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Original Article

Environmental, Social, and Governance (ESG): a bibliometric review of the current corporate context

Environmental, Social and Governance (ESG): uma revisão bibliométrica no contexto corporativo atual

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ABSTRACT

Objective: This study aims to analyze the evolution and current state of academic research on Environmental, Social, and Governance (ESG) in the corporate context through a bibliometric review.
Methodology: The study adopts a bibliometric approach based on the integration of data obtained from the Web of Science and Scopus databases. EndNote, Bibliometrix, and CiteSpace were used to organize, tabulate, and analyze the data. A total of 1,733 publications related to ESG were identified and analyzed.
Results: The findings indicate that academic interest in ESG has grown exponentially in recent years. However, empirical evidence regarding the impact of ESG practices on corporate performance remains inconclusive. Scopus contained a larger number of publications than Web of Science, although both databases index journals with significant impact factors. Two major research clusters were identified: one focused on literature reviews and another comprising empirical studies that examine the relationship between ESG performance and financial returns, primarily grounded in Agency Theory and Stakeholder Theory.
Practical implications: The study contributes to understanding the development of ESG research by mapping the major research streams, methodological approaches, and theoretical foundations found in the literature.
Originality/Limitations: The lack of standardization in ESG metrics, data sources, and theoretical approaches limits comparability across studies. Furthermore, bibliometric analysis does not allow an in-depth examination of theoretical and empirical aspects, indicating the need for complementary qualitative methods or systematic literature reviews.

Keywords: ESG – Environmental, Social, and Governance; Bibliometrics

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RESUMO

Objetivo: Este estudo tem como objetivo analisar a evolução e o estado atual da pesquisa acadêmica sobre Environmental, Social, and Governance (ESG) no contexto corporativo por meio de uma revisão bibliométrica.
Metodologia: O estudo adota uma abordagem bibliométrica baseada na integração de dados obtidos nas bases Web of Science e Scopus. Os softwares EndNote, Bibliometrix e CiteSpace foram utilizados para organizar e analisar os dados. Ao todo, foram identificadas e analisadas 1.733 publicações relacionadas ao ESG.
Resultados: Os resultados indicam que o interesse acadêmico em ESG cresceu exponencialmente nos últimos anos. No entanto, as evidências empíricas sobre o impacto das práticas ESG no desempenho corporativo permanecem inconclusivas. A base Scopus apresentou um número maior de publicações do que a Web of Science, embora ambas indexem periódicos com fatores de impacto relevantes. Foram identificados dois principais grupos de pesquisa: um voltado para revisões de literatura e outro composto por estudos empíricos que investigam a relação entre o desempenho ESG e os retornos financeiros, fundamentados principalmente na Teoria da Agência e na Teoria dos Stakeholders.
Implicações práticas: O estudo contribui para a compreensão do desenvolvimento das pesquisas sobre ESG ao mapear as principais linhas de pesquisa, abordagens metodológicas e fundamentos teóricos presentes na literatura.
Originalidade / Limitações: A ausência de padronização nas métricas ESG, nas fontes de dados e nas abordagens teóricas limita a comparabilidade entre os estudos. Além disso, a análise bibliométrica não permite um exame aprofundado dos aspectos teóricos e empíricos, indicando a necessidade de métodos qualitativos complementares ou de revisões sistemáticas da literatura.

Palavras-chave: ESG - environmental, social and governance; Bibliometria

1 INTRODUCTION

Environmental, social, and governance (ESG) practices have gained increasing prominence in the global corporate landscape in recent years, shaping business strategies and influencing investment decisions. Against this backdrop, it is necessary to define the ESG concept adopted in this study.

Following the approach adopted by Maaloul et al. (2023), this study uses the term ESG in a broad sense, encompassing related sustainability concepts such as corporate social responsibility (CSR), corporate responsibility, socially responsible investment (SRI), and sustainability, among others.

According to Atchabahian (2024), ESG encompasses voluntary corporate initiatives and initiatives driven by national regulations or sectoral self-regulation aimed at embedding

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global sustainability principles through concrete actions across the environmental, social, and governance dimensions. This involves a proactive, risk-based approach.

For ESG practices to be effectively implemented, governmental and political support is essential to reduce the costs, risks, and uncertainties associated with their adoption. Such support can help ensure stable profit margins for companies committed to fulfilling their ESG responsibilities (Fei et al., 2024).

Considering ESG factors can improve both environmental and financial performance, particularly with respect to investment outcomes and long-term value creation. Understanding the influence of ESG on business performance is crucial, as research indicates that investors and managers rely on ESG policies to manage risks and improve risk-adjusted returns (Ahmad et al., 2023).

Beloskar and Rao (2022) highlight that investor interest in SRI has grown significantly in recent years, particularly during the financial crisis triggered by the COVID-19 pandemic. These investments are evaluated based on ESG criteria, which provide valuable insights into corporate risk exposure and risk management strategies.

Beyond documenting this rapid growth, recent review studies also indicate that ESG research remains fragmented in terms of analytical scope, databases used, and theoretical perspectives. Ahmad et al. (2023) observed that the annual number of ESG-related publications has steadily increased since 2018. However, many developing countries remain in the early stages of ESG adoption compared with developed countries, where these issues began to receive attention earlier.

In this context, Wan et al. (2023) applied bibliometric analysis to trace the evolution of ESG research. Their findings indicate that ESG is increasingly viewed as a comprehensive framework for sustainability assessment, with growing scholarly attention devoted to the interplay among its three dimensions—environmental, social, and governance—and their collective influence on business risk, cost of capital, corporate performance, and firm value.

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Similarly, Ahmad et al. (2023), through a systematic review of more than 80 articles, found that researchers tend to publish in journals indexed in databases such as Scopus, particularly in the fields of Business, Finance, Economics, and Environmental Studies. Their findings also highlight the need for further research on ESG factors in the corporate context to improve understanding and support future policy development.

More recently, an increasing number of companies evaluated according to ESG criteria have been included in the coverage of data providers such as Bloomberg, MSCI, and Refinitiv. This trend reflects the growing adoption of socially responsible practices and increasing demands for transparency in ESG reporting, accompanied by greater media attention (Beloskar & Rao, 2022; Burke, 2022).

Although several studies have applied bibliometric analysis to ESG research, the existing evidence remains fragmented because previous studies differ substantially regarding database selection, sectoral scope, and analytical focus. For example, Au et al. (2023) and Wan et al. (2023) relied exclusively on the Web of Science (WoS) database, focusing specifically on the corporate sector. In contrast, Bosi et al. (2022) and De Giuli et al. (2023) used only Scopus without restricting their analyses to the corporate context, whereas Putzer and Posza (2024) focused on the tourism sector.

Ahmad et al. (2023) combined multiple databases but adopted a meta-analytical approach rather than a comprehensive bibliometric analysis. Consequently, there is still no integrated bibliometric assessment that combines the two largest multidisciplinary scientific databases—WoS and Scopus—to examine the intellectual structure, scientific evolution, and emerging research directions of ESG in the corporate context. This limitation restricts a broader understanding of how the field has evolved and where future theoretical and empirical advances are most needed. Furthermore, Maaloul et al. (2023) emphasize that the role of ESG reporting for investors, creditors, and other stakeholders remains a matter of debate in the literature.

This study therefore aims to address this gap by analyzing publications indexed in both WoS and Scopus through a bibliometric approach. By integrating these two

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major multidisciplinary databases, the study seeks to provide a more comprehensive overview of the intellectual structure of the field, identify emerging research trends, and propose a future research agenda.

This study addresses the following research questions: (RQ1) How has ESG research evolved in the corporate context? (RQ2) What intellectual structures and theoretical foundations characterize the field? (RQ3) What emerging themes and future research directions can be identified through integrated bibliometric analysis?

The remainder of this article is organized as follows. Section 2 presents the theoretical background by reviewing the evolution of ESG research and previous bibliometric studies in the corporate context. Section 3 describes the methodological procedures adopted for the bibliometric analysis. Section 4 presents and discusses the main findings, including the evolution of scientific production, the intellectual structure of the field, and the proposed future research agenda. Finally, Section 5 summarizes the main conclusions, contributions, limitations, and opportunities for future research.

2 THEORETICAL FRAMEWORKS

Traditionally, maximizing shareholder wealth has been viewed as the primary objective of companies. However, from a stakeholder perspective, it is argued that other parties—such as employees, suppliers, customers, communities, banks, and regulators—are also integral to the corporate ecosystem (Li et al., 2018). In light of these diverse interests, increasing attention has been given to discussions regarding the role companies should play in the economy, the core values guiding organizational behavior, and how business should be conducted (Stellner et al., 2015).

Over the past 25 years, the number of companies measuring and disclosing environmental data (e.g., carbon emissions, water consumption, waste generation), social data (e.g., employee, product, and customer-related information), and governance data (e.g., political lobbying, anti-corruption measures, and board diversity) has grown exponentially—collectively known as ESG data (Alareeni & Hamdan, 2020; Amel-Zadeh & Serafeim, 2018; Khan, 2019).

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The ESG concept, now recognized as a global phenomenon, was first introduced in the 2004 United Nations Principles for Responsible Investment report, which urged investors to consider ESG factors as a core component of their decision-making processes (Yoon et al., 2018). Since then, ESG has been widely adopted by companies and capital market participants seeking to integrate sustainable and socially responsible practices into their operations and to identify investment opportunities aligned with their sustainability agendas (Wong et al., 2022; Yoon et al., 2018; Zahid et al., 2024).

In this context, De Giuli et al. (2023), in their bibliometric study, found that ESG research spans a range of approaches, with a notable focus on ESG-related risks and their implications for asset allocation, as well as the effects of ESG performance on firm valuation. However, the authors also observed a lack of dominant themes or a cohesive scholarly network in the field. This fragmentation poses challenges for advancing the discipline and limits the development of robust theoretical and practical contributions for organizations and policymakers.

Supporting these findings, Au et al. (2023) identified five major research clusters within ESG literature: (1) ESG activities and their impact on economic performance; (2) ESG reporting and the disclosure of non-financial information; (3) ESG performance and corporate sustainability; (4) ESG attributes and the investment market; and (5) ESG practices and board diversity.

Beyond bibliometric studies, various empirical investigations have underscored the growing importance of ESG factors in investor decision-making and corporate financial performance. Maiti (2021) observed that portfolios guided by ESG criteria tend to outperform traditional portfolios based on size and value metrics. Similarly, Beloskar and Rao (2022) reported that, while socially responsible investments (SRIs) in Indian companies may yield lower returns under normal conditions, they offer greater resilience during periods of economic crisis. Additional studies, including those by Kim et al. (2022) and Siwei and Chalermkiat (2023), support a positive relationship between ESG performance and indicators such as market value, lower cost of debt, and enhanced outcomes in mergers and acquisitions.

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However, some research has revealed mixed or even negative associations between ESG performance and financial outcomes, depending on variables such as sector, country, and the specific financial indicators assessed (e.g., return on assets [ROA], return on equity [ROE], Tobin's Q, or market value) (Agarwal et al., 2023; Gutiérrez-Ponce & Wibowo, 2023; Soesetio et al., 2024; Wang et al., 2024). Notably, Agarwal et al. (2023) found that when competition was introduced as a moderating variable, the ESG–performance relationship became both significant and positive. Similarly, Soesetio et al. (2024) reported that internationalization moderated this relationship. These divergences are often attributed to the lack of standardized ESG metrics, which hampers precise comparisons and broader analytical consistency (Rahmaniati & Ekawati, 2024; Said & ElBannan, 2024).

Furthermore, Farooq (2015) noted that some stock market investors view corporate social responsibility (CSR) initiatives as superfluous expenses. In line with this view, Soesetio et al. (2024) suggested that ESG-related expenditures may be perceived as an inefficient allocation of resources, lost opportunities, or excessive investment—ultimately diminishing shareholder value.

The literature also highlights ESG's role in fostering green technological innovation, particularly through spillover effects: when one company improves its ESG performance, others in the same sector may follow suit to preserve or enhance competitiveness (Zhu & Yang, 2024).

Additionally, effective ESG practices contribute to a stronger corporate reputation, increased transparency, and improved stakeholder relationships, reinforcing ESG as a strategic pillar for sustainable business operations (Ismail & Azman, 2024; Maaloul et al., 2023).

Theoretical studies examining ESG in the corporate context have been predominantly grounded in Agency Theory and Stakeholder Theory. Agency Theory, proposed by Jensen and Meckling (1976), assumes that conflicts of interest may arise between shareholders (principals) and managers (agents), leading to opportunistic

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behavior and information asymmetry. Within this framework, firms with poor ESG performance are more likely to withhold unfavorable information, thereby increasing the risk of stock price crashes (Feng, Goodell, & Shen, 2022).

In contrast, Stakeholder Theory, introduced by Freeman (1984), argues that firms should balance the interests of multiple stakeholders—including shareholders, employees, customers, suppliers, governments, and local communities—rather than focusing exclusively on maximizing shareholder wealth. Accordingly, ESG practices can be viewed as mechanisms for strengthening relationships with these stakeholders while promoting long-term sustainable value creation. Although some studies argue that ESG initiatives may reduce shareholder returns because of the costs associated with their implementation (Muhamd et al., 2021), more recent evidence suggests that sustainable corporate performance depends on balancing the economic interests of shareholders with the expectations of a broader group of stakeholders (Lee & Isa, 2024).

3 METHODOLOGY

This study is grounded in a bibliometric analysis of the scientific literature on ESG within the corporate context. According to Baptista and Campos (2016), bibliometrics employs statistical methods to examine scientific activity, enabling the assessment of trends in publication output, author and institutional productivity, and the academic impact of published research. Bibliometric indicators are typically categorized into two main types: productivity indicators, which reflect the volume of publications, and impact indicators, which gauge scholarly relevance based on citation frequency (José et al., 2009). The bibliometric analysis in this study followed the methodological framework outlined by Prado et al. (2016), which details the procedural steps for conducting such analyses, as shown in Table 1.

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Although more recent bibliometric frameworks have been proposed in the literature, the framework developed by Prado et al. (2016) remains suitable for studies aiming to provide a structured and reproducible bibliometric analysis, consistent with the objectives of the present research.

Table 1 – Proposed research framework for review articles

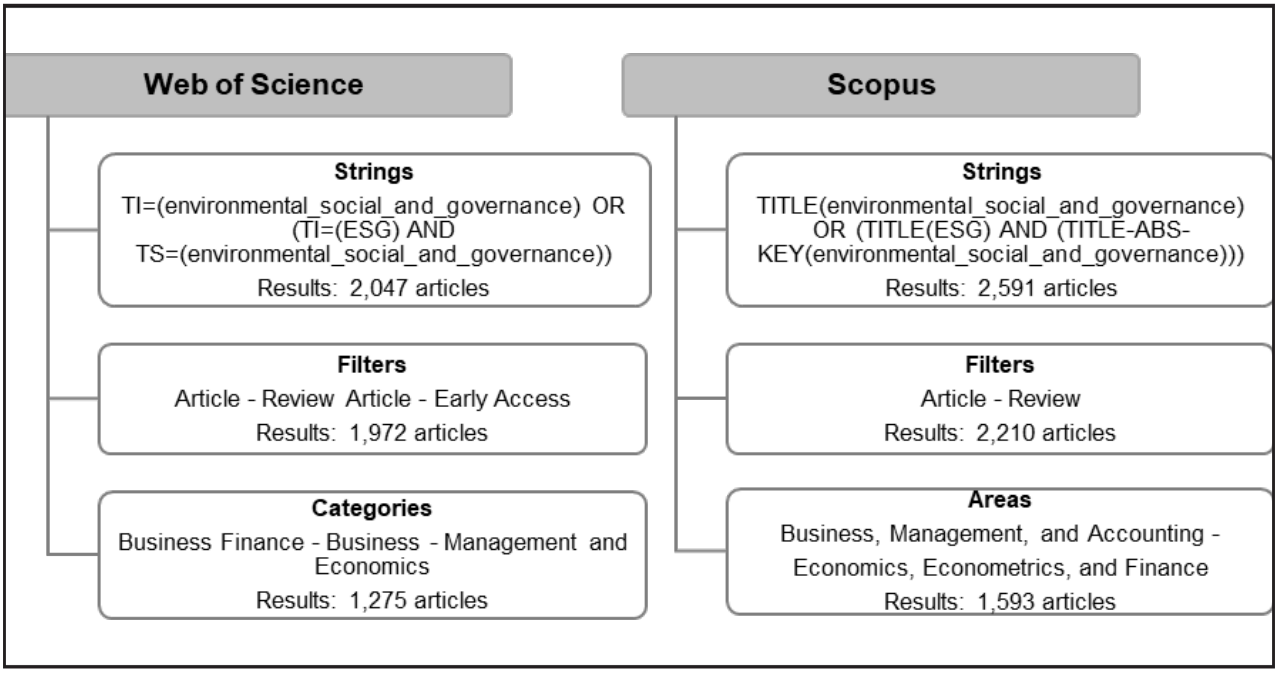
Step	Procedure	Description	
1ª	Research operationalization	1.1	Define the scientific and theoretical scope of the study
		1.2	Establish the research objectives
		1.3	Select relevant scientific databases or journals
		1.4	Identify key terms that represent the research field
		1.5	Define additional terms to refine the scope of results
2ª	Search procedures (filtering)	2.1	Determine search terms for retrieving references
		2.2	Specify Boolean operators for advanced search strategies
		2.3	Set additional filters to refine search results
3ª	Selection strategy (database)	3.1	Export references to EndNote software
		3.2	Organize references in EndNote
		3.3	Export references for use in bibliometric software
4ª	Data cleaning and organization	4.1	Remove duplicate records from the database
		4.2	Exclude articles through preliminary reading
		4.3	Exclude articles based on polysemy analysis of search terms
		4.4	Retrieve full-text articles in PDF format via EndNote
		4.5	Import data into bibliometric analysis software
5ª	Analysis of research front	5.1	Analyze publication volume and temporal trends
		5.2	Analyze the citation frequency of selected articles
		5.3	Analyze the most productive and most cited journals
6ª	Analysis of intellectual base	6.1	Analyze co-citation networks
		6.2	Identify citation bursts of keywords
7ª	Future research agenda	7.1	Review 2024 articles from the intellectual base
		7.2	Summarize key suggestions for future research
		7.3	Build a table of main themes categorized by topic
		7.4	Present and discuss key themes for future research

Source: Prado et al. (2016)

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To identify scientific publications on Environmental, Social, and Governance (ESG) in the corporate context (Step 1), the advanced search features of the Web of Science (WoS) and Scopus databases were used. These multidisciplinary databases index highly cited journals across a wide range of fields and allow data to be extracted for bibliometric analysis. Subsequently, the search procedures were defined (Step 2), as illustrated in Figure 1.

Figure 1 – Search procedures



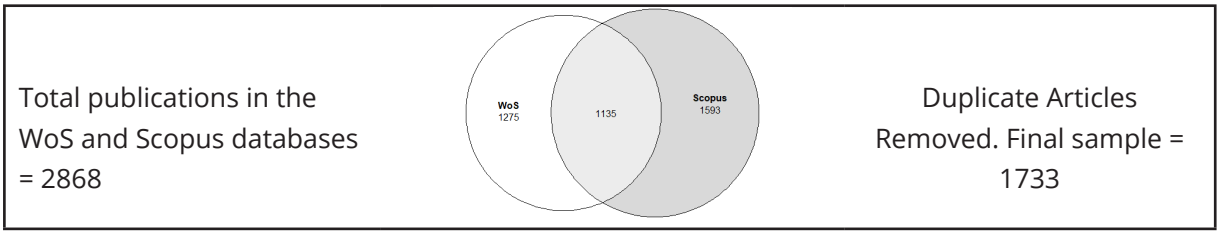
Source: Authors (2024)

Figure 1 illustrates the search strings used to identify terms in the titles and abstracts of articles. After this step, specific filters were applied, followed by the selection of the WoS categories and Scopus subject areas, while all other categories and subject areas were excluded. Relevant WoS categories and Scopus subject areas were selected to ensure the inclusion of studies addressing ESG in the corporate context. These categories were defined after preliminary testing because they provided the best representation of the research scope while minimizing the retrieval of publications outside the study objectives.

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The search was conducted on October 23, 2024, with no restrictions on publication period or language. The retrieved publications covered the period from 2007 to 2024, resulting in a final dataset of 2,868 publications (Figure 2).

Figure 2 – Venn diagram showing the distribution of ESG-related articles across the WoS and Scopus databases



Source: Adapted from the RStudio software (2024)

Ahmad et al. (2023) noted that Scopus is the preferred database among researchers in the ESG field. In the present study, Scopus returned a larger number of relevant publications, with 1,593 articles related to ESG, whereas WoS yielded 1,275. After consolidating the records from both databases and identifying 1,135 duplicate entries (i.e., articles indexed in both sources), the final sample consisted of 1,733 unique articles, which were used in the subsequent analyses.

To manage references, abstracts, and full-text PDFs (Steps 3 and 4.1-4.4), EndNote (Thomson Reuters) was used. The curated dataset was then imported into bibliometric analysis software (Step 4.5). Analysis of the research front (Stage 5) was conducted using Bibliometrix (Aria & Cuccurullo, 2017), whereas analysis of the intellectual base (Stage 6) was performed using both Bibliometrix and CiteSpace (Chen, 2006). According to Chen (2006), bibliometric studies comprise two primary dimensions: the research front (Stage 5), which reflects an emerging and transitory cluster of concepts and latent research questions, and the intellectual base (Stage 6), which represents the underlying citation and co-citation network supporting that research front—an evolving body of scientific publications cited by research front concepts.

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Aria and Cuccurullo (2017) explained that citation counts provide a measure of the affinity among documents, authors, and journals. Co-citation occurs when two articles are cited together in a third publication. Co-citation analysis is typically used to map foundational (older) articles, whereas bibliographic coupling is employed to identify the current research front.

Finally, Step 7 presents a future research agenda developed according to the model proposed by Filser et al. (2017), which outlines key themes for further investigation and discusses emerging research opportunities in the ESG field.

4 ANALYSIS AND DISCUSSION OF FINDINGS

This section analyzes the 1,733 publications on Environmental, Social, and Governance (ESG) retrieved from the Web of Science (WoS) and Scopus databases from seven perspectives, following the research framework proposed by Prado et al. (2016).

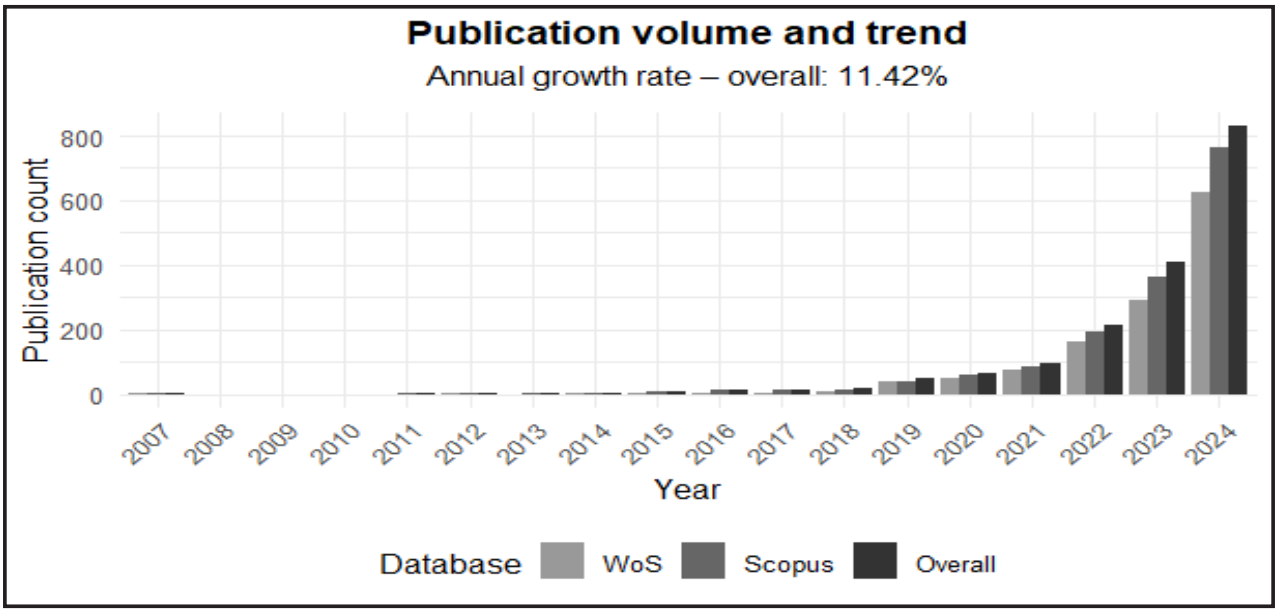
4.1 Analysis of Research Front

4.1.1 Analysis of publication volume and temporal trends

Since its introduction in 2004, the adoption of ESG principles has grown substantially. As shown in Figure 3, the first academic publication referring to ESG appeared in 2007, three years after the term was introduced. In this pioneering study, Kiernan (2007) discussed the challenges companies faced in adopting ESG practices while highlighting early signs of change, including emerging business investments aligned with ESG principles.

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Figure 3 – Publication volume and temporal trends



Source: Adapted from the RStudio software (2024)

Throughout the first two decades of the 21st century, the number of ESG-related publications remained relatively low, with only 17 published in 2018. However, interest in the topic accelerated in 2019 following the Statement on the Purpose of a Corporation, signed by 181 CEOs of major companies, which reaffirmed a commitment to sustainable development and corporate social responsibility (Amato Neto et al., 2022).

The topic gained even greater visibility in 2023, with 410 articles published, reflecting both growing scientific interest and increasing societal awareness of the relevance of ESG. By October 2024, 832 publications had already been identified, suggesting that the year may represent a turning point in the expansion and consolidation of ESG research.

The growth pattern identified in this study is consistent with previous bibliometric investigations, which also reported a substantial increase in ESG-related publications, particularly after 2018 (Ahmad et al., 2023; Wan et al., 2023). However, by integrating publications indexed in both the Web of Science and Scopus databases, the present study provides a more comprehensive overview of the evolution of ESG research in the corporate context.

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4.1.2 Analysis of citation frequency of selected articles

The publications in the sample received a total of 28,810 citations in the WoS database and 40,103 in Scopus. The eight most cited articles across both databases represent only 0.46% of the 1,733 publications but account for 16.41% of all citations in the sample.

These highly cited studies support the findings of De Giuli et al. (2023) and Maaloul et al. (2023), indicating that ESG research remains inconclusive, as the eight most cited articles adopt different approaches to the ESG construct. Table 2 presents the results of the citation analysis for the selected articles.

Table 2 – Most-cited articles on ESG

Article's title	Author(s)	Journal (ISSN)	Total citations		Annual mean	
			WoS	Scopus	WoS	Scopus
ESG and Financial Performance: Aggregated Evidence from More than 2000 Empirical Studies	Friede, Busch, and Bassen (2015)	Journal of Sustainable Finance & Investment (2043-0795)	-	1420	-	142
Firms and social responsibility: A review of ESG and CSR research in corporate finance	Gillan, Koch, and Starks (2021)	Journal of Corporate Finance (0929-1199)	807	927	202	232
The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China	Broadstock et al. (2021)	Finance Research Letters (1544-6123)	672	603	168	151
Why and How Investors Use ESG Information: Evidence from a Global Survey	Amel-Zadeh and Serafeim (2018)	Financial Analysts Journal (1938-3312)	-	607	-	87
ESG Performance and Firm Value: The Moderating Role of Disclosure	Fatemi, Glaum, and Kaiser (2018)	Global Finance Journal (1044-0283)	-	574	-	82
Responsible investing: The ESG-efficient frontier	Pedersen, Fitzgibbons, and Pomorski (2021)	Journal of Financial Economics (1879-2774)	479	555	120	139

Continues

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Table 2 – Most-cited articles on ESG Continuation

Article's title	Author(s)	Journal (ISSN)	Total citations		Annual mean	
			WoS	Scopus	WoS	Scopus
The impact of environmental, social, and governance disclosure on firm value: The role of CEO power	Li et al. (2018)	The British Accounting Review (0890-8389)	460	521	66	74
Aggregate Confusion: The Divergence of ESG Ratings	Berg, Kolbel, and Rigobon (2022)	Review of Finance (1572-3097)	497	506	166	169
Total citations			28810	40103		

Source: Adapted Bibliometrix software (2024)

Friede et al. (2015) reported that approximately 90% of studies examining the relationship between ESG and financial performance found positive associations. However, Gillan et al. (2021) noted that the relationship among corporate social responsibility (CSR), ESG, and financial or market performance remains inconsistent across the literature. Broadstock et al. (2021) observed that, during the COVID-19 pandemic, the stock prices of Chinese companies with strong ESG performance experienced smaller losses, suggesting a potential protective effect.

Fatemi et al. (2018) emphasized the moderating role of ESG disclosure, arguing that it helps mitigate the negative impact of ESG weaknesses by legitimizing corporate actions in the eyes of investors. However, ESG disclosure may also reduce the positive effects of ESG strengths, as the market may perceive such efforts as overinvestment.

Berg et al. (2022) investigated discrepancies in ESG ratings across six major rating agencies and found that measurement differences accounted for 56% of the divergence, differences in scope for 38%, and weighting for 6%. They emphasized the need for greater transparency in ESG assessment criteria to facilitate comparability across ratings. Similarly, Amel-Zadeh and Serafeim (2018) highlighted the lack of standardization in ESG reporting, arguing that the perceived investment relevance of ESG data is the primary reason investors rely on such information.

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Pedersen et al. (2021) examined the relationship between ESG and investment performance using the Sharpe ratio, whereas Li et al. (2018) found a positive association between ESG disclosure and market value. Their study also showed that greater CEO power is associated with higher levels of ESG disclosure.

4.1.3 Analysis of the most productive and most cited journals

Table 3 presents data on the journals with the highest number of publications on the ESG topic, along with their respective Impact Factors (IF). The table includes the top seven journals indexed in the WoS and Scopus databases. The selection was limited to the seventh position because subsequent journals (two in WoS and four in Scopus) had the same number of publications (22).

Table 3 – Analysis of the most productive journals

Journal	ISSN	FI (2023)	Publications	
			WoS	Scopus
Corporate Social Responsibility and Environmental Management	1099-0925	8.3	104	106
Finance Research Letters	1544-6123	7.4	92	94
Business Strategy and the Environment	1099-0836	12.5	76	74
Journal of Cleaner Production	0959-6526	9.8	-	43
International Review of Financial Analysis	1057-5219	7.5	36	35
Research in International Business and Finance	0275-5319	6.3	26	27
Sustainability Accounting Management and Policy Journal	2040-8021	5.2	26	26

Source: Adapted from Bibliometrix software (2024)

The journals with the highest number of ESG-related publications also exhibit high Impact Factors, indicating their scientific prestige and influence within the field. Their presence in both databases, except for the Journal of Cleaner Production, which is not indexed in the WoS, further reinforces their representativeness. These findings

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suggest that ESG research is of broad multidisciplinary interest, spanning fields such as finance, corporate sustainability, strategic management, and accounting.

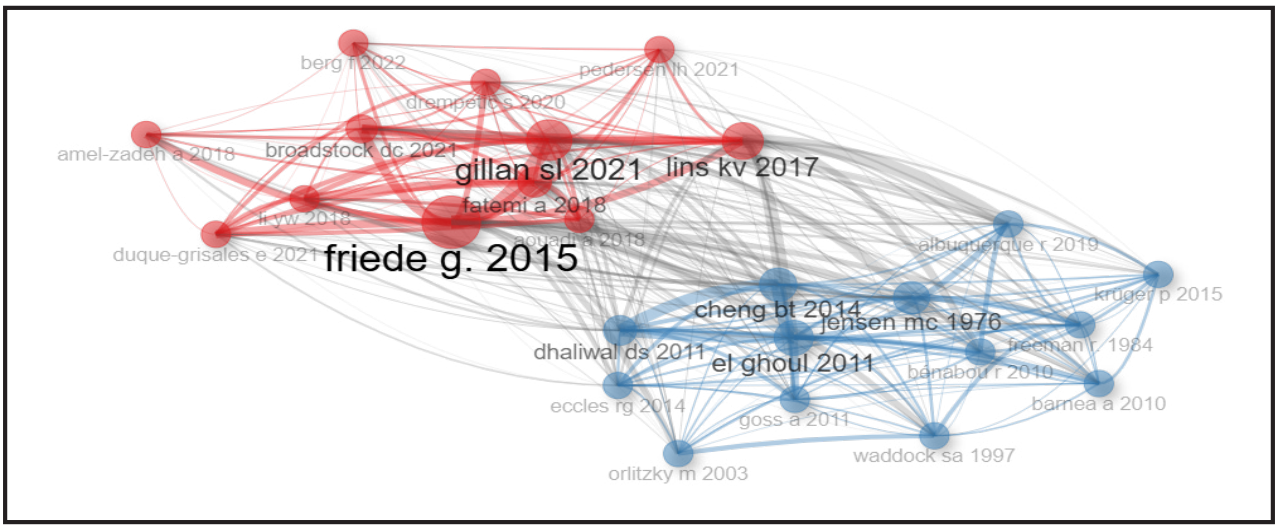
4.2 Analysis of intellectual base

4.2.1 Analysis of co-citation networks

The co-citation network constructed from the combined WoS and Scopus data reveals a well-defined intellectual structure comprising two main clusters of ESG research in the corporate context. Cluster 1, shown in red, includes authors such as Broadstock et al. (2021), Friede et al. (2015), Gillan et al. (2021), and Lins et al. (2017). These studies primarily comprise literature reviews and empirical analyses, with a particular focus on the effects of ESG performance during periods of financial crisis.

Cluster 2, shown in blue, includes authors such as Cheng et al. (2014), Dhaliwal et al. (2010), El Ghoul et al. (2011), Freeman (1984), and Jensen and Meckling (1976). This cluster has an empirical orientation, emphasizing the impact of ESG on firm value, risk, and the cost of capital. The studies in this cluster are primarily grounded in Agency Theory (Jensen & Meckling, 1976) and Stakeholder Theory (Freeman, 1984). Figure 4 illustrates these two clusters.

Figure 4 – Analysis of co-citation networks



Source: Adapted from Bibliometrix software (2024)

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In Cluster 1, Friede et al. (2015) reviewed approximately 2,200 studies on ESG. Gillan et al. (2021) provided a more focused review of corporate finance research on ESG and CSR, identifying the themes most frequently discussed and debated in the literature. In addition, studies by Broadstock et al. (2021) and Lins et al. (2017) suggest that ESG performance contributes positively to stock market performance, particularly during periods of financial crisis.

The findings in Cluster 1 are consistent with those of Alareeni and Hamdan (2020), Amel-Zadeh and Serafeim (2018), and Khan (2019), who documented the evolution and increasing sophistication of ESG practices and metrics over recent decades. They also support the conclusions of Beloskar and Rao (2022), who highlighted the resilience of firms with strong ESG performance during periods of crisis.

In Cluster 2, empirical evidence suggests that ESG performance is associated with financial benefits. Companies with stronger ESG profiles tend to face fewer capital constraints (Cheng et al., 2014) and have access to equity financing at lower costs (Dhaliwal et al., 2010; El Ghoul et al., 2011). Krüger (2015) further observed that CSR-related news with strong legal and economic implications generates more pronounced investor responses. These findings are consistent with more recent evidence reported by Kim et al. (2022) and Siwei and Chalermkiat (2023).

The identification of these clusters suggests that ESG research has progressively shifted from conceptual discussions to examining its organizational and financial implications. In particular, the predominance of Agency Theory and Stakeholder Theory reflects an increasing effort to explain how ESG practices influence corporate governance, firm performance, and stakeholder relationships.

4.2.2 Analysis of Citation Bursts of Keywords

Table 4 presents the 19 keywords with the strongest citation bursts, offering insights into emerging trends and the influential themes in ESG discourse over time.

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As observed in Table 4, terms such as “corporate social performance” (2012–2019) and “ESG investing” (2015–2021) reflect periods of heightened interest and visibility, marking the early development of research on corporate social responsibility (CSR) and the growing adoption of ESG as an investment criterion. More recent keywords, including “environmental performance” (2018–2024) and “corporate sustainability” (2020–2024), indicate a shift toward greater emphasis on environmental outcomes and integrated sustainability strategies.

Table 4 – Top 19 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2007 - 2024
Corporate social performance	2012	3.05	2012	2019	
ESG investing	2015	6.58	2015	2021	
Socially responsible investment	2015	3.08	2015	2019	
Socially responsible investing	2017	3.11	2017	2021	
Environmental performance	2018	4.39	2018	2024	
Investors	2018	3.94	2018	2022	
Voluntary disclosure	2019	3.27	2019	2021	
Economic performance	2019	3.03	2019	2020	
Value relevance	2019	3.03	2019	2020	
Nonfinancial disclosure	2020	5.88	2020	2022	
Corporate sustainability	2012	5.87	2020	2024	
Valuation	2018	5.19	2020	2022	
Ethics	2020	4.09	2020	2021	
Diversity	2020	3.51	2020	2021	
Women	2020	3.4	2020	2024	
Risk management	2020	3.16	2020	2022	
Strategy	2018	6.33	2021	2022	
Environmental, social, and governance (ESG)	2021	6.02	2021	2022	
Models	2021	4.01	2021	2022	

Source: Prepared by the authors using Citespace software (2024)

In addition, the recent emergence of the keyword “women” suggests a growing scholarly focus on social dimensions of ESG, particularly issues related to inclusion and gender equality, as highlighted in research trends identified by Au et al. (2023).

The emerging topics identified through Citation Burst analysis are consistent with the thematic evolution revealed by the co-citation network and reinforce the future research agenda proposed in this study. Together, these findings suggest

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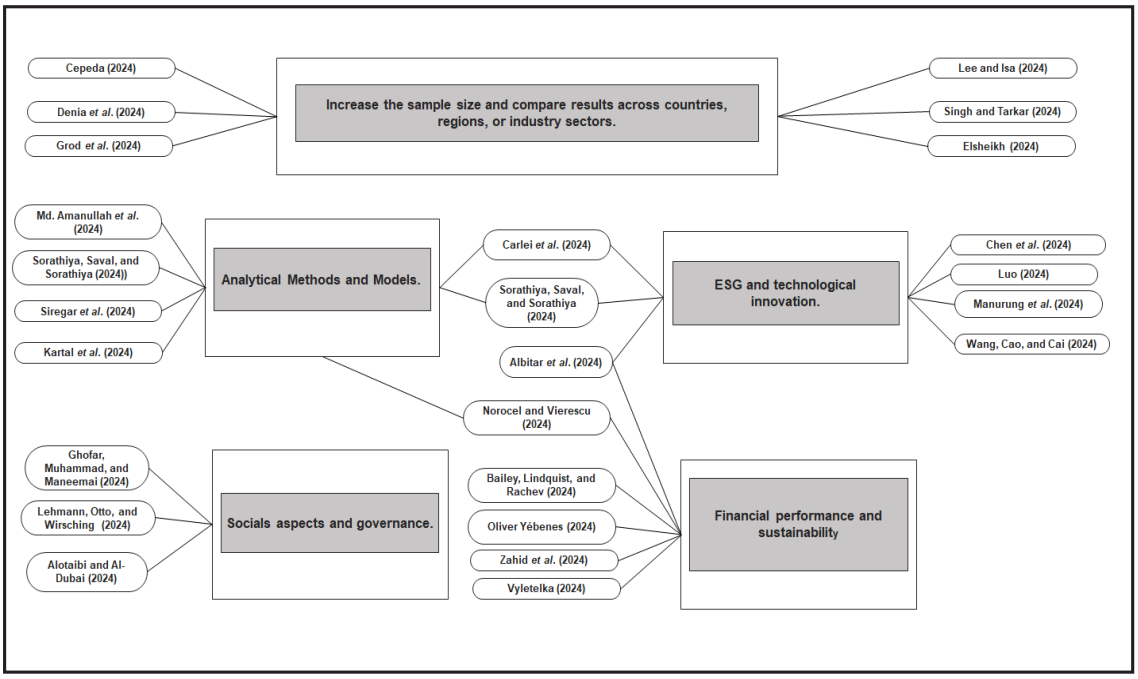
that ESG research is progressively expanding toward issues related to corporate governance, firm performance, transparency, and stakeholder management.

4.3 Future Research Agenda

To develop the future research agenda, a qualitative analysis was conducted using the 2024 publications available in full text. Accordingly, 106 of the 832 publications retrieved in 2024 were selected and examined to identify explicit suggestions for future research. The identified suggestions were subsequently grouped according to their thematic focus, providing the basis for the categories presented in Figure 5.

However, approximately three-quarters of these recommendations focused on increasing sample sizes or conducting comparative analyses across countries, regions, or industry sectors (Cepeda, 2024; Denia et al., 2024; Elsheikh et al., 2024; Grodt et al., 2024; Lee & Isa, 2024; Singh & Tarkar, 2024). To construct the diagram proposed by Filser et al. (2017), the remaining 19 articles, which offered alternative research directions, were used. These research directions were subsequently organized into the categories shown in Figure 5.

Figure 5 – Future research agenda



Source: Model proposed by Filser et al. (2017)

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Figure 5 highlights that, beyond the studies recommending larger sample sizes or comparative analyses across countries, regions, or industry sectors, four additional categories emerged as promising directions for future research.

The first category, Methodology and Analytical Models, comprises studies proposing the development or refinement of theoretical frameworks, analytical tools, and advanced techniques for ESG evaluation. As sustainability becomes increasingly central to both consumers and investors, integrating ESG factors into corporate strategies has become essential (Amanullah et al., 2024). In the investment domain, the use of advanced data analytics and programming tools, such as Python, has become increasingly important for improving both financial and ethical portfolio performance, underscoring the strategic role of ESG in long-term decision-making (Sorathiya et al., 2024). Despite the potential benefits of green innovation and sustainability reporting, recent studies emphasize the current limitations of generalizing ESG outcomes. Consequently, new analytical models are needed, as discussed by Kartal et al. (2024), Norocel and Vierescu (2024), and Siregar et al. (2024).

The second category focuses on the relationship between ESG and technological dimensions. Studies by Adrianus Manurung et al. (2024), Albitar et al. (2024), Carlei et al. (2024), Chen et al. (2024), Luo (2024), Sorathiya et al. (2024), and Wang et al. (2024) suggest that future research should further examine the intersections between ESG and technological innovation, digital transformation, and machine learning applications.

The third category, consistent with the analysis presented in Table 4, reflects an emerging research stream focused on specific social issues, particularly inclusion and gender equality. Studies by Alotaibi and Al-Dubai (2024), Ghofar et al. (2024), and Lehmann et al. (2024) recommend further investigation of corporate governance, diversity, social impact, and other human-centered dimensions within the ESG framework.

Finally, the fourth category encompasses studies examining the influence of ESG on corporate financial performance and corporate sustainability (Albitar et al., 2024; Bailey et al., 2024; Norocel & Vierescu, 2024; Oliver Yébenes, 2024; Vyletelka, 2024; Zahid et al., 2024).

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Taken together, the bibliometric evidence provides a comprehensive overview of the intellectual evolution of ESG research and supports future investigations that integrate corporate governance, financial performance, and stakeholder-oriented perspectives within increasingly interdisciplinary research agendas.

5 FINAL CONSIDERATIONS

This study examined publications on Environmental, Social, and Governance (ESG) in the corporate context indexed in the Web of Science (WoS) and Scopus databases through bibliometric analysis. The findings reveal that academic interest in ESG has grown exponentially, particularly over the past five years, reflecting the increasing emphasis on sustainable practices in the corporate environment. As noted by Ahmad et al. (2023) and Maaloul et al. (2023), the literature adopts diverse approaches to measuring and interpreting ESG performance, highlighting the lack of standardization in the field.

Citation analysis of the 1,733 publications showed that the eight most cited articles—representing only 0.46% of the sample—accounted for 16.41% of all citations. Scopus contained a larger number of relevant publications than the Web of Science. The leading journals indexed in both databases exhibited high Impact Factors, reinforcing the quality and credibility of the sources analyzed.

Co-citation network analysis identified two main clusters: Cluster 1, centered on literature reviews, and Cluster 2, focused on empirical studies examining the relationship between ESG performance and financial outcomes. These empirical studies are primarily grounded in Agency Theory (Jensen & Meckling, 1976) and Stakeholder Theory (Freeman, 1984).

Based on a critical analysis of recent publications, the proposed research agenda identifies five key areas for future investigation: (1) expanding sample sizes to support cross-country and cross-sector comparisons; (2) advancing methodologies and developing new analytical models; (3) exploring the interface between ESG and technology; (4) further investigating social dimensions such as diversity and inclusion; and (5) assessing the impact of ESG on financial performance and corporate sustainability.

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This study contributes to advancing the ESG literature by demonstrating that the lack of standardization in empirical findings is not an isolated phenomenon but rather a structural characteristic of the field. The bibliometric analysis revealed that the diversity of ESG metrics, the use of different databases, and theoretical fragmentation hinder the comparability of studies and the accumulation of knowledge.

Beyond confirming the continued lack of standardization in ESG metrics, this study advances the ESG literature by identifying the intellectual structure of research in the corporate context. The findings highlight the predominance of Agency Theory and Stakeholder Theory as the principal theoretical foundations supporting recent studies, while reinforcing the growing integration of ESG with corporate governance, firm performance, and stakeholder management.

As a limitation, bibliometric analysis, by its quantitative nature, allows the mapping of scientific production patterns, citation networks, and thematic trends but does not permit an in-depth examination of the theoretical assumptions, empirical methods, or individual findings of the studies analyzed. In addition to the five future research avenues identified in this study, future research should complement the bibliometric approach with systematic reviews, meta-analyses, or qualitative methods to provide a deeper understanding of the role of ESG in the corporate context.

DECLARATION ON AI USE

This manuscript is based on a doctoral thesis originally written in Portuguese by the first author and translated into English by a professional third-party translation service. The authors did not use artificial intelligence in the conception, analysis, interpretation, or writing of the manuscript. According to the translation service provider, the translation was carried out by human translators using CAT tools. Any possible use of AI-assisted resources was restricted exclusively to linguistic support.

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2. Data curation	√				
3. Formal analysis	√	√	√		
4. Funding acquisition					
5. Investigation	√				
6. Methodology	√	√	√		
7. Project administration	√	√			
8. Resources	√	√	√		
9. Software	√				
10. Supervision		√	√		
11. Validation	√	√	√	√	√
12. Visualization	√				
13. Writing – original draft	√				
14. Writing – review & editing	√	√	√	√	√

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