production*, *253*, 119997. https://doi.org/10.1016/j.jclepro.2020.119997

Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility, 80*(2), 169-178. https://doi.org/10.1108/JGR-11-2016-0029

Velte, P. (2019). Do CEO incentives and characteristics influence corporate social responsibility (CSR) and vice versa? A literature review. *Social Responsibility Journal, 16*(8), 1293-1323. https://doi.org/10.1108/SRJ-04-2019-0145

Villoria, M., Van Ryzin, G. G., & Lavena, C. F. (2013). Social and political consequences of administrative corruption: A study of public perceptions in Spain. *Public Administration Review*, *73*(1), 85-94. https://doi.org/10.1111/j.1540-6210.2012.02613.x

Wang, S., Zhao, D., & Chen, H. (2020). Government corruption, resource misallocation, and ecological efficiency. *Energy Economics*, *85*, 104573. https://doi.org/ 10.1016/j.eneco.2019.104573

Xu, S., Chen, X., Li, A., & Xia, X. (2020). Disclosure for whom? Government involvement, CSR disclosure and firm value. *Emerging Markets Review*, *44*, 100717. https://doi.org/10.1016/j.ememar.2020.100717

Yang, C., Zhang, W., Sheng, Y., & Yang, Z. (2021). Corrupção e esforços firmes na proteção ambiental: evidências de um choque político. *Jornal de Finanças da Bacia do Pacífico, 65*, 101465. https://doi.org/10.1016/j.pacfin.2020.101465

Zhang, Q., Cao, M., Zhang, F., Liu, J. & Li, X. (2020). Effects of corporate social responsibility on customer satisfaction and organizational attractiveness: A signaling perspective. *Business Ethics: A European Review, 29*, 20-29. https://doi.org/10.1111/beer.12243

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