

Original Research Article

Good Corporate Governance and Environmental Disclosure: The Moderating Role of the Sustainability Committee

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Abstract

This study investigates how elements of good corporate governance (GCG) affect environmental disclosure as a manifestation of corporate environmental responsibility, with the sustainability committee examined as a moderating variable. A quantitative research design was employed using a moderated regression analysis. The study relies on secondary data obtained from 110 basic materials sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period. Data analysis was conducted using SPSS Statistics version 26. The findings reveal that domestic institutional investors and institutional investors from developed countries positively influence the extent of environmental disclosure. In contrast, institutional investors from developing countries, board size, and gender diversity do not demonstrate a significant effect. The sustainability committee strengthens only the relationship between board size and environmental disclosure, while it does not moderate the effects of the other governance variables. This study extends prior research on the linkage between corporate governance mechanisms and environmental reporting. The existence of a sustainability committee reflects a company's commitment to integrating sustainability principles into its policies and operational strategies, aligning corporate activities with the Sustainable Development Goals (SDGs) through the pursuit of balanced economic, social, and environmental performance.

Keywords: Basic Material; environmental disclosure; good corporate governance; sustainability committee

1. Introduction

An important shift that has been observed, especially in the last few years, is the changing dominance of the business sector to consider sustainability and corporate social responsibility. According to Hilmi and Mutia (2020), the business sector has matured beyond simply making a profit and is learning to deal with the adverse effects (and negatives) of environmentally detrimental industries. One of the avenues that can be used to gauge a company's environmental performance is through environmental disclosures. Environmental disclosures are the reporting of the environmental impacts and consequences of company activities in a consistent and structured manner (Assiva and Kaharti, 2021; Choiriah and Ria,

2020; Saragih et al., 2021). An organization's environmental activities must be disclosed to demonstrate its commitment to protecting the environment (Acar et al., 2021). Environmental disclosures show the accountability and responsibility that the firm possesses, and indicate that sustainability, corporate social responsibility, and ethical practices are integrated into the firm's operations.

In Indonesia, social and environmental responsibilities for businesses fall under the provisions of Law No. 40 of 2007 on Limited Liability Companies, which for this purpose cites Article 74, Social and Environmental Responsibility (OJK, 2007). Subsequently, the government issued Regulation of the Minister of Law and Human Rights No. 47 of 2012 on Social and Environmental Responsibility of Limited Liability Companies, which aims to promote the economy while vertically integrating the quality of life with the bio-physical environment (BPK, 2012). Additionally, the Financial Service Authority issued POJK No. 51/POJK.03/2017 on the Implementation of Sustainable Finance which requires Financial Services Institutions, Issuers, and Public Companies to incorporate sustainable finance into their business practices (OJK, 2017).

(Ardyaningsih and Oktarina, 2022) state that the Global Reporting Initiative (GRI) is the first example of corporate environmental disclosures in sustainability reports. GRI standards, which outline the companies that qualify for sustainability reports, are among the most popular sustainability reporting frameworks. GRI has reporting standards for materials (GRI 301), energy (GRI 302), water (GRI 303), biodiversity (GRI 304), emissions (GRI 305), wastewater and waste (GRI 306), environmental compliance (GRI 307), and supplier environmental assessments (GRI 308). (Wicaksono et al., 2024) point out that GRI standards provide flexibility for the development and operation of environmental reporting information systems, enabling investors/stakeholders to assess and prioritize corporate environmental disclosures. Thus, sustainability reports can indicate that a business is demonstrating care for the community and the environment, and the reports are a sign of a business's promise of sustainability and accountability.

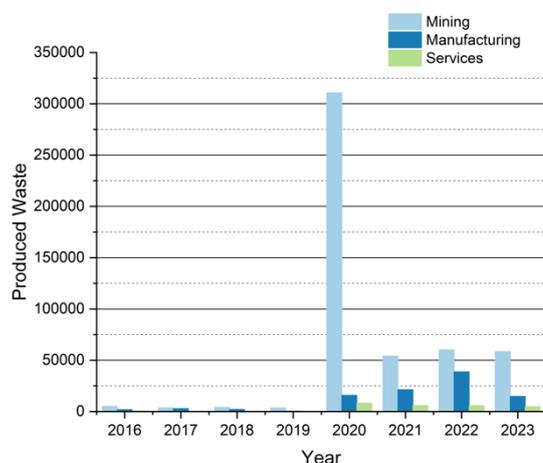


Figure 1. Hazardous waste generated (in thousands of tons)

Concerns regarding the mining industry and the environment continue to grow. According to the BPS-Statistics (2024) and Figure 1, mining produced the most hazardous waste in 2020; in other words, mining grew the most in that category. Additionally, the Environmental Agency (DLH) in 2022 established acid mine drainage (AMD) in the Oal River and alleged the company, Bara Anugerah Sejahtera (BAS), to be responsible for the pollution from wastewater management failures. One of BAS's wastewater management ponds (rmolsumsel, 2024) was reported to the Enim River, where the total suspended solids (TSS) were 1,194.00 mg/L. Poor managerial practices demonstrate negligence of the environment in terms of regulations and compliance. Corporate environmental challenges have led some businesses to offer environmental assessments and outline the details. Public ownership has been shown

to increase environmental disclosure (Ardyaningsih, 2022). Institutional ownership of a company has been shown to positively affect environmental web-based disclosures (Sayadi, 2024). In contrast, Wahyuningrum (2024) found foreign ownership to have a negligible or no effect on environmental disclosures. Richard (2022) found no foreign ownership impact on environmental disclosure. According to Driss (2024), the sustainability committee increases the probability of obtaining environmental disclosures, which is a common subcommittee of the board of directors and is responsible for the administration and implementation of sustainability policies and strategies. Their primary objective is to approach and enact corporate policies and practices that integrate sustainability and the SDGs by economically, socially, and environmentally balancing sustainability within the corporate mix.

Stakeholder and legitimacy theories were used in this study. Roberts (1992) states that, under stakeholder theory, stakeholders are people or groups that have, or can have, an interest in, or the capacity to influence, a firm. Within this context, the responsibility of management is not limited to the singular objective of profit maximization, but also to the consideration of the interests and welfare of stakeholders (Manita et al., 2018; Sayadi and Setiawan, 2024). This requires a certain level of openness and accountability in corporate communications and reporting. Furthermore, Dowling and Pfeffer (1975) suggest that managers want an organization to adapt its boundaries and activities to the systems and values of the society in which the organization is located. Legitimacy has to do with the community's approval of a corporation's conduct in relation to the prevailing social order (Wei et al., 2024). Companies are expected to increase their environmental disclosures to preserve their legitimacy and avoid negative social or regulatory scrutiny (Adnan et al., 2023).

Stakeholder pressures are forcing companies to be more transparent in their environmental reporting. One example of such pressure is the need for companies to implement the Global Reporting Initiative (GRI) guidelines (Mougenot and Doussoulin, 2023; Daromes et al., 2023). Thus, this study intends to evaluate the amount of reporting by companies regarding their compliance with GRI regulations and the vague effect of this reporting on the quality of corporate environmental disclosure. Environmental disclosure research is important because it determines the extent to which a company is committed to adopting less opaque corporate practices and more sustainable ones. Previous research highlights a large number of companies that still face significant challenges with GRI standards (Siregar and Kusumawardhani, 2023). This is the reason why this study builds a framework to evaluate environmental disclosure and the GRI to examine the corporate governance and structural factors that may be associated with the quality of disclosure. Understanding the intricacies and contradictions of GRI compliance regarding environmental reporting is what is sought to be achieved in this study.

2. Literature Review

Given the significance of institutional ownership, control may affect aspects of company policy regarding the clarity and openness of communication, especially by providing details relating to the environment. Wicaksono (2024) categorizes institutional ownership into three types: domestic, developed, and developing institutional investors. As (Wicaksono et al., 2024). observed, host country investors are considered domestic investors. The information asymmetry is lower with them, and a corporate heir's thorough knowledge of the local business culture, as well as the industry, encourages the firm to heighten monitoring, especially with respect to reporting and environmental actions. In addition, the weaker the environmental disclosure, the less informative it is (Bose et al., 2024). This research is consistent with Nagata and Nguyen (2017), Ardyaningsih and Oktarina (2022), and Sayadi and Setiawan (2024).

Identifying institutional-developed investors involves determining investors situated in developed nations. Numerous developed nations are interested in the issues surrounding the environment, including greenhouse gas emissions, deforestation, and the pollution of water bodies (Meutia et al., 2017). Consequently, businesses are forced to change their practices to maintain legitimacy and meet the demands of stakeholders who require transparency and eco-friendly practices (Acar et al.,

2021). In earlier studies, Jubaedah (2023) noted that corporations with a larger proportion of institutional foreign investors are likely to disclose more environmental information. This is because foreign investors are seen to be more demanding with their environmental disclosure guidelines and requirements. In contrast, investors from developing nations are viewed as passive stakeholders and thus have no control over the corporate environment Garanina and Aray (2021); therefore, they are less likely to be concerned with environmental disclosures. Hence, institutional-developed investors and domestic investors are more likely to elevate a corporation's environmental disclosure practices. These claims form the basis of this research, leading to the following hypotheses:

H1: Environmental disclosure positively affects domestic institutional investors.

H2: Environmental disclosure positively affects developed institutional investors.

H3: Environmental disclosures have a negative effect on developing institutional investors.

The effectiveness of corporate governance practices and transparency and environmental disclosure decision-making is influenced by the number of members on the boards of directors. Larger boards may have a greater cognitive and governance range, especially for responding to external organizational pressures for environmental accountability (Gerged, 2020). Suryarahman (2021) found that larger boards and environmental disclosures are positively correlated because of better oversight. Rouf and Al-Faryan (2022) state that larger boards may be better at strategic decision-making and environmental disclosures because members have diverse education, backgrounds, and perspectives. Furthermore, to protect corporate reputation and gain public legitimacy, larger boards emphasize environmental disclosures (Gürbüz and Gürbüz, 2025). This means that a larger number of board members indicates greater environmental transparency for the organization. Ofoegbu (2018) and Agyemang (2020) support this statement. These arguments allow us to formulate the following hypotheses for this study:

H4: Environmental disclosure positively affects board size.

According to Wahyuningrum et al. (2022), gender diversity refers to the difference in gender among the board of directors in an organization. Women's unique viewpoints are assumed to enhance the depth and breadth of engagement on environmental problems. This is due to women's heightened sensitivity to critiquing the environment. Women are stakeholders who are considerate in their decision-making, especially regarding the environment (Carvajal et al., 2022). The presence of women on the board is assumed to improve a company's environmental information disclosure. Moreover, female directors are assumed to influence firms to be more responsible. In particular, in terms of accountability and transparency to the environment, thereby enhancing corporate legitimacy to the people (Kilincarslan et al., 2020). Consequently, the greater the gender diversity in the board of directors, the stronger a firm's commitment to revealing environmental information. This is in line with Manita, et al (2018), Choiriah and Ria (2020), and Wasiuzzaman and Wan Mohammad (2020) findings. Given these assertions, this study proposes the following hypothesis:

H5: Environmental disclosure positively affects gender diversity.

Indirect environmental disclosures encourage the interest of several stakeholders, particularly institutional investors. Institutional investors focus on transparency and the engagement of socially responsible initiatives within a company. They influence the company's ecosystem concerning the management of impacts on the environment (Acar et al., 2021). Given the highly responsible nature of institutional investors, they tend to influence companies facing operational and procedural impacts on the environment to incorporate elements of transparency, especially in direct environmental disclosures. A company's business internal system (BIS) influences the role of institutional investors in direct environmental disclosures. A BIS can be the sustainability committee, which enhances the direct relationship between institutional shareholders' engagement and management's environmental policy

concerning engagement (Zampone et al., 2024). This committee is responsible for easing the pressure on the company from society by ensuring improvements in the company 'environmental management practices (Driss et al., 2024). Better sustainability committees (SCs) contribute to better responsiveness of institutional shareholders towards environmental disclosures. Sustainability committee members (SCMs) transform investors' sustainability concerns into corporate strategies and reporting practices.

The sustainability committee in a corporation fosters the influence of domestic investors because the committee focuses on converting stakeholder influence into operational corporate governance policies. Furthermore, the committee assesses how the corporation facilitates the practice of environmental disclosures (Budianto et al., 2025). The same applies to developed institutional investors, who, on average, have a greater magnitudinal gap for the adoption of robust sustainability frameworks in line with home country standards (Bhatia and Makkar, 2020). Through this committee, the corporation can meet the environmental disclosure expectations of investors from developed countries, which are aligned with global standards. In contrast, the pressure from institutional investors in developing countries is lower than that from investors in developed countries. However, they provide a level of assurance to corporations that seek to enhance the quality of their environmental sustainability reports that they will remain relevant and competitive in the long run (Wicaksono et al., 2024; Wahyuningrum et al., 2024). This provides the basis for this study to propose the following hypotheses:

H6: The sustainability committee strengthens the positive influence of domestic investors on environmental disclosure.

H7: The sustainability committee strengthens the positive influence of developed-country investors on environmental disclosure.

H8: The sustainability committee weakens the negative influence of developing-country investors on environmental disclosure.

Having a larger board of directors promotes more varied stakeholder representation (Khairredine et al., 2020). This scenario enables firms to communicate more about their environment-related activities to stakeholders to ensure accountability. In addition, the more extensive the board, the more diversity and breadth of cross-sector knowledge, and the greater the capacity to monitor and influence the formulation of organizational strategies pertaining to the quantity of environmental disclosures (Kumari et al., 2022). Nevertheless, larger boards do not inherently lead to superior environmental oversight. There must be some deliberate mechanism to direct the board's thinking about sustainability, and one such mechanism is a sustainability committee. From this perspective, a sustainability committee is a crucial player in ensuring that the board's thinking about and management of environmental concerns is carried out strategically, intentionally, and properly (Gürbüz and Gürbüz, 2025). This committee also enhances the board's capacity to respond effectively to stakeholder expectations regarding sustainability and the environment (Muntaha and Haryono, 2021). In addition, it reinforces public confidence that corporations are enhancing their oversight of environmental disclosures (Siregar and Haryono, 2023). Accordingly, a sustainability committee can be a factor that augments the impact of board size on environmental disclosures. Considering these arguments, this study proposes the following hypothesis:

H9: Sustainability committee strengthens the positive influence of board size on environmental disclosure

Gender diversity describes the range of genders within a board of directors team, which contributes to the introduction of different viewpoints in the decision-making processes (Pinheiro et al., 2023). Female board directors tend to be more socially and environmentally conscious, as they demonstrate a stronger sense of empathy towards sustainability, public welfare, and greater corporate reporting accountability (Wasiuzzaman and Masliza, 2020). Hence, a company that displays a higher degree of gender diversity within its board is expected to demonstrate greater improvement in its environmental disclosure. Furthermore, the introduction of a sustainability committee is expected to

enhance the promotion and efficiency of female directors. The Committee for Sustainability Engagements provides organization for committee-related engagements, tracks how well the company meets its sustainability goals, and provides a formal mechanism for corporate managers to raise concerns regarding the company’s environmental management with the board (Zampone et al., 2024). Based on this, the Sustainability Committee will attempt to integrate and address the environmental concerns promoted by women to bring environmental concerns to the firm and incorporate such concerns into the decision-making processes (Manita et al., 2018). Additionally, the Sustainability Committee helps ensure that the company addresses environmental concerns with the needed depth and rigor and that such concerns are communicated in the company’s environmental disclosures as a socially responsible strategy to build corporate reputation (Lie and Setyani, 2023). These arguments compel this study to formulate the following hypothesis:

H10: Sustainability committee strengthens the positive influence of gender diversity on environmental disclosure

3. Methods

This research is conducted using a quantitative method. The data used in this study are limited to secondary data, including sustainability reports located on the websites of the respective companies and annual reports accessible on the website of the Indonesia Stock Exchange (IDX) (www.idx.co.id) and reports from Refinitiv Eikon (www.eikon.refinitiv.com). Secondary data are defined as data acquired through third-party mediation, such as archival or documented sources (Wahyudin, 2015). From 2019 to 2023, the basic materials industry comprised 110 companies on the IDX, which was defined as the population of this study. The sample was determined through purposive sampling, which is defined as the selection of a sample based on predetermined criteria and/or rationales that align with the objectives of the study (Wahyudin, 2015). The criteria for sample selection are illustrated using purposive sampling, as shown in Table 1.

Table 1. Sample analysis criteria of the study

No	Criteria	Total
1	Basic material sector companies listed on the Indonesia Stock Exchange (IDX) for the period of 2019-2023	110
2	Basic material sector companies that did not publish annual reports and sustainability reports for the period of 2019 - 2023	(36)
3	Basic material sector companies that ceased operations by the year 2023	(8)
4	Company shares not owned by institutional investors	(2)
5	Company annual reports and sustainability reports that are not accessible	(3)
Number of basic material sector companies selected as samples		61
Year of observation		5
Number of research analysis units (61x5)		305

Source: Secondary data processed by researchers, 2025

The current study employs one dependent variable and five independent variables, one moderating variable, and three control variables. The detailed operational definitions and measurements of the variables are provided in Table 2.

Table 2. Operational definitions and measurement of research variables

Variable Type	Variable	Definition	Measurement
Dependent	Environmental Disclosure	Environmental disclosure refers to a company's effort to disclose information related to the environment in its annual report (Richard and Wijaya, 2022).	GRI Standards with 34 disclosure indicators $ED = \frac{\sum Total\ items\ disclosed}{\sum Total\ indicator\ item} \times 100\%$ (Daromes et al., 2023)
	Independent	Institutional Domestic Investors	Domestic institutional ownership represents the share of domestic institutional entities and serves as a governance mechanism to supervise and enhance firm performance (Nagata and Nguyen, 2017).
Institutional Developed Investors		Foreign investors from developed nations who place a high priority on sustainable development are known as institutionally developed investors (Wicaksono et al., 2024).	$\frac{Developed\ Investor}{\sum Total\ shares} \times 100\%$ (Wicaksono et al., 2024)
Institutional Developing Investors		Developing institutional investors can be defined as foreign investors from developing countries (Singhania and Saini, 2023).	$\frac{Developing\ Investor}{\sum Total\ shares} \times 100\%$ (Singhania and Saini, 2023)
Board Size		Board size refers to the number of directors in a company (Agyemang et al., 2020).	Board size = the number of board members in a company (Latif et al., 2020)
Gender diversity		Gender diversity refers to the composition of board of directors members in a company or organization (Ayu Indriyani and Sudaryati, 2020).	$\frac{Gender\ diversity}{\sum Total\ board} \times 100\%$ (Ayu Indriyani and Sudaryati, 2020)
Moderation	Sustainability committee	The sustainability committee helps companies formulate and implement policies that are subsequently	Dummy variable with categories 1: if there is a Sustainability Committee 0: if there is no a Sustainability Committee (Driss et al., 2024)

Variable Type	Variable	Definition	Measurement
		reviewed before being published to the public (Amira et al., 2024).	
Control	ROA	Return on assets (ROA) is a financial ratio that shows how efficiently a company manages its assets to generate profits (Saragih et al., 2021).	$ROA = \frac{Net\ profit\ after\ tax}{Total\ Asset} \times 100\%$ (Qasem et al., 2022)
	Firm's Audit	A firm's audit is a measure of public accounting firms included in the Big Four category (Wicaksono et al., 2024).	Dummy variable with categories 1: if using Big4; 0: if not using Big4 (Budianto et al., 2025)
	Firm's Size	Company size indicates the size of the company (Latif et al., 2020).	Firm's Size = Ln (Σ Company Assets) (Surjati and Yanti, 2023)

Source: Data processed by researchers, 2025

The research included various data analysis methods, initially from a descriptive statistical perspective to define research variables and from an inferential perspective, which included classical assumption tests, moderated regression analysis (MRA), and various hypotheses and determination coefficient tests. Calculations and analyses were performed using IBM SPSS Statistics, version 27. Moderated regression analysis, for example, in Equation (1), includes the sustainability committee and its interaction with the good corporate governance variable:

$$ED = \alpha + \beta_1 DOM + \beta_2 DEVELOP + \beta_3 DEVING + \beta_4 BOARD + \beta_5 GENDER + \beta_6 SC + \beta_7 (DOM \times SC) + \beta_8 (DEVELOP \times SC) + \beta_9 (DEVING \times SC) + \beta_{10} (BOARD \times SC) + \beta_{11} (GENDER \times SC) + \beta_{12} ROA + \beta_{13} AUDIT + \beta_{14} SIZE + \varepsilon \quad (1)$$

The model includes several independent variables, such as domestic investors (DOM), developed investors (DEVELOP), developing investors (DEVING), board size (BOARD), gender diversity (GENDER), and the sustainability committee (SC). The interaction variables DOM*SC, DEVELOP*SC, DEVING*SC, BOARD*SC, and GENDER*SC are intended to assess the moderating role of the sustainability committee. The control variables return on assets (ROA), firm audit (AUDIT), and firm size (SIZE) reflect the firm's adjusted performance as well as its characteristics. Greek symbols are used to denote certain elements; the regression coefficients are expressed as β_1 through β_{14} , with the constant term indicated as α , and ε representing the standard error.

4. Result and Discussion

4.1 Result

One technique for analyzing data is descriptive analysis, which focuses on describing the data gathered during the research process. Ghazali (2018) states, "data analyzed with this technique can be presented in the form of tables or graphs, as well as in the form of descriptions of the minimum and maximum values, mean, median, standard deviation, and mode. Table 3 depicts the descriptive analysis and the variables, including environmental disclosure, domestic investors, developed investors, developing investors, board size, gender diversity, return on assets, firm's audit, firm's size, and sustainability committee.

Table 3. Descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
ED	305	0.00	1.000	0.292	0.252
DOM	305	0.00	98.306	53.764	28.774
DEVELOP	305	0.00	98,277	16.173	26.730
DEVING	305	0.00	92.499	3.296	14.156
BOARD	305	2	15	4.43	1.871
GENDER	305	0.00	0.400	0.087	0.099
SC	305	0	1	0.15	0.36
ROA	305	-49.92	24.600	2.243	7.25
AUDIT	305	0	1	0.33	0.47
SIZE	305	-2.079	5.05	1.25	1.62
Valid N (listwise)	305				

Source: Data processed by researchers, 2025

Table 3 presents the descriptive statistics of the study's variables based on 305 firm-year observations. The ED variable exhibits a minimum of 0.000 and a maximum of 1.000, with a mean and standard deviation of 0.292 and 0.252, respectively. This indicates that the amount of environmental disclosure is low and unequal among the concerns because a firm discloses less than a third of the total environmental disclosure items. The DOM variable has a standard deviation of 28.774 and a mean value of 53.764, with a range of 0.000 to 98.306. This distribution shows a significant disparity in the concentration of domestic ownership in firms; that is, some firms are largely domestic, while others are largely foreign. Similarly, the DEVELOP variable has an average of 16.173, a maximum of 98.277, and a relatively high standard deviation of 26.730. This shows that foreign ownership participation among firms is highly variable. The DEVING variable has a range from 0.000 to 92.499, a mean of 3.296, with a standard deviation of 14.156. The few firms that display significant levels of personal shareholding point to the fact that the individual stockholding pattern is probably small across firms. This also indicates high data dispersion. For the board size (BOARD) variable, the average is 4.43, with a range of 2 to 15 members and a standard deviation of 1.871. This research indicates that a good number of firms have small-sized boards, which may lead to efficient decision-making; however, it may also lead to the absence of a diverse range of viewpoints and competencies in the strategic decision-making process. The GENDER variable has a mean of 0.087, which indicates that the few women who occupy senior management positions in the examined firms is quite indicative of a glaring gender disparity in the upper echelons of corporate governance. The variable sustainability committee (SC) has a mean of 0.15, which indicates that quite a number of firms still do not have a sustainability committee. The firms' profitability, as gauged by return on assets (ROA), has an average of 2.243, with a wide range of -49.92 to 24.600, exhibiting a lot of variances in financial performance across firms during the study period. According to (Ghozali, 2018). the regression analysis output is received as follows:

Table 4. Moderated regression analysis (MRA) test results

Model	Coefficients			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	0.080	0.061		1.313	0.190
DOM	0.002	0.001	0.238	3.100	0.002
DEVELOP	0.002	0.001	0.248	3.304	0.001
DEVING	0.001	0.001	0.045	0.787	0.432
BOARD	-0.004	0.009	-0.032	-0.459	0.647
GENDER	-0.032	0.134	-0.012	-0.235	0.814
SC	0.051	0.061	0.201	0.827	0.409
X1_Z	-0.001	0.001	-0.132	-0.771	0.441
X2_Z	-0.001	0.001	-0.132	-1.112	0.267
X3_Z	-0.002	0.001	-0.152	-2.531	0.012
X4_Z	0.014	0.006	0.338	2.476	0.014
X5_Z	-0.046	0.171	-0.019	-0.268	0.789
ROA	0.002	0.002	0.044	0.889	0.375
AUDIT	0.029	0.014	0.114	2.045	0.042
SIZE	0.058	0.010	0.373	5.633	0.000

Dependent Variable: ED

Source: Data processed by researchers, 2025

The results from the moderated regression analysis (MRA) focusing on domestic ownership (DOM) are presented in Table 4. In the regression analysis, DOM ($\beta = 0.238$, $p = 0.002$) suggests that DOM has a positive and statistically significant impact on the environment. This indicates that domestic investors pressure firms regarding their responsibility and transparency in environmental reporting. Therefore, firms with high domestic ownership are more likely to have environmental reporting. In contrast, for foreign equity (DEVELOP) ($\beta = 0.248$, $p = 0.001$), DEVELOP positively and significantly impacts environmental reporting. This further confirms that foreign investors, who tend to have more experience in global sustainable development, can compel their invested firms to adopt stricter policies regarding environmental reporting. In the case of individual ownership (DEVING), the low impact ($\beta = 0.045$, $p = 0.432$) demonstrates that dispersed individual investors are unlikely to have the incentive to act collectively to pressure a firm to adopt reporting standards. The influence of board size (BOARD) and board gender diversity (GENDER) on environmental disclosure is not statistically significant, as the p-values are higher than the conventional cut-off. It is erroneous to explain increased environmental disclosures due to the enlargement of boards or the appointment of women directors, particularly if such appointments are symbolic. In addition, a sustainability committee (SC) and environmental disclosures are not significantly correlated ($\beta = 0.201$, $p = 0.409$). The lack of correlation suggests that the mere existence of such a committee is insufficient to bring about a change in disclosure practices without the assignment of critical decision-making authority to the committee or the committee being integrated into the form and function of the committee's elite decision-making.

The findings regarding the competing variables appear to be at cross-purposes. The interactive variable, X3_Z, has a statistically relevant negative coefficient ($\beta = -0.152$, $p = 0.012$). Hence, the negative moderating effect weakens the relationship with the pertinent independent variable and environmental disclosure. Conversely, X4_Z is positively and statistically significantly ($\beta = 0.338$, $p = 0.014$), which implies that the moderating variable is a positive contributor to environmental disclosure. The other interactive

variables (X_{1_Z} , X_{2_Z} , and X_{5_Z}) are not statistically significant, suggesting that the absence of a moderating effect is more pronounced in these relationships. Of the variables examined, the quality of the audit committee (AUDIT) exhibited the most positive and statistically significant relationship with environmental disclosure ($\beta = 0.114$, $p = 0.042$), suggesting that firms with higher-quality audit committee members demonstrate superior environmental disclosures and, thus, superior governance. In a positive relationship ($\beta = 0.373$, $p = 0.000$) with environmental disclosure, firm size (SIZE) suggests that larger firms are more likely to disclose environmental information, likely because they attract more public scrutiny and because of more rigorous legislative requirements and higher stakeholder satisfaction requirements. Conversely, firm profitability (ROA) shows no relationship with environmental disclosure.

Table 5. Coefficient of determination test results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.581 ^a	0.338	0.306	0.211

a. Predictors: (Constant), SIZE, DEVLOP, ROA, DEIVING, X_{3_Z} , GENDER, X_{2_Z} , X_{5_Z} , AUDIT, X_{1_Z} , BOARD, DOM, X_{4_Z} , SC

Source: Data processed by researchers, 2025

4.2 Discussion

4.2.1 Institutional Ownership and Environmental Disclosure

(Nagata and Nguyen, 2017; Wicaksono et al., 2024) posit that domestic institutional ownership positively impacts environmental disclosures. More domestic institutional investors lead to more environmental disclosures. This is due to domestic investors' knowledge about domestic economic systems, regulations, and social norms, especially in the context of Indonesia. Per POJK No. 51/POJK.03/2017 and SEOJK No. 16/SEOJK.04/2021, the Indonesian government compels companies to provide greater transparency in sustainability and annual report disclosures. Public investors, especially domestic ones, require the responsiveness of businesses and, in turn, result ownership in increased environmental disclosures' responsiveness for the businesses to retain their social license to operate (Akhter et al., 2023). This means that the purpose of environmental disclosures is more than legal compliance. A well-developed disclosure framework can foster stakeholder confidence.

The outcomes associated with Hypothesis 2 (H_2) suggest that the impact of stakeholders in developed nations is positive with respect to the influence of environmental disclosure. This can be explained by stakeholder theory, which states that an organization is influenced by the stakeholder(s) who affect (s) the organization in an effective way. As (Li et al., 2021) pointed out, with the international investment framework in developed nations, there are higher standards of sustainability and transparency that are legally required. Consequently, companies in developed nations are required to enhance the standards of sustainability and transparency of their environmental disclosures to comply with international standards (Acar et al., 2021). Consequently, international investors have the capacity to utilize environmental disclosures as an effective tool to enhance their competitive advantage. This explains the positive influence international investors have and the significance of their role in encouraging transparency and accountability in the business world.

Regarding H_3 , it does indicate a negative relationship concerning institutional developing investors and environmental disclosure, meaning that the investment strategies of developing markets are perhaps more heterogeneous, whereas the ESG engagement is lower. This implies that developing institutional investors do not exert adequate engagement on the pressure and transparency of environmental disclosures (Jacoby et al., 2019; Singhanian and Saini, 2023). Developing market investors are described as passive and not proactive in pushing companies to adopt sustainable business practices

(Garanina and Aray, 2021). Nevertheless, companies may still seek to protect their reputation and maintain credibility with stakeholders in developing markets.

4.2.2 Board Size and Environmental Disclosure

H4 results show that the size of the board of directors has no influence on environmental disclosure. According to Rouf and Al-Faryan (2022), a larger board of directors will have ineffective coordination and more complicated decision-making procedures. Such size limits their ability to discuss environmental issues effectively. Additionally, the board of directors' responsibilities often focus on short-term success rather than non-financial disclosures. Consequently, progress in environmental disclosure cannot be driven solely by board size.

As Latif et al. (202) indicate), the findings indicate that environmental transparency is not enhanced by overly large boards of directors. A large board member is expected to bring a strategic system. However, environmental disclosure in Indonesia is still driven by the demands of binding regulations, not by company awareness. This illustrates how individual director characteristics, such as age and sustainability awareness, have a greater impact on the board's capacity to advance environmental issues (Fernandes et al., 2019).

Hypothesis H4 states that board size does not affect environmental reporting. Rouf and Al-Faryan (2022) posit that larger boards do not facilitate effective discussion and decision-making. Their size limits boards' capacity to deliberate on environmental matters. Moreover, boards typically have a tendency to prioritize short-term gains at the expense of non-financial disclosures. Thus, board size alone cannot spur improvements in environmental disclosures.

As per the findings of Latif et al. (2020). the results suggest that there is no positive effect on environmental reporting for boards that are too large. A large board is seen to provide varied perspectives and facilitate a sufficiently complex organization. However, in Indonesia, there are still low levels of voluntary environmental reporting, and the driving force behind reporting is still compliance with the law. This demonstrates that individual board member characteristics, such as age, are of much greater significance than the phenomenon of the board in relation to environmental reporting (Fernandes et al., 2019).

4.2.3 Gender Diversity and Environmental Disclosure

Empirical investigations suggest that gender diversity fails to improve environmental disclosures. Although in theory, women should be more environmentally concerned, their representational capacity is small and uneven, and their ability to steer decisions tends to be curtailed within the prevalent patriarchal systems of developing economies (Bose et al., 2022; Manita et al., 2018). Deficiencies in gender diversity are often observed; although its presence is often appreciated, it is not an indicator of increased environmental disclosure in the present case study.

The current results resonate with those of Ismail and Latiff (2019), with whom the presence of women in the boardroom had no remarkable positive effect on the level of ESG disclosures. The extent of female board membership in most Indonesian firms is inadequate to determine environmental disclosures. This is the reason for the observed gender inequality in environmental disclosures in Indonesia (Bose et al., 2022). Consequently, low levels of gender diversity should be complemented with effective governance. Firms adopt this mechanism to ensure that their environmental disclosures are genuine and not deceptive.

4.2.4 Sustainability Committee as a Moderator of the Relationship between Institutional Ownership and Environmental Disclosure

In Indonesian basic materials companies, sustainability committees are too weak to boost environmental transparency. This also shows that the sustainability committees are not able to improve the link between domestic institutional investors and environmental disclosure. Domestic institutional

investors do not consider environmental factors when making investment decisions (Wicaksono et al., 2024). These results indicate that the sustainability committee is far from optimizing its function to achieve sustainability objectives. The sustainability committee is unable to fully address domestic institutional investors and environmental disclosure in Indonesia (Hamad et al., 2024). Theoretically, sustainability committees should be able to strengthen investors' calls for environmental disclosures. This calls for a renewed focus on the sustainability governance frameworks in place in companies, as well as local investors' concerns about the environment.

The study of sustainability committees for basic material sector companies in Indonesia shows that sustainability committees fail to address concerns from institutional investors in developed countries regarding environmental accountability and transparency. If the committee is only cosmetic and non-committal or lacks initiatives to integrate environmental concerns into the business, then this committee lacks credibility to support investment decisions from companies based in developed countries. Consequently, the moderating role of sustainability committees is absent because their presence does not strengthen the relationship between institutional ownership and environmental reporting in developed countries (Alshbili et al., 2021; Budianto et al., 2025). Moreover, perception gaps that further diminish the effectiveness of sustainability committees may arise from the unequal gap between the expectations of international investors and local sustainability initiatives in Indonesia.

Hypothesis H8 states that sustainability committees have not been able to mitigate the influence of developing-country investors regarding environmental disclosures. Even with a sustainability committee, the committee has proven to not be a fit for the tool of international corporate governance (Giannarakis et al., 2020). Most of the time, the sustainability committee is to appease external pressure, or it is part of a symbolic legitimacy approach to improve the firm's reputation (Orazalin et al., 2024). Furthermore, developing-country investors usually focus on short-term financial results and neglect long-term sustainability disclosures (Manrique and Martí-Ballester, 2017). It is evident that merely setting up a formal sustainability committee is insufficient.

4.2.5 Sustainability Committee as a Moderator of the Relationship between Board Size and Environmental Disclosure

A board of directors, in collaboration with a sustainability committee, may provide more detailed and clear disclosures of environmental issues (Gürbüz and Gürbüz, 2025). According to stakeholder theory, business organizations must integrate the concerns of the government, society, and the environment. This synergy may provide a wider scope to the concern of environmental disclosure, and thus, improve disclosure and stakeholder trust (Giannarakis et al., 2020; Khaireddine et al., 2020). Businesses with wide boards of directors are likely to have diverse skills and knowledge, which will enhance strategic choices, especially for environmental problems (Cucari et al., 2018). This shows the importance of the sustainability committee to an organization. One of the roles of the committee is to formulate sustainability strategies and to provide oversight of sustainability reports.

4.2.6 Sustainability Committee as a Moderator of the Relationship between Gender Diversity and Environmental Disclosure

The presence of sustainability boards and gender diversity within a company has no effect on increasing environmental disclosures (Zampone et al., 2024). (Zampone et al., 2024).state that the company's sustainability initiatives have neither support from nor are reinforced by the sustainability committee. Exemplarily, a committee of this nature was created to meet a company's legal and administrative formality. Nevertheless, it does not have a role in determining and shaping the company's environmental strategy.

The purpose of this committee is more than simply securing administrative necessities and legal obligations. To do so would seriously undermine the sustainability committee's mandate to enhance environmental disclosure gaps (Burke et al., 2019). Burke et al. (2019) posit that the sustainability

committee's inability to address this gap illustrates cartels and structural weaknesses in a company's sustainability governance. The existence of a sustainability committee is aimed at increasing sustainability practices. This is complemented by the existence of a significant, strategic, and integrated role within the corporate governance framework (Abdullah et al., 2024; Mähönen, 2020).

5. Conclusions

The research found that both domestic institutional investors and institutional investors from developed countries have a positive impact on the degree of environmental disclosure. In contrast, factors such as institutional investors from developing countries, board size, and gender diversity have no impact on the extent of environmental disclosure. Regarding board size, the sustainability committee as a moderating variable is the only one that can strengthen the impact of board size on environmental disclosure. It appears that for other factors, the moderating variable does not strengthen the impact on environmental disclosure. Companies within the basic materials sector must further enhance their corporate governance and focus on better corporate governance practices, including greater transparency, accountability, and responsibility to the community. The establishment and strengthening of robust and active sustainability committees is of equal importance to stimulating improvements in the reporting of environmental quality information disclosures. Furthermore, basic materials companies in Indonesia must take the necessary steps to ensure that their environmental disclosures are in a continual state of necessary updates and alignments to the latest GRI Standards 2021. Additionally, this study is limited to Indonesian companies, and it cannot be easily generalized to other countries with different regulations. Furthermore, in the context of ASEAN countries, subsequent research can be conducted to explore the regional context through cross-country studies.

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Ethics Statement

Not applicable.

CRedit Author Statement

Akbar Bayu Saputro: Formal Analysis, Data Curation, Conceptualization, Writing – Original Draft, Writing – Review & Editing. **Indah Fajarini Sri Wahyuningrum:** Supervision, Validation, Resources, Project Administration, Methodology, Investigation, Formal Analysis, Data Curation, Writing – Original Draft. **Fitra Roman Cahaya:** Supervision, Methodology, Writing – Review & Editing.

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