

ENVIRONMENTAL DISCLOSURE AND FIRM VALUE: THE MODERATING ROLE OF BOARD SIZE

Tutik Arniati¹, Muslichah Muslichah^{2*}, Nunung Nurastuti³

^{1,2,3}STIE Malangkecewara, Indonesia

*Corresponding Author:

muslichahmachali21@gmail.com

Abstract

This study aims to examine the impact of environmental disclosure on firm value, with board size serving as a moderating variable. The study population comprises state-owned Enterprises (SOEs) listed on the Indonesian Stock Exchange from 2019 to 2023. A sample of 14 SOEs was acquired through purposeful sampling. The research findings indicate that environmental disclosure does not influence business value, and board size does not alter the link between these two factors. Despite the study's findings indicating that direct and moderating impacts are insignificant, this does not imply that environmental disclosure lacks importance. Organizations must enhance transparency and the execution of sustainability policies to generate enduring value. The government and regulators may contemplate more robust policies that connect environmental performance with economic incentives, so enhancing the market's appreciation of environmental disclosure and augmenting corporate value.

Keywords: Environmental Disclosure, Firm Value, Board Size

1. Introduction

In recent years, environmental issues have increasingly emerged as a significant concern for many corporate stakeholders, including investors, governments, customers, and others. The growing recognition of environmental conservation's significance has prompted firms to prioritize not only financial profit but also the environmental consequences of their activities. Concomitant with this heightened knowledge, there is a requirement for corporations to enhance transparency in revealing their environmental policies and practices.

The inclusion of environmental information in the sustainability report reflects the company's dedication to environmental responsibility. This report encompasses details regarding environmental policy, energy efficiency, carbon emissions, waste management, and natural resource conservation initiatives undertaken by the company. This level of transparency is anticipated to enhance the company's accountability to stakeholders and foster a favorable public perception. Moreover, environmental disclosure can yield financial advantages for corporations. Investors generally react favorably to corporations that demonstrate environmental awareness, as these entities are perceived to possess more sustainable long-term potential. Organizations with explicit and open environmental strategies are more inclined to secure broader funding opportunities and attract investors that prioritize sustainability.

Prior research on the impact of environmental disclosure on corporate value continues to exhibit inconsistency. Numerous research indicate that environmental disclosure positively influences firm value (Setiany, 2021; Setiadi & Suhardjanto, 2017; Ardillah & Chandra, 2021; Suretno et al., 2022; Cai et al., 2023; Amalia et al., 2023; Komara et al., 2024). Additional research indicates a detrimental impact (Megananda & Prastiwi, 2022;

Shifa & Harto, 2024). In contrast, additional research indicate that environmental disclosure does not influence business value (Utomo et al., 2020; Deswanto & Siregar, 2018; Hidayat et al., 2023; Yusra & Sulistyowati, 2023). This contradiction indicates the presence of other variables that may affect the impact of environmental disclosure on corporate value.

Governance is a variable that can moderate this influence. Governance serves as a moderating variable extensively examined through diverse metrics, such as executive ownership and institutional ownership (Wu et al., 2020), board independence (Al Amosh & Khatib, 2022), board of commissioners' size, the ratio of independent commissioners, managerial ownership, and auditor reputation (Nofianti et al., 2018). This study employs the board of directors as a moderating variable because to its significant involvement in the company's strategic decision-making, particularly with sustainability and environmental disclosure standards. Organizations with extensive boards typically possess a greater array of perspectives and experience, which can facilitate the more efficient execution of sustainability strategies (Caputo et al., 2021; Saha & Khan, 2024; Wuaku et al., 2025)

Previous studies have utilized various corporate governance indicators to investigate the relationship between environmental disclosure and firm value, including independent directors, audit committees, and managerial ownership. However, studies specifically examining the impact of board size as a moderating factor are limited. Moreover, most previous studies have primarily focused on publicly traded companies as a whole, without distinguishing between other types of firms. This study was conducted on SOEs that are considered to have high social responsibility due to their involvement with government policies and public expectations. This study will contribute by examining environmental disclosure in SOEs that has rarely been explored in previous research

This study aims to close a theoretical and empirical gap by investigating the moderating effect of board size on the relationship between environmental disclosure and firm value within SOEs. This will provide insights into how internal governance mechanisms affect sustainability outcomes in organizations with public mandates. This study is anticipated to add to the body of knowledge on corporate governance and policy debates over the function of SOEs in advancing environmentally friendly business practices. Based on the previous explanation, two problem formulations can be formulated: (1) does environmental disclosure influence firm value? (2) does the size of the board of directors moderate the influence of environmental disclosure on firm value?

2. Theoretical Background

2.1 Stakeholder Theory

Freeman (1984) asserts that a company's longevity primarily depends on its ability to meet the diverse interests of stakeholders. Stakeholder theory posits that corporations bear responsibility not solely to shareholders, but to all stakeholders, encompassing both internal and external parties. Stakeholders have a crucial influence in a company's sustainability. Stakeholders possess the authority to regulate the resources essential for the company's operating activity. Consequently, firms must cultivate connections with stakeholders by addressing their wishes and requirements, particularly those stakeholders who are impacted by or can influence the company's activities in attaining its objectives.

2.2 Legitimacy Theory

Legitimacy theory asserts that companies disclose social responsibility to get acceptance from the communities in which they function. This idea posits that corporations must match their actions with social norms and values to gain acceptance within their surroundings. Legitimacy theory posits that an organization can only endure if the society in which it functions perceives that the organization adheres to a value system aligned with the societal value system.

2.3 Signaling Theory

Signaling theory explains how company management, facing asymmetric information, can communicate signals to other stakeholders to reduce uncertainty. Communicating signals to investors about the company's prospects is a strategy to mitigate this information asymmetry (Guo & Huang, 2024). Company management, as an internal entity, have a superior understanding of the organization's operating actions and future prospects compared to external parties. To address this issue and mitigate the information asymmetry, one potential solution is to provide signals to external stakeholders of the organization. The signals sent may consist of financial or non-financial reporting, which external parties might utilize to assess the company's future prospects.

2.4 Environmental Disclosure

Environmental disclosure is providing stakeholders with information regarding a company's environmental performance and the impact of its activities on the environment. Companies that excel in environmental performance and have robust environmental policies or strategies typically produce more comprehensive environmental disclosures to tell investors about their environmental initiatives. Environmental disclosure serves to persuade stakeholders of the company's commitment to environmental stewardship. Organizations that provide environmental disclosures can be identified through sustainability reports developed in accordance with the Global Reporting Initiative (GRI) Standards.

2.5 Firm Value

The value of a firm signifies the market's evaluation of a company's whole worth, including its operational performance, future potential, and inherent hazards. Enhancing the company's value equates to augmenting shareholder welfare, which is the primary objective of the organization. The company's and shareholders' prosperity is reflected in the stock price, resulting from investment decisions, funding, and asset management (Bhaskaran et al., 2024). The valuation of a corporation can affect investor responses in decision-making; so, attaining elevated stock values is crucial for Shakorniya (et al., 2025).

2.6 Board Size

The Board of Directors consists of members elected by shareholders to oversee, direct, and formulate strategic policies for a corporation or organization. The board of directors, as a vital organ, must execute its functions in accordance with relevant provisions, adhering to the principles of transparency, accountability, responsibility, independence, and fairness in fulfilling its duties and responsibilities for the benefit of the Company. More extensive boards are frequently linked to enhanced oversight, promoting transparency and accountability (Al Naim et al., 2025). Expansive boards comprising

people from varied expertise can augment innovation and corporate strategy (Sierra-Morán et al., 2024).

2.7 Hypothesis Development

2.7.1 The influence of environmental disclosure on firm value

Environmental disclosure positively impacts corporate value by enhancing openness and fostering investor trust. Firms that transparently disclose their environmental policies and performance exhibit a dedication to sustainability, thereby mitigating the danger of asymmetric information and enhancing their appeal to investors. Investors generally favor companies with a defined sustainability plan, since they are perceived to be better equipped to manage future environmental and regulatory concerns. Furthermore, companies that effectively report environmental information frequently obtain more favorable access to funding from institutional investors. According to the legitimacy theory, businesses must acquire and preserve social legitimacy to thrive by demonstrating a dedication to environmental concerns.

Moreover, environmental disclosure enhances the company's reputation and competitiveness. Organizations exhibiting environmental responsibility might attract a greater number of customers and business partners who favor eco-friendly products or services. This can enhance client loyalty and broaden market share, so positively influencing the company's revenue and profitability. Moreover, organizations that adopt effective environmental policies typically exhibit greater efficiency in resource utilization and waste management, potentially leading to reduced operational expenses over time. The amalgamation of these elements renders environmental disclosure a lucrative strategy for enhancing company value. As signalling theory emphasises, disclosure of environmental information serves as a good signal to the market, particularly to investors. Prior studies have demonstrated that environmental disclosure positively influences firm value (Setiany, 2021; Setiadi & Suhardjanto, 2017; Ardillah & Chandra, 2021; Suretno et al., 2022; Cai et al., 2023; Amalia et al., 2023; Komara et al., 2024). According to the preceding description, the initial hypothesis of this investigation might be articulated as follows: *H1: Environmental disclosure positively influences firm value.*

2.7.2 The influence of environmental disclosure on firm value, with board size acting as a moderating variable.

The size of the board can enhance the impact of environmental disclosure on firm value, as a larger board possesses greater resources, experience, and diverse viewpoints for overseeing and endorsing sustainability initiatives. By increasing its membership, the board can guarantee that the company transparently publishes environmental facts and enacts effective sustainability measures. The varied expertise and backgrounds on a broader board enable the company to better address investor and stakeholder needs concerning sustainability, therefore improving the company's reputation and market confidence. This can attract additional investors who prioritize environmental considerations and enhance corporate value. The signalling theory states that a larger board can enhance the market's and investors' perception of environmental disclosure, ultimately raising the company's worth.

In addition, a larger board can offer enhanced oversight of management in executing environmental strategies, ensuring that disclosures are substantive and genuinely indicative of the company's dedication to sustainability. A larger board increases the likelihood of robust ties with regulators and other stakeholders, facilitating the

management of environmental risks and the acquisition of incentives from government sustainability policies. A larger board size enhances the influence of environmental disclosure on firm value by improving the effectiveness of implementation and the credibility of the disclosed information. The legitimacy theory states that for enterprises to continue operating sustainably, they must demonstrate that their actions align with social standards. A larger board makes understanding social dynamics and external factors, such as environmental issues, easier. According to the above explanation, the second hypothesis can be articulated as follows: *H2: The board size enhances the impact of environmental disclosure on firm value.*

3. Methods

This study uses a causal quantitative methodology. This approach allows the study to evaluate the moderating effect of board size and investigate the directional relationship between environmental disclosure and business value. This study's population comprised all State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange, amounting to 44 businesses. The employed sampling technique was purposive sampling, which is predicated on specific criteria aligned with the research aims. The criteria for sample selection are: (1) State-Owned Enterprises (SOEs) that provide comprehensive annual financial reports from 2019 to 2023, and (2) SOEs that issue sustainability reports within the same timeframe (2019-2023). State-Owned Enterprises that fail to satisfy these criteria will be omitted from the sample. According to these criteria, the final count of research samples comprised 14 companies with a cumulative total of 70 observations. The operational definitions and measurements of each variable are presented in Table 1 below.

Table 1. Operational Definition and Measurement Variables

Variable	Operational Definition and Measurement
Environmental disclosure	Environmental disclosure refers to the information a corporation provides about its environmental impacts, policies, and actions for environmental management. $EnDi = \frac{\sum \text{Disclosed Environmental Items}}{\sum \text{Required Disclosed Environmental Items}}$
Firm value	The firm value represents the market price or valuation of a company, reflecting investor estimates of its growth prospects and financial performance. This study measures business value using the Tobin's Q ratio. $\text{Tobin's } Q = \frac{\text{Equity Value} + \text{Equity} + \text{Liability Market value}}{\text{Total Assets Replacement Value}}$
Board Size	The Board of Directors is a corporate entity that represents shareholders and is accountable for management and strategic decision-making. $\text{Board Size} = \text{Number of members of the board of directors}$

4. Results and Discussion

4.1 Descriptive Statistics

Table 2. Descriptive Statistics

	ENVI	FV	BS
Mean	0.457628	0.604636	5.915254
Median	0.437500	0.614981	6.000000
Maximum	1.000000	0.878640	9.000000
Minimum	0.000000	0.276103	4.000000
Std. Dev.	0.279433	0.177613	1.178663
Skewness	0.209891	-0.169307	1.120613
Kurtosis	1.770153	1.759500	3.973855
Jarque-Bera	4.151489	4.064855	14.67991
Probability	0.125463	0.131017	0.000649
Observations	59	59	59

Table 2 above presents descriptive statistics for the data of 14 companies that constitute the research samples. The findings indicate that the mean values for the examined variables are as follows: environmental disclosure is 0.457628, company valuation is 0.604636, and board size is 5.915254. Median or central value of the company data. The findings indicate that the median values for the examined variables are as follows: environmental disclosure is 0.437500, firm value is 0.614981, and board size is 6.000000. The highest (maximum) value achieved for environmental disclosure is 1.000000, firm value is 0.878640, and board size is 9.000000. The minimal value for environmental disclosure is 0.000000, company valuation is 0.276103, and board size is 4.000000.

4.2 Hypothesis Testing

Table 3 below presents the statistical findings concerning the direct impact of environmental disclosure on corporate value, together with the moderating effect of board size on the link between these two variables.

Table 3. The Direct Effect of Environmental Disclosure on Firm Value and Moderating Role of Board Size

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.718039	0.042629	16.84397	0.0000
ENVI	-0.330306	0.230545	-1.432719	0.1575
ENVI_BS	0.014270	0.041098	0.347224	0.7297
R-squared	0.162678	Mean dependent var		0.604636
Adjusted R-squared	0.132774	S.D. dependent var		0.177613
S.E. of regression	0.165402	Akaike info criterion		-0.711371
Sum squared resid	1.532031	Schwarz criterion		-0.605734
Log likelihood	23.98546	F-statistic		5.439957
Durbin-Watson stat	0.576251	Prob(F-statistic)		0.006934

Table 3 indicates that the impact of environmental disclosure on business value has a probability value of 0.1575. This value is statistically insignificant as it surpasses the probability of 0.05. This data suggests that environmental disclosure does not influence firm value, hence rejecting H1.

As indicated in Table 3, Board Size does not modify the association between environmental factors and Firm Value, as evidenced by the interaction variable analysis between environmental factors and Board Size, which yielded a Prob value of 0.7297, beyond the threshold of 0.05. It can be inferred that H2 is rejected.

4.3 Discussion

The study's findings demonstrate that environmental disclosure does not significantly impact corporate value. Furthermore, the results of this study indicate that the size of the board of directors does not influence the relationship between environmental disclosure and firm value. This negligible effect may result from investors' limited attention to environmental information when evaluating corporate performance, particularly in the state-owned enterprise sector, which frequently benefits from government assistance. Consequently, sustainability considerations may not be paramount in investment decisions. Investors typically prioritize financial factors, like as profitability and operational efficiency, over environmental considerations, which tend to influence business value in a long-term and indirect manner.

Moreover, while an expanded board size may enhance corporate governance, it does not inherently motivate corporations to proactively disclose environmental information as a means to augment company value. The variety in the number of board members does not inherently indicate the efficacy of decision-making, particularly if it lacks the backing of quality and independence within the board. In numerous instances, the strategic decisions of state-owned enterprises remain subject to governmental rules; hence, a board with a greater membership does not invariably enhance the impetus to associate environmental transparency with augmented corporate worth.

Moreover, regulatory issues and market conditions also affect the link identified in this study. In emerging nations, regulations that associate environmental disclosure with economic incentives remain few. Consequently, the disclosure of environmental information has not substantially influenced business value, as stakeholders do not regard it as a critical element in evaluating risk and investment opportunities. In several instances, environmental disclosure is perceived more as a matter of regulatory compliance than as an integral component of a business plan that might enhance corporate competitiveness.

Despite the lack of significance in the link identified in this study, it does not imply that environmental disclosure is unimportant. Transparency about environmental factors remains essential for generating long-term value, enhancing business reputation, and fulfilling the expectations of stakeholders who are more focused on sustainability. Consequently, corporations must persist in enhancing the quality of environmental disclosures.

These findings offer important insights into signaling, legitimacy, and stakeholder theories. The lack of a discernible impact implies that investors do not yet view environmental disclosure in SOEs as a reliable indicator of future value, which diminishes the signaling power of the disclosure. It also suggests that, without market or regulatory pressure, board size alone does not increase a company's legitimacy through environmental openness. Furthermore, the results show that SOEs can put financial

objectives and governmental directives ahead of wider stakeholder expectations, limiting stakeholder theory's usefulness

5. Conclusion

The findings of this study demonstrate that environmental disclosure has no impact on corporate value. The size of the board of directors did not influence the relationship between environmental disclosure and firm value in SOEs. This research underscores that sustainability factors remain a secondary consideration for investors in decision-making, particularly in sectors receiving government backing. Furthermore, while an expanded board size may enhance corporate governance, it does not inherently promote greater transparency in environmental disclosures or prioritize it as a fundamental approach for augmenting firm value.

This study's findings enhance the academic literature in multiple dimensions. First, this study enriches the understanding of the relationship between environmental disclosure and firm value, especially in the context of SOEs. The findings indicating the lack of importance in the relationship suggest that Signalling Theory may not consistently be applicable in the setting of firms receiving government backing, where investment decisions are not entirely contingent upon sustainability transparency criteria.

Furthermore, this study's results have practical consequences for multiple stakeholders, including corporate management, investors, and regulators. This conclusion indicates that, for SOE management, while environmental disclosure does not directly affect corporate value, sustainability transparency is crucial for preserving reputation and ensuring regulatory compliance in the long run. Companies are encouraged to enhance the quality of environmental disclosure by prioritising not only administrative compliance but also more effective engagement with stakeholders. These findings suggest that, for investors, investment decisions regarding SOEs are mostly influenced by financial variables and government policies rather than sustainability disclosures. Consequently, investors concerned with environmental issues can promote enhanced sustainability transparency in companies via market pressure mechanisms and active participation in corporate policies. These findings also suggest that regulators and policymakers must implement more robust legislation to connect environmental disclosure with economic incentives, thereby enhancing companies' motivation to improve sustainability transparency.

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