

Original Article

Critical Success Factors in ESG: Asymmetries between Corporate Communication and Investor Perceptions

Fatores Críticos de Sucesso no ESG: Assimetrias entre Comunicação Corporativa e Percepções de Investidores

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ABSTRACT

Purpose: This study explores which Environmental, Social, and Governance (ESG) attributes are most valued by investors and whether they align with the priorities disclosed by Brazilian companies recognized for sustainable performance.

Methodology: A mixed-methods approach was adopted. First, qualitative content analysis was conducted on the reference forms of 15 companies listed on the B3 Corporate Sustainability Index (ISE). Then, a survey of 145 investors assessed the relevance they assigned to the ESG themes. ESG items were categorized using a critical success factors (CSF) framework.

Findings: The results reveal a substantial misalignment: companies emphasize environmental and social disclosure, whereas investors prioritize governance aspects, particularly integrity, compliance, and cybersecurity. Gender differences emerged, with women attributing higher importance to social and environmental pillars. The findings suggest that ESG communication often fails to meet investor expectations, limiting its usefulness in decision-making.

Originality: This study offers a novel integration of corporate ESG disclosures and investor perceptions, structured through the CSF lens. This contributes to understanding the gaps between institutional narratives and stakeholder priorities, emphasizing the risk of symbolic ESG adoption (greenwashing).

Research limitations and implications: This study focuses on companies already engaged in ESG (ISE B3), which may limit its generalizability to the broader market. The non-probabilistic and convenience-based investor survey was distributed through professional networks and may reflect the perspectives of individuals with a declared interest in sustainable finance. Future research could expand to different sectors, investor profiles, and data sources. Despite these limitations, this study offers relevant insights for improving ESG alignment, transparency, and stakeholder trust.

Keywords: ESG; Critical Success Factors; Corporate Communication; Investor Perception; Governance; Greenwashing

RESUMO

Objetivo: Este estudo investiga quais atributos ESG (Ambiental, Social e Governança) são mais valorizados por investidores e se estão alinhados com as prioridades divulgadas por empresas brasileiras reconhecidas por desempenho sustentável.

Metodologia: Adotou-se uma abordagem mista. Primeiramente, realizou-se uma análise qualitativa dos formulários de referência de 15 empresas listadas no Índice de Sustentabilidade Empresarial (ISE B3). Em seguida, aplicou-se um survey com 145 investidores, avaliando a importância atribuída aos temas ESG. Os itens ESG foram categorizados segundo a lógica dos Fatores Críticos de Sucesso (FCS).

Resultados: Houve expressivo desalinhamento: as empresas priorizam divulgações ambientais e sociais, enquanto os investidores atribuem maior importância aos aspectos de governança, especialmente integridade, compliance e cibersegurança. Diferenças de gênero também foram observadas: mulheres valorizam mais os pilares social e ambiental. A comunicação ESG atual se mostra limitada em atender às expectativas do mercado.

Originalidade: O estudo integra de forma inédita uma análise das divulgações corporativas de ESG e a percepção de investidores, utilizando a abordagem dos FCS. Contribui para o entendimento das lacunas entre discurso institucional e prioridades dos stakeholders, alertando para os riscos de adoção simbólica do ESG (greenwashing).

Limitações/implicações da pesquisa: O foco em empresas já engajadas com ESG (ISE B3) pode restringir a generalização. A amostra de investidores, de caráter não probabilístico e por conveniência, foi composta por participantes conectados a redes profissionais, com interesse declarado em finanças sustentáveis. Pesquisas futuras podem ampliar escopo e perfis analisados. Ainda assim, o estudo fornece subsídios relevantes para fortalecer a coerência, a transparência e a confiança nas estratégias ESG.

Palavras-chave: ESG; Fatores Críticos de Sucesso; Comunicação Corporativa; Percepção dos Investidores; Governança; Greenwashing

1 INTRODUCTION

In recent decades, the debate over the corporate role in promoting sustainable development has intensified, driven by regulatory pressures, social change, and increasingly conscious stakeholder expectations. Within this context, Environmental, Social, and Governance (ESG) criteria, introduced in the Who Cares Wins report (United Nations, 2004), have become strategic benchmarks for aligning financial performance with ethics, sustainability, and social inclusion.

Empirical studies indicate that ESG practices can improve access to capital, mitigate operational risks, and strengthen corporate reputations (Chen et al., 2023; Possebon et al., 2024). However, this relationship remains contested due to the lack of standardized indicators, risk of greenwashing, superficiality of some initiatives, and absence of conclusive evidence regarding long-term financial impacts (Berg, Koelbel & Rigobon, 2022; Gillan et al., 2021).

Recent analyses have also revealed the partial retreat of large corporations from ESG commitments amid financial performance pressures, ideological disputes, and adaptation costs. In certain contexts, ESG has been reframed as a reputational or regulatory cost rather than as a competitive advantage (Paetzold, Busch & Chesney, 2022). As O’Leary (2023) observes, the ESG agenda often reflects the tension between the idealistic expectations of corporate social responsibility and the pragmatic demands of short-term profitability.

To navigate this complex and interpretatively disputed landscape, the concept of critical success factors (CSF) offers a valuable methodological approach. Originally proposed by Bullen and Rockart (1981), CSF identify the key strategic areas in which an organization must perform well to achieve its objectives. When applied to sustainability, this framework helps organize multiple ESG dimensions into manageable analytical categories, enhancing both the strategic focus and comparability. Prior studies emphasize that identifying and monitoring CSF within the ESG context strengthens the alignment between corporate strategies and stakeholder expectations, improves transparency, and reduces information asymmetry (Esteves, 2004; Irianto & Sudarmadji, 2019).

Accordingly, this study seeks to examine which ESG attributes are most valued by investors and how these perceptions align with the priorities of Brazilian companies listed on the B3 Corporate Sustainability Index (ISE). By addressing this question, the research contributes to a critical and updated understanding of potential asymmetries between corporate sustainability strategies and financial stakeholder expectations.

2 THEORETICAL FRAMEWORK

The growing relevance of sustainability in the corporate environment has led to the emergence of conceptual frameworks that integrate environmental, social, and governance concerns into business strategies. Among them, the Environmental, Social, and Governance (ESG) model has become a global standard for responsible corporate behavior, guiding companies and investors toward sustainable value creation (United Nations, 2004).

Despite its widespread adoption, debates persist regarding ESG's effectiveness, methodological coherence, and transformative capacity of ESG. While it promotes transparency and accountability, it has also been criticized for superficial implementation, rhetorical overlaps, and inconsistent assessment mechanisms. This section presents the theoretical pillars supporting this study: (i) ESG as a corporate sustainability strategy; (ii) stakeholder perception and investor challenges; (iii) limitations of the ESG model; and (iv) the role of critical success factors (CSF) in strengthening ESG management.

2.1 ESG as a Corporate Sustainability Strategy

ESG emerged as a response to the demand for responsible business practices, consolidating after the *Who Cares Wins* report (United Nations, 2004). It serves as a framework for integrating sustainability into risk management and long-term strategy, promoting competitiveness and reputation (Eccles, Ioannou & Serafeim, 2014). The three ESG pillars: environmental, social, and governance are interdependent but often imbalanced in practice.

Moreover, since empirical studies have shown positive associations between ESG performance and financial outcomes, especially in sectors exposed to regulatory or environmental risks (Clark, Feiner & Viehs, 2015; Khan, Serafeim & Yoon, 2016). However, persistent methodological challenges hinder comparability across firms,

as ESG indicators remain fragmented and inconsistently weighted by rating agencies (Amir & Serafeim, 2018; Berg, Koelbel, & Rigobon, 2022).

This gap enables greenwashing practices (Pinsky & Kruglianskas, 2021; Fontes-Filho & Serra, 2023) and reflects the tension between authentic responsibility and performative sustainability (Christensen, Serafeim, & Sikochi, 2022).

Although ESG represents a major step forward in governance evolution, its consolidation requires regulatory pressure, institutional maturity, and cultural change to move beyond short-term profit logic (Ioannou & Serafeim, 2019).

2.2 Stakeholder Perception and the Challenges of ESG in Decision-Making

According to Stakeholder Theory (Freeman, 1984; Mitchell, Agle & Wood, 1997), stakeholder perception, particularly that of investors', shapes how companies prioritize and legitimize ESG practices. Legitimacy (Suchman, 1995) and signaling (Spence, 1973; Connelly et al., 2011) theories explain how companies use ESG disclosures, certifications, and reports to reduce information asymmetry and attract capital.

However, integrating ESG factors into investment decisions remains challenging. The principle of materiality, identifying sustainability factors that truly affect value creation, often lacks clarity and consistency (Eccles & Krzus, 2018; Khan, Serafeim & Yoon, 2016). Despite international initiatives such as the SASB, TCFD, and ISSB aiming for standardization, divergent criteria continue to limit comparability and reliability (Leins, Mayer & Virgoe, 2021).

Evidence on ESG's financial predictiveness of ESG is mixed: while some studies show positive correlations (Friede, Busch & Bassen, 2015), others point to selection biases and methodological inconsistencies (Berg, Koelbel & Rigobon, 2022). Investors acknowledge environmental and social risks (Krueger, Sautner & Starks, 2020), yet cultural and institutional barriers hinder their integration into capital allocation decisions. Moreover, the proliferation of greenwashing and symbolic rather than structural ESG actions undermines credibility (Amel-Zadeh & Serafeim, 2018).

Thus, ESG has advanced as a normative framework in finance, but its practical integration into decision-making still lacks maturity, coherence and operational depth.

2.3 Limitations of the ESG Model

Critiques of ESG emphasize its inconsistent ratings, methodological opacity, and inconclusive empirical results. Rating divergences between agencies produce conflicting evaluations (Berg, Koelbel, & Rigobon, 2022), while findings on ESG performance relationships vary across sectors and timeframes (Gillan, Koch, & Starks, 2021).

The persistence of greenwashing reflects corporate responses to regulatory and reputational pressures that treat ESG as a cost rather than an embedded value (Paetzold, Busch & Chesney, 2022). In certain contexts, ESG has even become a site of ideological contestation, as O'Leary (2023) argues, revealing the tension between corporate idealism and financial pragmatism.

Amid these challenges, initiatives such as the Global Reporting Initiative (GRI) and the International Sustainability Standards Board (ISSB) have sought to establish unified disclosure frameworks to enhance accountability (Christensen, Hail, & Leuz, 2021). Nonetheless, ESG's credibility of ESG remains contingent on data integrity and genuine organizational commitment.

2.4 Critical Success Factors (CSF)

Originally proposed by Bullen and Rockart (1981), critical success factors (CSF) refer to essential areas where satisfactory performance ensures organizational success. Applied to sustainability, CSF provide a structured lens for identifying and strategically prioritizing the most relevant ESG dimensions (Esteves, 2004; Irianto & Sudarmadji, 2019).

This approach helps companies move beyond declarative commitments by clarifying which topics, such as ethics, climate change, or community engagement, are *truly critical* to performance and legitimacy. It also enhances comparability and focuses attention on the alignment between internal strategies and stakeholder expectations (Bieker 2003).

In this study, ESG indicators were grouped into five strategic CSF-based dimensions:

- *Climate Change, Water, and Energy*
- *People and Communities*
- *Customers, Operations, and Supply Chains*
- *Ethics, Governance, and Compliance*
- *Innovation, Technology, and Cybersecurity*

By employing the CSF framework, this analysis explores potential asymmetries between corporate communication and investor perceptions, contributing to a more structured and comparable understanding of ESG performance.

3 METHODOLOGY

This study adopted a mixed qualitative-quantitative approach developed in two complementary and interdependent stages. The first stage comprised a systematic document analysis of the reference forms of companies listed in the B3 Corporate Sustainability Index (ISE), aiming to map the most frequently disclosed material topics across the environmental (E), social (S), and governance (G) pillars.

The second stage of the present study involved a survey of investors to capture their perceptions of the relevance of ESG topics in financial decision-making. Integrating both phases enabled the identification of alignment or mismatch between corporate disclosure and market expectations, contributing to the understanding of ESG communication effectiveness.

3.1 Document Analysis

The first phase employed qualitative document analysis based on publicly available reference forms from companies included in the ISE-B3, retrieved from the CVM and B3 websites (CVM, 2024; 2025). Following the guidelines of Cellard (2008) and

Gil (2008), document analysis was selected for its ability to extract meaning from official records and institutional narratives, allowing for both objective and interpretive insights.

The procedure was guided by content analysis principles (Bardin, 2011) and thematic analysis (Braun & Clarke, 2006), focusing on the presence, emphasis, and frequency of ESG-related topics, as well as their internal coherence and alignment with corporate strategy. The critical success factors (CSF) framework (Bullen & Rockart, 1981) was used to classify and group ESG disclosures into five strategic dimensions: (1) Climate Change, Water, and Energy; (2) People and Communities; (3) Customers, Operations, and Supply Chains; (4) Ethics, Governance, and Compliance; and (5) Innovation, Technology, and Cyber Security.

Documents were systematically coded and categorized using Microsoft Excel, enabling the identification of communication patterns and thematic prevalence. To ensure analytical rigor, all classifications were reviewed by a supervising advisor. This process provided an interpretive basis for assessing how companies articulate sustainability narratives and prioritize ESG issues in governance practices.

3.2 Investor Perception Analysis

The second phase applied a structured survey to investors engaged or interested in sustainable finance to examine how ESG information influences risk assessment, strategic planning, and capital allocation. Beyond measuring perceived importance, the survey aimed to reveal how investors operationalize ESG factors as indicators of resilience and long-term value (Eccles, Ioannou & Serafeim, 2014; Khan, Serafeim & Yoon, 2016).

The questionnaire was designed following Dillman, Smyth, and Christian (2014) to ensure content validity and clarity. It consisted of four sections: (i) sociodemographic and professional profile, and (ii–iv) evaluations of each ESG pillar. Respondents rated various attributes using a seven-point Likert scale (1 = not relevant; 7 = extremely relevant), complemented by optional open-ended questions for qualitative insights. The instrument was adapted from Sultana, Zainal, and Zulkifli (2017) and pre-tested with a pilot group for clarity and usability.

Data collection occurred between February 15 and March 21, 2024, using Google Forms and non-probabilistic convenience sampling, reaching participants through WhatsApp invitations. The final sample comprised 145 valid responses (approximately 48% response rate). In accordance with Resolution No. 510/2016 of the Brazilian National Health Council, ethical approval was not required as no sensitive data or personal identifiers were collected.

Data analysis combined descriptive and inferential statistics (Field, 2013) with qualitative content analysis (Bardin, 2011) of the open-ended responses. This integrated approach enabled the identification of perception patterns and tensions among the ESG pillars, as well as the relative importance assigned to each dimension (Table 1).

The triangulation of findings from the two stages strengthens the analytical depth of the research, revealing whether the sustainability themes emphasized by companies converge with the factors that actually guide investor decision-making. The results thus contribute to assessing the consistency and transparency of ESG communication and its role in fostering responsible financial practices.

Table 1 – Methodology Summary

Stage	Objective	Method	References
3.1 Document Analysis	Map the most frequently reported ESG material topics by ISE-B3 companies and identify communication and signaling patterns related to sustainability commitments.	Qualitative document analysis based on the companies' reference forms; use of content analysis (Bardin, 2011) and thematic analysis (Braun & Clarke, 2006).	Bardin (2011); Braun & Clarke (2006); Cellard (2008); Gil (2008)
3.2 Investor Survey	Understand investor perceptions and the degree of importance attributed to ESG criteria in financial decision-making.	Structured survey organized into thematic blocks with Likert scale and open-ended questions; combined quantitative and qualitative analysis.	Dillman, Smyth & Christian (2014); Sultana, Zainal & Zulkifli (2017); Creswell e Creswell (2017); Field (2013); Bardin (2011).

Source: Prepared by the authors

4 ANALYSIS OF RESULTS

This section presents and interprets the empirical results obtained from the investor survey and document analysis of the Reference Forms for companies listed on the Corporate Sustainability Index (ISE B3). The investigation aimed to identify the degree of convergence between the ESG topics communicated by companies and those perceived as priorities by investors, based on the three pillars of Environmental, Social, and Governance.

The data analysis followed a comparative approach and was structured according to the logic of critical success factors (Bullen & Rockart, 1981), enabling the categorization of material indicators into thematic macro-groups. This categorization allows for the measurement of asymmetries, identification of patterns, and exposure of gaps in corporate communication, as well as capturing relevant nuances related to investors' profiles and perceptions.

4.1 ESG Profile of the Companies Selected from the ISE B3

The first empirical stage of the research consisted of a document analysis of the Reference Forms of 15 companies listed on B3's Corporate Sustainability Index (ISE B3), which were selected based on their scores in the theoretical portfolio for November 2023. The choice of the highest-rated companies in ISE B3 is justified by the assumption that these organizations demonstrate greater strategic alignment with corporate sustainability principles and greater maturity in integrating ESG factors into their corporate governance.

Created in 2005, ISE B3 was the first sustainability index in Latin America and fourth in the world. The purpose is to measure the average performance of the shares of companies with a high level of commitment to environmental, social, and governance practices based on technical criteria and a rigorous methodological evaluation conducted by B3's specialists. Document analysis focused on the sections of the Reference Forms

dealing with materiality and corporate governance. In many cases, companies directed readers to supplementary reports, such as Integrated Reports and Sustainability Reports, which were also incorporated into the analysis, broadening the scope of the investigation to more accurately capture each organization's commitments and priorities. The 15 selected companies represent different economic sectors (Table 2).

Table 2 – Highest-Scoring Companies in the ISE B3 (November/2023)

Ticker	Company	Economic Sector
BRFS3	BRF	Non-Cyclical Consumer
VIVT3	Telefônica Brasil	Communication
TIMS3	TIM Brasil	Communication
ITUB4	Itaú Unibanco	Financial
SANB11	Banco Santander	Financial
BBDC4	Banco Bradesco	Financial
ELET3	Eletrobras	Utilities
KLBN11	Klabin	Basic Materials
BBAS3	Banco do Brasil	Financial
SUZB3	Suzano	Basic Materials
CPLE6	Copel	Utilities
VBBR3	Vibra	Oil & Gas
LREN3	Lojas Renner	Cyclical Consumer
ITSA4	Itausa	Financial
EGIE3	Engie Brasil	Utilities

Source: ISE B3 Monthly Bulletin – November 2023

In the table above, we observe that the selection of the best-performing companies on ISE B3 was based on the premise that these organizations demonstrate a higher degree of maturity and strategic commitment to ESG principles. Therefore, the analysis of their Reference Forms aimed to identify the most recurring topics and emphasized pillars within corporate sustainability narratives, allowing us to infer which ESG dimensions have been prioritized in institutional communication and corporate management.

4.2 Material ESG Indicators: Comparative Overview

The extraction of material ESG indicators was conducted based on voluntary statements contained in the Reference Forms of the 15 selected companies. As shown in Table 3, there was a significant variation in the number of reported indicators: Klabin disclosed 22 topics considered material, whereas Santander reported only six.

Table 3 – Number of Material ESG Indicators per Company

Ticker	Company	Number of Indicators
KLBN11	Klabin	22
LREN3	Lojas Renner	19
EGIE3	Engie Brasil	15
VBBR3	Vibra	13
BBAS3	Banco do Brasil	11
ELET3	Eletrobras	11
VIVT3	Telefônica Brasil	11
ITUB4	Itaú Unibanco	10
ITSA4	Itausa	10
BRFS3	BRF	9
CPLE6	Copel	8
SUZB3	Suzano	8
TIMS3	TIM Brasil	8
BBDC4	Banco Bradesco	7
SANB11	Banco Santander	6

Source: Prepared by the authors

This disparity reveals a scenario of low standardization in ESG reporting processes. The current CVM regulation allows for broad methodological discretion, enabling each company to freely define material topics, their numbers, and the level of detail in its presentation. Although such flexibility is justified by the principle of materiality, it also weakens comparability among companies and may compromise the effectiveness of the socio-environmental risk and performance analyses conducted by stakeholders and investors.

Companies such as Klabin, Lojas Renner, and Engie Brasil adopt a more structured approach, reflecting a high degree of institutional maturity and transparency. In contrast, major financial institutions, such as Santander and Bradesco, declared few indicators, which may indicate a more restricted communication strategy or selective prioritization of ESG topics considered strategic for the sector.

To systematize the topics and identify emphasis patterns, the indicators were classified into five macro-groups, adapted from the critical success factors methodology by Bullen and Rockart (1981): (1) People and Communities (Social), including topics such as diversity, inclusion, labor relations, community impact, and occupational health; (2) Climate Change, Water, and Energy (Environmental), which involves emissions, water management, energy use, and climate transition; (3) Customers, Operations, and Supply Chain (Social): encompassing consumer responsibility, traceability, operational risks, and sustainable logistics; (4) Innovation, Technology, and Cybersecurity (Governance): includes data protection, investments in innovation, and digital security; and (5) Ethics, Integrity, Governance, and Compliance (governance), including anti-corruption practices, codes of conduct, audits, and transparency.

This categorization makes it possible to understand the quantity and nature of the priorities assumed by each company in its institutional ESG communication strategy. The results indicate a significant concentration of indicators in the Social and Environmental macro-groups, reinforcing the perception that these pillars continue to be the most emphasized in the official discourse of corporations.

4.3 Investor Profile and Perceptions on ESG

Table 4 presents a consolidated overview of the sociodemographic and professional profiles of the 145 investors in the sample. The data were organized to highlight the diversity of respondents in terms of gender, age group, education level, market experience, and elements relevant to interpreting perceptions of the ESG

pillars. This characterization allows for a deeper understanding of the individual factors that influence investor sensitivity to environmental, social, and governance topics, as discussed in the following sections.

The sample was characterized by its heterogeneity and high level of qualification, allowing for consistent analyses of the market's perception of ESG practices. The observed diversity aligns with stakeholder theory, which values the plurality of experiences as drivers of innovation, engagement and organizational sustainability.

Table 4 - Profile of Survey Respondents

		Quantity	Percentage
Gender	Male	91	63%
	Female	54	37%
Age Group	20 years old or younger	4	3%
	21 to 30 years old	51	35%
	31 to 40 years old	31	21%
	41 to 50 years old	24	17%
	Over 50 years old	35	24%
Educational Background	Incomplete High School	1	1%
	Completed High School	22	15%
	Bachelor's Degree	55	38%
	MBA/Specialization	39	27%
	Master's Degree	24	17%
	Doctorate	4	3%
Professional Experience	Less than 5 years	25	17%
	Between 5 and 10 years	37	26%
	More than 10 years	83	57%
Experience with Financial Investments	Less than 5 years	85	59%
	Between 5 and 10 years	34	23%
	More than 10 years	26	18%
Investor Type	Third-party asset manager (institutional investor)	11	8%
	Individual investor (own funds)	134	92%

Source: Prepared by the authors

In terms of gender, there was a predominance of male respondents (63%), although female participation (37%) was both significant and enriching, especially considering that different perceptions of risk and value are observed between genders in the ESG context. Regarding the age group, the strong presence of individuals between 21 and 40 years old (56%) stands out, indicating the engagement of generations familiar with digital technologies and more inclined to adopt socio-environmental criteria in their investment decisions. The presence of respondents over 50 years old (24%) further enriches the sample by incorporating insights grounded in greater accumulated experience.

Academic background was high: 85% of respondents held an undergraduate or higher degree, with particular emphasis on the 27% who held an MBA or specialization, and 20% with a master's or doctoral degree. This finding supports the analytical robustness of the sample and justifies the credibility of the responses collected.

Most respondents had more than 10 years of professional experience (57%), which denotes maturity in the corporate environment and a critical capacity to assess ESG strategies. On the other hand, 59% of respondents have less than five years of experience with financial investments, which may indicate the emergence of a new investor profile that is more sensitive to symbolic reputational values and corporate communication, as Shafique et al. (2024) point out.

Notably, 92% of the sample comprised self-managed investors. This predominance reinforces the ethical and subjective nature of investment decisions, which are often anchored in personal convictions rather than institutional guidelines. This scenario aligns with the rise of individual investors as critical and leading actors in the ESG ecosystem, as Bosch and Schmitz-Kießler (2020) argued.

Although the sample had a male majority (63%), female participation (37%) was sufficient for relevant statistical comparisons (Table 5). The analysis of average scores by ESG pillar shows that women consistently assign greater importance to all pillars, Environmental, Social, and Governance, compared to men.

Table 5 – Difference in ESG Perception

ESG Pillar	Male	Female	Difference
Environmental (E)	5,61	6,37	+0,76
Social (S)	5,70	6,39	+0,69
Governance (G)	5,86	6,22	+0,36

Source: Prepared by the authors

These differences are particularly notable in the Environmental and Social pillars, suggesting greater ethical-sustainable engagement and concern for socio-environmental impacts among female respondents than among male respondents. This finding aligns with Barber and Odean (2001), who showed that women tend to exhibit greater risk aversion and consider more non-financial variables in their economic decisions. In the ESG context, this sensitivity may translate into a stronger appreciation for attributes related to purpose, inclusion, social justice, and the environment.

From the Stakeholder Theory perspective (Freeman, 1984), the presence of diverse viewpoints in the decision-making process, including gender diversity, contributes to a broader and more systemic understanding of corporate responsibilities. Higher average scores for women across all three pillars may indicate a deeper internalization of ESG principles, with the potential to influence more demanding and critical investment patterns. This finding reinforces the role of plurality as a strategic asset in shaping a more ethical, transparent, and sustainable financial market.

Despite gender disparities, the governance pillar received the highest overall average score (5.99), indicating that investors, regardless of gender, recognize its value as a foundation of institutional strength and corporate credibility. This finding is consistent with the literature that highlights governance as a prerequisite for the effectiveness of ESG commitment (Eccles & Krzus, 2018; Gillan et al., 2021). Interestingly, governance is the most valued pillar among men, whereas the social pillar stands out among women, suggesting different areas of concern.

Cohen's d value 0.40 between male and female averages represents a moderate effect size, indicating that the observed differences are not trivial. In social and behavioral studies, a d between 0.3 and 0.5 suggests consistent and practically meaningful variations from an interpretive standpoint.

4.4 Thematic Groups: Convergence Between Companies and Investors

The document analysis of the Reference Forms of companies listed in the Corporate Sustainability Index (ISE B3) enabled the categorization of material ESG indicators into five major thematic groups organized according to the logic of critical success factors (Bullen & Rockart, 1981). This structuring facilitated a comparative reading of the themes prioritized by companies and the dimensions most valued by investors.

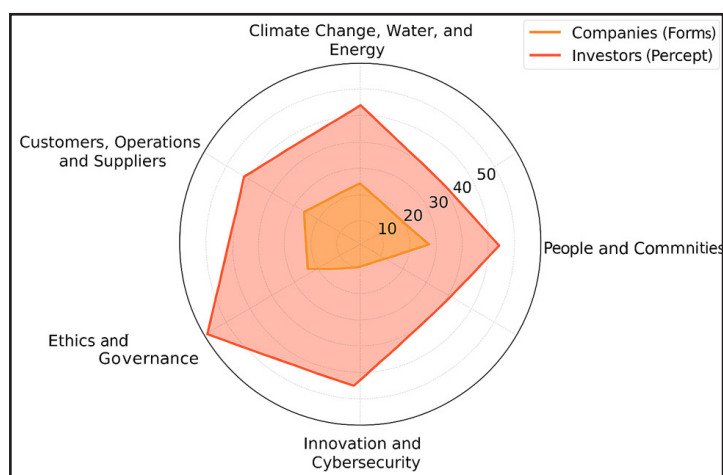
The groups were reorganized based on their alignment with the ESG pillars and presented in the following order: Environmental, Social, and Governance. Thematic groups analyzed: (1) Climate Change, Water, and Energy (Environmental): Includes indicators related to energy transition, carbon emissions, use of natural resources, water and energy efficiency, and climate risk mitigation; (2) People and Communities (Social): Involves diversity, equity and inclusion (DEI), human rights, occupational health and safety, and relations with local communities; (3) Clients, Operations, and Supply Chain (Social): covers product quality and safety, sustainable practices in the value chain, customer responsibility, and service innovation; (4) Ethics, Governance, and Compliance (governance): encompasses topics such as anti-corruption, board independence, accountability, transparency, and integrity policies; (5) Innovation, Technology, and Cybersecurity (governance): covers strategic topics related to digitalization, information security, data intelligence, and technological governance.

The organization of topics into macro-thematic groups aimed to optimize the analysis of the convergence between what companies communicate as a priority and what investors perceive as material for decision-making. This approach aligns with the

studies of Khan, Serafeim, and Yoon (2016), which highlight the importance of sectoral materiality as a link between ESG performance and financial outcomes.

To illustrate this relationship, a Radar Chart (Figure 1) was developed by comparing the frequency with which companies mentioned ESG topics in their forms with the average importance assigned to these same groups by investors. The visualization makes it possible to identify not only points of convergence but also interpretive asymmetries that hinder the alignment between corporate discourse and market expectations.

Figure 1 – ESG Convergence Map: Companies vs. Investors



Source: Prepared by the authors

The radar chart illustrates the perceptual gap between what companies formally communicate in their reference forms and what investors consider relevant in the context of ESG criteria. The visualization highlights important disparities across the three pillars of ESG, reinforcing the limitations of the current application of ESG as an effective investment decision-making criterion.

4.4.1 Environmental Pillar: “Climate Change, Water, and Energy”

The Environmental pillar reveals one of the most significant discrepancies between what companies communicate and what investors actually value. The

thematic group “Climate Change, Water, and Energy” was among the highest-rated by survey respondents, indicating that investors view these dimensions as central to long-term sustainability and to corporate resilience. However, document analysis of the reference forms shows that companies still place insufficient emphasis on these topics in their formal communication.

This misalignment suggests that for many companies, climate and environmental issues are still addressed reactively or peripherally, often linked to regulatory obligations or image strategies, rather than being embedded as core elements of their business models. Such a limited approach compromises transparency and hinders investors’ ability to assess material risks related to the environment, such as extreme weather events, water scarcity, or dependence on non-renewable energy sources.

According to Khan, Serafeim, and Yoon (2016), environmentally material factors are directly associated with companies’ future financial performance. Organizations that internalize these variables into their management practices tend to perform better in the market and exhibit lower risk exposure. Therefore, the absence or superficial treatment of such information in corporate reports reduces its usefulness as a tool for conducting ESG-based investment analyses.

Moreover, Eccles and Klimenko (2019) warned that the gap between environmental discourse and practice weakens the role of ESG reports as a strategic tool. When companies fail to consistently integrate environmental factors into their governance structures and performance metrics, they risk being perceived as engaging in “greenwashing,” which generates mistrust among stakeholders who are attentive to the authenticity of socio-environmental commitments.

In this context, the radar chart reveals the opportunity to advance the maturity of corporate environmental strategy. The growing importance of this topic among investors, especially younger ones engaged with climate issues, places pressure on organizations to rethink their positioning and provide more robust, transparent, and

comparable data regarding their environmental impacts and efforts in mitigation and adaptation.

4.4.2 Social Pillar: “People and Communities” and “Clients, Operations, and Suppliers”

In the Social pillar, a significant mismatch was observed between corporate communication and investor perceptions. Although the thematic group “People and Communities” received the highest score from companies in the document analysis, the data reveal that this emphasis still does not fully meet investor expectations.

This gap highlights a misalignment between institutional discourse and growing social awareness, especially among more educated audiences, who are conscious of the role that organizations play in promoting collective well-being. According to Freeman (1984), Stakeholder Theory reinforces the premise that companies should consider the impact of their decisions on all stakeholders—communities, workers, suppliers, and customers.

However, corporate social actions, often limited to isolated corporate responsibility initiatives, lack strategic depth and indicators that would allow for the assessment of their real impact. The absence of comparable data, verifiable targets, and transparency regarding engagement with communities and sustainable labor relations weakens investors’ analytical capacity and undermines the credibility of reported actions.

Moreover, the group “Clients, Operations, and Suppliers” also shows a significant discrepancy between the importance perceived by investors and the attention it receives in company reports. This aspect is essential for building ethical supply chains, protecting consumer rights, and preventing reputational risk. Nevertheless, it remains underrepresented in most institutional communications, indicating structural limitations in how social criteria are operationalized.

Therefore, the radar chart reveals that companies still struggle to incorporate the social pillar as a central element of their strategic governance. The growing importance of these issues to investors represents both an opportunity and a warning for corporations to advance the maturity and coherence of their social communication and commitments to stakeholders.

4.4.3 Governance Pillar: “Ethics, Governance, and Compliance” and “Innovation, Technology, and Cybersecurity”

Contrary to what is often observed in traditional ESG rhetoric, the radar chart data reveal that in the Governance pillar, companies communicate very little about the themes of “Ethics, Governance, and Compliance” and “Innovation, Technology, and Cybersecurity,” despite the high level of importance investors attribute to these issues.

This result is surprising, as it contradicts the expectation that corporate governance, due to its normative and institutionalized nature, would be one of the most thoroughly detailed pillars in reference form. The group “Innovation and Cybersecurity,” in particular, is among the least addressed by companies, despite its growing relevance in a context of digital risks, cyberattacks, and accelerated technological transformations. The group “Ethics, Governance, and Compliance,” while more frequently mentioned, still falls short of investor expectations, who view these themes as fundamental to corporate credibility, longevity, and resilience.

This disparity highlights a critical gap in organizational communication and raises concerns regarding the effectiveness and authenticity of ESG strategies. As argued by Gillan et al. (2021), sound governance practices are the foundation of the coherent execution of the Environmental and Social pillars. When neglected or superficially addressed, they undermine stakeholder trust and limit a company's ability to respond effectively to growing market demand.

Furthermore, the low emphasis on innovation and digital security may reflect a conservative or reactive view of governance; one more focused on formal rule

compliance than on risk anticipation and the generation of sustainable value. This posture contradicts the principles of strategic and dynamic governance proposed by Eccles and Krzus (2018) and distances companies from actions aligned with the challenges of industry 5.0.

According to Amel-Zadeh and Serafeim (2018), governance inefficiency may also manifest through omission and not just through overstated rhetoric. In this sense, the undercommunication observed in the chart can be interpreted as a silent form of greenwashing, where companies do not explicitly disclose their weaknesses but also fail to provide concrete evidence of progress, leaving investors without reliable parameters for decision-making.

In summary, the results show that within the governance pillar, there is a significant disconnect between what companies communicate and what investors consider a priority. Overcoming this asymmetry requires more than formal adherence; governance must act as a driver of integrity, innovation, and trust, which are the essential pillars of a financial market guided by impact and purpose.

The growing prominence of governance in ESG research reflects a broader shift in the understanding of sustainability in financial markets. Our findings align with this trend, revealing that investors attribute greater importance to governance factors as key drivers of credibility and long-term value. Tan et al. (2025) corroborate this perspective by showing that strong cybersecurity governance enhances corporate market value through reputation and stakeholder confidence. Together, these insights indicate that governance has evolved from a compliance-oriented dimension to a strategic pillar of resilience and of investor trust.

5 CONCLUSION

This study reveals the structural constraints in the effectiveness of ESG as a criterion for risk analysis and value creation among Brazilian companies listed on

the Corporate Sustainability Index (ISE B3). The categorization of material topics into thematic macro-groups, compared with investor perceptions, demonstrates a persistent asymmetry between what companies communicate and what investors value across the three ESG pillars.

In the Environmental dimension, limited disclosure on climate change, energy transition, and natural resource use indicates that these themes remain peripheral to corporate strategy. Such underreporting undermines the credibility of environmental commitments and restricts investors' ability to assess the material risks. In the Social pillar, although diversity and occupational health are frequently highlighted, information lacks depth, measurable indicators, and demonstrable impact elements increasingly demanded by investors seeking authenticity and integrated strategies. In Governance, companies seldom address cybersecurity, innovation, and institutional integrity, despite these topics ranking highly among investor priorities. This gap reveals a critical misreading of emerging risks and weakens ESG's utility as a decision-support tool, suggesting that adherence often reflects reputational convenience rather than a genuine commitment to sustainability.

An additional contribution of this study concerns gender-based differences in perception. Female investors exhibited greater sensitivity across all ESG pillars, especially social, confirming the importance of diversity in decision-making environments. This finding aligns with Zhang (2024), who showed that investors' ESG motivations vary according to sociodemographic, cognitive, and experiential factors. This evidence reinforces the need for diversity and inclusion policies in boards and governance bodies to enhance risk awareness and decision quality.

Applying the critical success factors (CSF) framework advances ESG research beyond descriptive disclosure analysis. The CSF approach highlights which ESG dimensions are genuinely strategic for organizational success, emphasizing materiality and integration among environmental, social, and governance (ESG) themes. It aligns internal priorities with stakeholder expectations, transforming ESG assessments into a

dynamic and actionable framework that links sustainability performance to long-term value creation (Bullen & Rockart, 1981; Esteves, 2004; Irianto & Sudarmadji, 2019).

In summary, ESG remains a valuable conceptual benchmark but has limited effectiveness in guiding business performance and investor decisions. The results indicate a significant mismatch between corporate discourse and market expectations, diminishing ESG's transformative potential. The critique does not target the concept itself but its superficial application, which distances reports from their original goals of transparency and comparability. Overcoming these gaps requires less rhetoric and more evidence, less marketing and more integrated governance, and greater attention to diverse stakeholders' perspectives. The challenge is not to abandon ESG but to rescue it from superficiality, reaffirming it as a credible and strategic instrument that reconciles financial performance with socio-environmental value creation.

6 RESEARCH LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDIES

As with any empirical research, this study has limitations. The document analysis focused on ISE B3 companies, which are already relatively advanced in ESG engagement; therefore, misalignments in less mature firms may be even greater. Moreover, the analysis was restricted to reference forms and official documents, excluding other channels, such as integrated reports or informal communications, that could reveal additional nuances.

Regarding the investor survey, although the sample size ($n = 145$) captured relevant trends, limited segmentation by demographic and professional variables constrains deeper subgroup analysis. The non-probabilistic sampling limits the generalization of results; however, the potential pro-ESG bias of respondents likely makes the observed "governance gap" a conservative estimate, reinforcing rather than weakening the study's conclusions.

These limitations suggest directions for future research. Subsequent studies could expand the samples across sectors and markets, incorporate multiple data sources, and adopt mixed-methods or longitudinal approaches. Further research should explore how factors such as diversity, culture, and ideology shape investors' risk perceptions and value judgments regarding ESG-based investments.

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2. Development of hypotheses or research questions (empirical studies)	✓	✓		
3. Development of theoretical propositions (theoretical work)	✓	✓	✓	✓
4. Theoretical foundation / Literature review	✓	✓	✓	✓
5. Definition of methodological procedures	✓	✓	✓	✓
6. Data collection	✓	✓		
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8. Analysis and interpretation of data	✓	✓	✓	✓
9. Critical revision of the manuscript		✓	✓	✓
10. Manuscript writing	✓	✓	✓	✓

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Data availability statement

Data will be available upon request