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BEHIND THE GREEN CURTAIN: CORPORATE GOVERNANCEANDGREENWASHING IN BRAZILIAN FIRMS

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Introdução
In the corporate sphere, there is a growing demand for detailed information about companies' performance in environmental, social, and governance (ESG) matters (Arvidsson & Dumay, 2022). However, a potential threat to this trend is the discrepancy that may arise between the disclosure of sustainable actions and their actual implementation. This suggests a misalignment between companies' communication strategies and their real practices—a phenomenon referred to as greenwashing.
Problema de Pesquisa e Objetivo
This study explores whether corporate governance mechanisms influence greenwashing practices in the Brazilian context, recognizing greenwashing as a consequence of agency problems.
Fundamentação Teórica
According to Bernini and La Rosa (2024), greenwashing can be characterized as a management tool to promote the interests of managers (agents) at the expense of shareholders (principals) and, in this case, also at the expense of other social actors. Governance mechanisms, grounded in the principles of Agency Theory, play a crucial role in mitigating greenwashing practices, as argued by Yu et al. (2020).
Metodologia
The sample consisted of 224 observations from 71 Brazilian companies, covering the years 2018 to 2021 (4 years). The "ESG Controversies" score provided by Refinitiv® Eikon was used to measure the level of greenwashing practices. Also, this study employed regression analysis. Separate models were estimated, each considering the independent variables individually, in addition to a full model that includes all variables. The analysis was conducted with the support of STATA software.
Análise e Discussão dos Resultados
The analysis reveals that larger boards, a higher proportion of independent directors, and the existence of sustainability committees are positively associated with greenwashing among IBRX-100 companies. Conversely, the assurance of sustainability reports exerts a significant negative impact on greenwashing. These results support the assumptions of Agency Theory, illustrating that corporate governance mechanisms play a critical role in shaping greenwashing behavior in Brazilian firms.
Considerações Finais
From a practical standpoint, companies should strategically assess board composition, limit board size to approximately eight members, and ensure the selection of independent directors aligns with governance objectives. Moreover, the mere presence of sustainability committees should not be equated with effectiveness, highlighting the need for deeper evaluations of their function. Finally, stakeholders should look beyond the green curtain and care-fully evaluate whether companies' sustainability claims reflect real actions, rather than relying on their outward appearance.
Referências
Arvidsson, S., & Dumay, J. (2022). Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice? Business Strategy and the Environment, 31(3), 1091–1110; Bernini, F., & La Rosa, F. (2024). Research in the greenwashing field: concepts, theories, and potential impacts on economic and social value. Journal of Management and Governance, 28(2), 405–444; Yu, E. P., Luu, B. Van, & Chen, C. H. (2020). Greenwashing in environmental, social and governance disclosures. Research in International Business and Finance, 52, 101192.

Palavras Chave
Greenwashing, Board structure, Agency Theory.

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1 INTRODUCTION

In the corporate sphere, there is a growing demand for detailed information about companies' performance in environmental, social, and governance (ESG) matters (Arvidsson & Dumay, 2022). However, a potential threat to this trend is the discrepancy that may arise between the disclosure of sustainable actions and their actual implementation. This suggests a misalignment between companies' communication strategies and their real practices—a phenomenon referred to as greenwashing.

Governance mechanisms, grounded in the principles of Agency Theory, play a crucial role in mitigating greenwashing practices, as argued by Yu et al. (2020). However, while these mechanisms have been widely studied in international contexts, research on greenwashing in emerging economies such as Brazil remains limited.

Therefore, the purpose of this paper is to investigate whether corporate governance mechanisms influence greenwashing practices in the Brazilian context. To achieve the objective, we examined 71 companies listed on B3 (Brasil, Bolsa, Balcão), with 224 observations from 2018 to 2021.

2 HYPOTHESIS DEVELOPMENT

Fama and Jensen (1983) state that board independence is a critical factor influencing the board's competence to safeguard investors' interests. Yu et al. (2020) found that a higher proportion of independent board members is significantly associated with a reduction in greenwashing practices across various ESG dimensions, based on a global sample of companies.

Similarly, studies have found that a higher proportion of independent board members is associated with reduced levels of greenwashing in European (Erol & Çankaya, 2023), Chinese (Hu et al., 2024; Ma & Ahmad, 2024), and Indian companies. The study by Ghitti et al. (2023) presented divergent results by identifying that a higher proportion of independent board members is positively associated with greenwashing in U.S. companies. Therefore:

H1: Board independence has a negative effect on greenwashing practices.

The literature on board size presents two opposing views. One of them, grounded in Agency Theory, argues that larger boards face coordination problems, are less efficient, and increase agency costs (Fama, 1980; Jensen & Meckling, 1976). The other view, based on the Resource-Based Theory, suggests that larger boards are more diverse, represent a broader range of interests, and foster more balanced and higher-quality decision-making (Liao et al., 2018; Pfeffer & Salancik, 1981).

Studies by Yu et al. (2020), Erol and Çankaya (2023) and Hu et al. (2024) showed that board size had no significant impact on greenwashing practices, even across different organizational contexts. The study by Ghitti et al. (2023) revealed a negative association between board size and greenwashing practices. According to the authors, the presence of a larger number of board members contributes a wide range of expertise in sustainable performance, which in turn helps reduce inappropriate greenwashing practices. On the other hand, Sensharma et al. (2022) and Gidage et al. (2024), in their analysis of Indian companies, observed a positive correlation between board size and greenwashing practices. Therefore, based on Agency Theory, the following hypothesis is proposed:

H2: Board size has a positive effect on greenwashing practices.

Furthermore, the existence of a Corporate Social Responsibility Committee—also referred to as a Sustainability Committee—or the appointment of a director dedicated to these matters reflects an active strategic approach by the company toward stakeholder engagement (Ullmann, 1985). According to Driss et al. (2024), the existence of such a committee indicates the board's commitment to sustainable development.

Previous studies have highlighted the positive influence of the presence of a sustainability committee on the level of non-financial information disclosure (Adel et al., 2019; Gallego-Álvarez & Pucheta-Martínez, 2020). Lozano and Martínez-Ferrero (2022) found that the sustainability committee leads to better sustainability performance of firms located in both emerging and developed countries. There is a gap in the literature regarding the effect of the presence of a Sustainability Committee on greenwashing practices. However, the studies by Erol and Çankaya (2023) and Ma and Ahmad (2024) found that the presence of such a committee is linked to lower levels of greenwashing. Therefore:

H3: The presence of a sustainability committee has a negative effect on greenwashing practices.

Management may selectively disclose information that enhances the company's sustainability reputation, particularly through the sustainability report (Alomran & Alsahali, 2023) — a document that, in most countries, remains voluntary and highly discretionary. According to Agency Theory, assurance provided by independent third parties can address the limitations faced by external shareholders in directly monitoring the activities of insiders (Forst & Hettler, 2019). Independent assurance, also known as external assurance, is a key element in the external evaluation of Corporate Social Responsibility (CSR) disclosures, reflecting stakeholders' pressure for greater credibility in sustainability information (Martínez-Ferrero & García-Sánchez, 2017).

Free et al. (2024) state that the importance of sustainability assurance in combating greenwashing lies in auditing's potential to verify and validate sustainability claims, thereby empowering stakeholders to make informed decisions and differentiate genuine sustainability efforts from mere greenwashing. The authors argue that the literature is still underexplored regarding the relationship between assurance and greenwashing. Despite this, Ruiz-Blanco et al. (2022) identified that the presence of an independent assurance statement in a company's sustainability report had a negative influence on the practice of greenwashing among U.S. firms. Therefore:

H4: Independent assurance of sustainability reports has a negative effect on greenwashing practices.

3 METHOD

The sample consisted of 224 observations from 71 Brazilian companies, covering the years 2018 to 2021 (4 years). The "ESG Controversies" score provided by Refinitiv® Eikon was used to measure the level of greenwashing practices. In this case, the level of greenwashing practice (GREENW) is measured using Equation 1. The result will range from 0 to 100.

GREENW = 100 – ESG Controversies Score (Equation 1)

This proposed metric is an innovation as a proxy to measure companies' greenwashing practices. In the Progress Report on Greenwash: Responding to the European Commission's request for input on greenwash risks and the supervision of sustainable finance policies, published in 2023, the European Securities and Markets Authority (ESMA) proposes to operationalize the monitoring of greenwash through quantitative indicators based on financial market data, with the aim of quantifying the frequency of potential greenwash incidents (ESMA, 2023). According to the ESMA, one viable approach is to use ESG controversy data, which refers to claims of misleading sustainability claims made by various stakeholders and disseminated through local or international media, allowing for better tracking of greenwashing claims. The variables used in the model are detailed in Table 1.

Table 1 – Description of variables

Variable	**Acronym (variable)**	**Measurement**	**Expected Effect**	**Previous work**
Dependent Variable				
Corporate Greenwashing	GREENW	100 – ESG Controversy Score. The higher the score, the greater the company's greenwashing practice.	N/A	Research suggestion based on ESMA (2023)
Independent Variables				
Board independence	INDEP	Proportion of independent board members	Negative	Yu et al. (2020)
Board size	SIZE	Total number of board members	Positive	Yu et al. (2020)
Presence of a sustainability committee	COMMI	Dummy: 1 if there is a committee; 0 otherwise	Negative	Erol and Çankaya, (2023)
Sustainability report assurance	ASSUR	Dummy: 1 if there is an independent assurance statement of the sustainability report; 0 otherwise	Negative	Ruiz-Blanco et al. (2022)
Control Variables				
Firm size	FIRM	Logarithm of the Firm's Total Assets	Negative	Erol and Çankaya, (2023)
Return on Equity	ROE	Net Income/Equity	Positive	Ghitti et al. (2023)
Leverage	LEV	Net Debt/EBITDA	Negative	Ghitti et al. (2023)

Source: authors.

This study employed regression analysis. The econometric model used is represented by Equation 2. Separate models were estimated, each considering the independent variables individually, in addition to a full model that includes all variables. The analysis was conducted with the support of STATA software.

$GREENW_{i,t} = \beta_0 + \beta_1.INDEP_{i,t} + \beta_2.SIZE_{i,t} + \beta_3.COMMI_{i,t} + \beta_4.ASSUR_{i,t} +$ 69 $\beta_5.FIRM_{i,t} + \beta_6.ROE_{i,t} + \beta_7.LEV_{i,t} + \varepsilon$ (Equation 2)

4 RESULTS AND DISCUSSION

The mean value of the variable GREENW is 14.59, which is considered low in relation to the maximum index value (100). This suggests that, on average, Brazilian companies listed on the IBRX-100 exhibit a relatively low level of greenwashing practices. It is worth noting that the maximum value observed was 98.62, indicating the presence of large Brazilian companies that are heavily engaged in greenwashing practices. This result suggests that, despite the overall mean indicating relatively low levels of greenwashing behavior, there is a significant subgroup of companies within the IBRX-100 that stand out for adopting high levels of greenwashing strategies

Considering corporate governance mechanisms as influencing greenwashing practices from the perspective of Agency Theory, Table 2 presents the regression results. In Model 1.1, the variable INDEP was found to be positively significant at the 5% level, indicating that a higher proportion of independent board members positively influences greenwashing practices among Brazilian companies. The variable SIZE, as observed in Model 1.2, showed positive significance at the 5% level.

Table 2 – Multivariate analysis

Variable	**Model 1.1**	**Model 1.2**	**Model 1.3**	**Model 1.4**	**Model 1.5**	**Hypothesis**
INDEP	0.16**				0.20**	*H1* (-)
SIZE		1.47**			1.81**	*H2* (+)
COMMI			6.30*		7.43*	*H3* (-)
ASSUR				-3.18	-7.01*	*H4* (-)
FIRM	32.93***	29.53***	31.82 ***	33.95***	32.99***	
ROE	-0.06	-0.05	-0.07*	-0.06	-0.06*	
LEV	-0.52	-0.47	-0.91*	-0.88	-1.14**	
F test	23.75	23.63	19.85	19.12	14.47	
p value	0.0000	0.0000	0.0000	0.0000	0.0000	
R^2	0.3145	0.3135	0.2884	0.2807	0.3550	
VIF (Mean)	1.02	1.02	1.04	1.04	1.13	
Endogeneity	No	No	No	No	No	

Source: authors. Note: ***p<0.01. **p<0.05. *p<0.10.

In Model 1.3, COMMI was positively significant at the 10% level, suggesting that the presence of a sustainability committee positively influences greenwashing behavior among Brazilian companies. In Model 1.4, the variable ASSUR didn't show statistical significance, indicating that the assurance of sustainability reports had no relevant or consistent impact on the dependent variable (GREENW). When considering all independent variables simultaneously (Model 1.5), the results remain similar, with a slight change: the variables INDEP, SIZE, and COMMI remained positively significant at the 5%, 5%, and 10% levels, respectively, while the variable ASSUR became significant at the 10% level.

Our findings confirm the validity of hypotheses H2 and H4. However, all the corporate governance mechanisms analyzed exerted a significant influence on greenwashing practices in the Brazilian context. Regarding H1, our results reject the hypothesis, as we identified a positive and significant influence of board independence on greenwashing practices in Brazilian companies. This finding contradicts previous studies (Erol & Çankaya, 2023; Gidage et al., 2024; Hu et al., 2024; Ma & Ahmad, 2024; Sensharma et al., 2022).

Regarding H2, the results confirm that board size has a positive effect on greenwashing practices in the Brazilian context. This finding aligns with the study by Taglialatela et al. (2024) but contradicts the findings of Ghitti et al. (2023). In line with Agency Theory, larger boards tend to face coordination challenges and slower decision-making processes (Sekarlangit & Wardhani, 2021). Harjoto and Wang (2020) argue that oversized boards may lead to issues such as groupthink, lack of innovation, and increased conflicts of interest.

Concerning H3, the study reveals a positive and significant relationship between the presence of a sustainability committee and greenwashing, leading to the rejection of the hypothesis. This result contrasts with those of Erol and Çankaya (2023) and Ma and Ahmad (2024). Given that sustainability committees are a relatively underexplored variable within the greenwashing literature, this limitation poses challenges to drawing more precise and conclusive insights.

Regarding H4, the results indicated that independent assurance of sustainability reports has a negative and significant influence on greenwashing practices in Brazilian companies, confirming the hypothesis. This finding suggests that independent assurance plays a crucial role in mitigating deceptive practices. Similarly, the study by Ruiz-Blanco et al. (2022), conducted with U.S companies, also revealed that independent assurance is associated with a significant reduction in greenwashing, reinforcing its effectiveness as a governance mechanism in combating fraudulent practices, as predicted by Agency Theory

5 CONCLUSION

We examined the impact of specific governance mechanisms, such as board independence, board size, the presence of a sustainability committee and independent assurance. More specifically, our results indicate that board independence, board size, and the presence of a sustainability committee all increase greenwashing in Brazilian firms, while independent assurance helps curb it.

This study has limitations: it focuses solely on Brazil, so its findings may not apply to other institutional contexts, and it examines only a subset of governance factors. Future research should explore additional board attributes—such as director age, expertise, gender diversity, and CEO duality—to better understand their impact on greenwashing.

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