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The Effect of Corporate Governance on Environmental Disclosure: The Moderating Role of Profitability

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Abstract

Purposes: Profitability proxied by Return on Assets (ROA) is used to moderating empirical indicator assessed in this analyse to assess the influence of corporate governance systems on environmental disclosure. Corporate governance is implemented through five key indicators, there are managerial ownership, foreign ownership, frequency of board of commissioners meetings, and the proportion of independent directors. The main objective of this research is to examine the link between corporate governance and sustainability reporting levels, as well as the link between environmental disclosure activities and corporate earnings.

Methods: Panel data regression analysis is applied in this study through EViews version 13. The model is considered effective when applying the Random Effect Model (REM) for sample estimation. The research sample consists of 42 Publicly listed property and real estate firms on the IDX, with a total of 168 units of analysis selected through purposive sampling. The data used are secondary data obtained from annual reports and sustainability reports published by the companies during the 2021–2024 period.

Findings: Profitability proxied by Return on Assets (ROA) as an indicator of financial performance efficiency, has been proven to enhance the connection between managerial control and ecological information disclosure reporting. In contrast, two other governance indicators, namely the frequency of board of commissioners meetings and the proportion of independent directors, show a positive influence on disclosure practices. However, profitability does not moderate the relationship between foreign ownership, board meeting intensity, or the extent of independent representation on the board. Meanwhile, the two forms of ownership, managerial ownership as internal control and foreign ownership as a representation of external influence, do not demonstrate a notable impact on environmental reporting policies.

Novelty: This study contributes by introducing a novel approach to analyzing moderating variables through profitability. The analysis offers new insights, suggesting that the effectiveness of governance instruments in supporting environmental disclosure policies is contingent upon corporate financial results.

Keywords*:* Environmental Disclosure, Frequency of Board of Commissioners Meetings, Foreign Ownership, Managerial Ownership, Profitability, Proportion of Independent Board Members.

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INTRODUCTION

In corporate environmental management, profit acquisition and environmental management are two sides of the same coin. However, there is often a lack of accountability in corporate environmental management, and many companies' environmental managers prioritize profit maximization over accountability. Many companies continue in this way, leading to a practice of creating policies formulated by numerous brands that focus solely on fulfilling financial purposes to meet immediate needs, without regard for the other side effects. These policies impact corporate processes, encompassing more than just financial returns. Hence, companies must adopt good decision-making practices with an environmental focus to foster goodwill among all stakeholder groups. This further aligns with John Elkington's Triple Bottom Line, which highlights that businesses must prioritise the interests of individuals and communities in corporate operations as well as environmental sustainability (planet) and financial gain. And when this relationship is properly implemented, it can drive sustainable policies and improve the well-being of stakeholders in a group.

However, besides corporate governance, sustainable environmental policy is another issue that deserves attention in regulating the responsible use of natural resources. And how companies run their systems must reflect an environmentally managed environment with accountability, as they influence how companies operate their systems. These policies are also relevant to choices concerning the environmental impacts generated. Conversely, the communities impacted by corporate activities begin to realize that the process impacts their daily lifestyle and routines. This increasing awareness indirectly creates an obligation for companies to ensure that their operational management minimizes the impacts of their activity on humans. This system contributes to meeting the need for interaction between business interest and environmental sustainability of a corporate entity (Setyadharma et al., 2024).

Governments, international organizations, and various institutions, alongside the public as key stakeholders, have increasingly paid significant attention to corporate efforts focused on environmental management as a performance indicator. This concern is reflected in the implementation of various regulations and policies aimed at supporting sustainability aspects within corporate operations (Wahyuningrum et al., 2022). Policies driven by stakeholder pressure have influenced companies to reduce the negative impacts of their operational processes. These policies indirectly establish guidelines for transparent public communication regarding corporate activities that affect surrounding communities. Such policies help strengthen public trust in the company and significantly influence stakeholder relationships. These relationships reflect the company's efforts and commitment to improving the quality of its processes based on environmental impact, while also supporting the principle of collective well-being.

The way companies demonstrate their commitment to environmental sustainability is through reports that disclose environmental information, commonly referred to as environmental disclosure (Husein & Desliniati, 2024). Environmental disclosure is environmental information related to the company is disclosed in the form of environmental disclosure, which is presented through the companies financial and environmental disclosure document. Such disclosure is useful for stakeholders in assessing a company's ability to carry out its social responsibilities and in understanding the surrounding environmental conditions, thereby ensuring that stakeholders' rights are fulfilled (Wahyuningrum & Amalia, 2023). In Indonesia, the publication of environmental disclosure is both voluntary and mandatory, as there are laws requiring companies to report their Corporate Social and Environmental Responsibility, as stipulated in Law No. 40 of 2007 Article 6 paragraph 2 and Article 74 paragraph 1. At the same time, environmental disclosure is considered voluntary due to the absence of standardized environmental disclosure guidelines issued by the Indonesian government (Solikhah & Winarsih, 2016).

Development activities, which are now a common practice in Indonesia, have experienced significant growth in recent years due to population expansion. Growth in population, one of its basic drivers, further increased indirect demand for residential development and various other forms of building. At the same time, the pace of development in Indonesia is bringing new problems into its fold. In particular those produced by corporate undertakings targeted at helping mankind become accustomed to life there or elsewhere more people live outside its borders (not just cities). A well-regarded example would be the 161-hectare reclamation project in Jakarta Bay, which was initiated by PT Agung Podomoro Land and executed by its subsidiary, PT Muara Wisesa Samudra. Environmental concerns associated with the construction and marine reclamation processes drew widespread criticism over the project and it was subsequently canceled. The project has hampered marine biodiversity in Jakarta Bay and the livelihoods of local fishermen who rely on the surrounding waters. The project was also faced with several external challenges, including erosion which endangered the reclaimed land and challenges in adhering to regulations set by the Indonesian government. Another is the establishment of a high-end residential scheme, 18,000 apartment units, in MT Mahkota Sentosa Utama's area under PT Lippo Cikarang. The construction of such area has also been known to result in high water and soil pollution and higher emitter of greenhouse gases into the air. The project's development is very energy and water consuming and it leads to disruption of the everyday life of the people living and working in the vicinity. Furthermore, the development has despoiled groundwater sources essential for maintaining local livelihoods. In response to these effects, groups such as WALHI (Wahana Lingkungan Hidup Indonesia) have condemned water resource management policies that are exploitative and damaging, particularly the shrinking of groundwater resources under the Meikarta development, which aims to avoid future water shortages. These cases showcase the need for broader public communication, with an emphasis on the need for companies to account for environmental and social impacts of their activities, particularly those at the macro level, where communities are active and there are stakeholders.

In fact, we review the environmental disclosures of the Annual Reports (AR) and Sustainability Reports (SR) which shows that in 2021, there were only 49 Indonesian firms operating in the property and real estate sector who included environmental reporting in their official documentation, a decline from 52 firms in 2020 that were severely affected due to the effects of the pandemic (COVID-19). The majority of companies published environmental disclosure policies in 2022 and 2023. For instance, the number jumped to 57 in 2022 and 61 in 2023. However, the number also fell in 2024 when the figure fell to 54 companies, indicating a regression in reporting practices. This variation highlights the unevenness among property and real estate companies and organizations that are essential to land-use transformation to the development of sustained environmental reporting policies.

The environmental disclosure policies are based on the indicators established by the Global Reporting Initiative (GRI). It offers a structured framework for businesses or organizations to communicate openly about economic, environmental, and social impacts. Its objective is to help operational units in their reporting on environmental sustainability performance to stakeholders like investors, government bodies, and the public. At present, the GRI framework is one of several guidelines to guide companies in dealing with issues arising from corporate activities. Indirectly, this system motivates firms to identify the primary points of impact from environmental pollution, especially those that have negative impacts on nearby communities, while increasing stakeholder trust and corporate reputation at the global level also (Apriliani et al., 2022).

Companies must establish systems that incorporate corporate governance frameworks to remain competitive across various industrial sectors globally, particularly in attracting investors and managing corporate operations (Diandra, 2023). Corporate governance systems consist of a set of rules and policies designed to build a strong organizational foundation and support business processes in achieving objectives aligned with the company's vision (Wahyuningrum et al., 2023). Effective corporate management requires the design of monitoring and compliance evaluation policies, especially in operational activities that generate environmental impacts. Corporate systems, particularly those related to environmental disclosure policies, are capable of providing detailed information to all stakeholders (Itan et al., 2023). The application of a well-structured management system can specifically enhance the quality of environmental disclosures and mitigate the negative impacts arising from corporate activities, such as emissions and waste generation (Boudawara et al., 2023).

Stakeholder theory is a concept that asserts that a company cannot operate solely for its own interests. This theoretical framework was pioneered by Edward Freeman in 1984. The theory posits that companies hold both responsibilities and functions to generate value for various parties, including stakeholders and the broader community. Stakeholders in this context encompass shareholders, suppliers, customers, and the company's surrounding environment. Corporate success is marked not solely by fiscal gains, but by the achievement of organizational goals aligned with the company's visio, particularly those that emphasize the positive impacts of corporate activities. Accordingly, the measure of success extends beyond financial profitability. The theory further asserts that corporate management must strive to minimize negative externalities resulting from business operations. In this regard, stakeholders play a critical role in identifying and evaluating the types of information that should be disclosed through environmental reporting policies. Stakeholders are also expected to conduct thorough assessments, particularly concerning the frequency and quality of environmental accountability reports issued to all relevant parties, including the public, investors, suppliers, and customers. With the growing number of investors concerned about environmental issues, companies need to improve their environmental performance to gain visibility of investors or stakeholders to invest in their shares (Suryarahman & Trihatmoko, 2021). Stakeholder understanding of environmental sustainability concerns also drives companies to remain actively engaged in disclosing environmental information, or environmental disclosure, in a more transparent manner (Wahyuningrum et al., 2025). This study offers novelty by employing profitability as a conditional variable. Profitability provides an overview of a Corporate financial outcomes during a defined period whether monthly, quarterly, or annually. Profitability is measured by comparing the profit earned with the invested capital. A high level of profitability indicates promising opportunities for the company's future (Kurniawan, 2019).

Managerial ownership shows a company's degree of managerial ownership. Managers, when they are also shareholders, need to shape the overall direction of the company because in a wider framework their status means many things. They are an important contributor to the company's ability to implement environmental disclosure policies. Hence, the responsibility for good managers for protecting and preserving a good and sustainable corporate image will remain. Such duty can be met by public transparency in the presentation of environmental findings. There is a strong focus on stakeholder theory that environmental reporting regulation could support a company to maintain a valuable association and positive reputation with society through transparency, public trust, and maintaining positive relations with stakeholders. Managers who hold shares are more likely to view environmental disclosure as not merely a legal obligation, but a strategic exercise to demonstrate accountability and enhance the company's image. Suprapti et al. (2019), Putri et al. (2021), and Apriliani et al. (2022) suggest that more managerial ownership influences openness and accountability in environmental reporting. This is because owners are more concerned with sustainable corporate performance and good reputation, more inclined to voluntarily disclose environmental information. Its goal is to enhance the company quality and performance overall (Sukmawati & Henny, 2024).

H_1: Managerial shareholding positively influences the extent of environmental disclosure.

The proportion of foreign shareholding in the company, referring to parties originating from countries other than where the company is registered, can be identified through the percentage of shares held by cross-border shareholders. This indicator reflects the involvement of external entities in the company's ownership structure (Wahyuningrum et al., 2024). In multinational corporations, business entities operating across borders with ownership centralized in a single home country, the environmental disclosure practices of subsidiaries are strongly influenced by the characteristics of the parent company's country of origin. The home country, which reflects specific cultural backgrounds and environmental norms, indirectly shapes the standards and direction of environmental protection policies implemented by business units in other countries (Wahyuningrum & Amalia, 2023). Foreign investors, who are generally more aware of environmental issues, encourage broader disclosure as their ownership stake increases (Ismail et al., 2018). The motivation for companies to respond to environmental impacts by preparing sustainability reports as a means of accountability arises from the growing expectations for transparency and responsibility imposed by foreign investors, shareholders originating from outside the company's country of incorporation, especially when they possess a controlling interest. As a manifestation of transnational capital involvement, foreign ownership significantly influences the strategic orientation of corporate policies, particularly in relation to environmental disclosure practices. Companies with high levels of foreign ownership face greater pressure to demonstrate their commitment to sustainability. Stakeholder theory, an approach that emphasizes the importance of contributions from various parties in corporate decision-making processes, serves as the conceptual foundation for analyzing the link between ownership composition and environmental disclosure levels. Empirical studies by Sinaga (2017), Ismail et al. (2018), Cai et al. (2019), Wicaksono et al. (2021), Wahyuningrum and Amalia (2023), and Wahyuningrum et al. (2024) indicates a positive correlation between foreign ownership, defined as shareholding by investors from outside the country, and the level of corporate environmental disclosure. The greater the extent of foreign investor participation in the company shareholding structure, the higher the volume and frequency of information disclosed regarding environmental impacts and policies implemented by the company.

H_2: The presence of foreign investors contributes to enhanced environmental reporting.

Board of commissioners' meetings serve a vital purpose in corporate policy decisions. A more efficient management is enabled through such meetings, which aids in keeping the members communicating and also coordinating to help in supervising management better. The constant consultations of the board of commissioners reveal the company's sustainability, stakeholder wellbeing, and environmental governance orientation. Raising the level of intensity during meetings prompts the company to expand environmental disclosure for the purposes of accountability to stakeholders. It is by regular business meetings like these that board members and other actors can challenge the adequacy of governance structures, as well as offer input to strategic policy development. In these meetings members gather as a forum to discuss corporate direction and oversight, board of commissioners meetings act as a key communication and coordination channel to facilitate better oversight of management (Kurniawan, 2019). Stakeholder theory can be useful for understanding how the board meeting frequency affects environmental reporting practices. When active, it is likely that the board is associated with business, and with a focus on managerial commitment for corporate social and environmental duties. Accordingly, a company's performance is not only evaluated by the economic performance, but also when it is able to match the interests of a wide range of stakeholders encompassing investors, workforce, customers, general public, etc. As an instance of the importance of such an involvement on compliance, Effendi (2018), Kurniawan (2019), and Suryarahman and Trihatmoko (2021) found empirical evidence suggesting a positive effect of frequency of board of commissioners meetings on environmental disclosure. This commitment incentivizes businesses to enhance environmental reporting that illustrates accountability to the board of commissioners as well as wider stakeholder communities. In the long run this kind of practices can fortify stakeholder relational ties and improve the perception of the company from the public perspective.

H_3: Regular meetings of the board of commissioners contribute positively to the level of environmental disclosure.

Independent directors comprise members who are independent of managerial ties, other commissioners, or controlling shareholders. Independent directors in this sense would be better for the purposes of corporate oversight in the long run, having social and environmental interests and obligations. One of the benefits of an independent director is his/her objectivity in analysing the management decisions as an observer. Stakeholder theory points to the increasing number of independent board members with no direct relationship with management or controlling shareholders as providing strength for the board's responsiveness to stakeholder concerns. The independent directors' role in strategically reviewing and assessing corporate policies, as well as promoting the dissemination of environmental information in more detail by the way of sustainability reports, matters at the organizational level. Results of a number of other reports, including those of Kathy Rao et al. (2012), Gerged (2021), Suwandy and Rahayuningsih (2021) and Okere et al. (2021) show that independent directorship leads to better environmental disclosure. Additionally, independent directors support the compliance of corporate disclosure obligations and strengthen the company's commitment to more responsible sustainability practices. Independent commissioners on the board represent a strategic benefit if a corporation's strategic choices are made consistent with expectations of its stakeholders. Other research has indicated that the external-led boards of directors are perceived to be more adaptable to the different stakeholder interests than their internal-only counterparts. While both the internal and external directors have their weaknesses, the more the non-executive or independent in the board structure, the greater the effectiveness of supervision and management control of the organisation as a whole.

H_4: Board independence positively influences the extent of environmental reporting.

For business sustainability measure, profitability is a long-term indicator that piques the investors' interest and maintains the stakeholders' confidence in the commitment from the firm. Typically, profitability enhancements will be realized through effective operational governance, focusing on marketing strategies, and cost-efficiency measures. Finally, profitability measures how efficiently a company uses its resources (Kurniawan, 2019). For this reason both financial information and environmental reporting need to be treated as strategic means of corporate performance enhancement. As an interaction variable, profitability can strengthen the relationship between managerial control and corporate environmental reporting. When profitability is high, managers who are shareholders have a greater incentive than others to present a good image of the company and meet the expectations of stakeholders through transparent environmental disclosures. Profitability is the business's success indicator, so the way managers disclose environmental data is proactively as it provides accountability and aids in improving trust of stakeholders. Decision-making that involves managerial ownership may include the disclosure of environmental information as part of efforts to improve the overall quality of the company (Sukmawati & Henny, 2024).

H_5: The influence of managerial ownership on environmental disclosure is contingent upon the company level of profitability.

High profitability is considered as the efficiency of an enterprise in controlling its resources in high efficiency, which has the potential to be not only beneficial for owners, but also for the whole of the economy (Syafitri et al., 2022). Higher margins allow them to reinvest in research, infrastructure investment, development and expansion into new geographies. Furthermore, profitability also creates the potential for dividends that people can pay, which is interesting to investors. Foreign ownership, a form of cross-border capital participation, brings the pressure for better transparency and compliance with global environmental standards. However, the quality of environmental disclosure largely depends on a company's financial capacity. When profits are high, foreign-owned companies tend to put more resources into environmental reporting and comply with global expectations. Especially considering that global companies, US and European, are all well-acquainted with Corporate Social Responsibility (CSR) (Wahyuningrum & Amalia, 2023). On the other hand, if profits are low, foreign firms may focus on financial recovery over voluntary sustainability statements.

H_6: Profitability influences the strength of the association interplay between foreign ownership and corporate environmental reporting.

Not only do companies that manage their ecological footprint contribute to increasing profitability, but also improve social welfare and ecological sustainability (Osemene et al., 2024). The level of board-level monitoring, signifying operational oversight, is positively associated with environmental performance and transparency measures. The more frequent these meetings are, the greater the chance to discuss sustainability programs and support them. But the implementation of board recommendations is directly related to the financial strength of the company. Firms with higher profitability have more ability to implement environmental policies, and companies with less profitability are not as well-financed. Finally, profitability is a strengthening effect in the relationship between the frequency of board meetings and environmental disclosure. Therefore, the success of a company is not just financial performance but also the ability to satisfy a variety of stakeholders' expectations, such as investors, employees, customers, and society at large (Effendi, 2018; Suryarahman & Trihatmoko, 2021).

H_7: Profitability influences the strength of the relationship between board meeting frequency and environmental disclosure.

Companies that implement sustainability practices and consistently disclose environmental information demonstrate a commitment to social and environmental responsibility while also strengthening profitability (Siregar & Kusumawardhani, 2023). Independent directors, who serve as monitors unaffiliated with corporate management, play a key role in ensuring that company operations remain aligned with organizational values and stakeholder interests. However, the ontribution of board independence to environmental reporting practices is highly influenced by the company's financial condition. When profitability is high, firms have greater flexibility to implement board recommendations—such as funding environmental programs, publishing sustainability reports, or improving eco-friendly operations. In contrast, companies with low earnings tend to prioritize short-term financial recovery and may neglect sustainability initiatives. Therefore, profitability acts as a reinforcing factor that strengthens the impact of board independence on environmental reporting. It enables companies to integrate sound governance with sustainable practices while building public trust, especially in an era where consumers and investors are increasingly attentive to corporate social and environmental impacts (Gerged, 2021).

H_8: Profitability moderates the impact of board independence level on environmental reporting.

METHODS

The analysis focuses on property and real estate companies listed on the IDX as the primary sample the Indonesia Stock Exchange during the 2021–2024 period. The research sample consists of 52 companies, with a total of 168 units of analysis. Purposive sampling was adopted in identifying the sample, and panel data regression analysis was used to examine the hypotheses.. Panel data regression includes classical assumption testing as a prerequisite for hypothesis testing. The hypothesis testing and data analysis were performed using EViews version 13 statistical software. Table 1 presents the sample selection criteria used in this study.

This study includes the dependent variable as part of its variable (Y), namely environmental disclosure, and the independent variables (X), which include managerial ownership (X1), foreign ownership (X2), frequency of board of commissioners meetings (X3), proportion of independent directors (X4), and profitability, proxied by Return on Assets (ROA), as the moderating variable (Z).

Table 1. Research Sample Criteria

No	Criteria	Number
1.	Population: Property & real estate sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period	92
2.	Property & real estate companies not listed on the IDX in 2021–2024	(15)
3.	Companies in the property and real estate sector with uninterrupted and comprehensive reporting over the 2021–2024 period	(24)
4.	Property & real estate companies that reported environmental disclosure consecutively during 2021–2024	(1)
Total units of analysis (52 companies × 4 years)		208
Outlier data		(40)
Final total units of analysis		168

Source: Data processed from various sources, 2025.

Environmental disclosure, as the dependent variable, is measured using content analysis. Content analysis is performed by quantifying the sentence count for each category 32 specific items in the GRI Standards 2021, based on previous studies. Table 2 presents the definitions and measurements of each variable.

Table 2. Operational Definition of Variables

No	Variable	Definition	Indicator	Measurement & Scale
1	Environmental Disclosure (ED)	Corporate environmental disclosure	GRI Standards 2021	(Number of disclosed items) / (32 items) Scale: Ratio
2	Managerial Ownership	Management parties who own shares in the company.	Percentage of shares owned by management	(Number of managerial shares) / (Total company shares) × 100% Scale: Ratio
3	Foreign Ownership	Foreign nationals who own shares in Indonesia.	Percentage of shares owned by foreign shareholders	(Number of foreign-owned shares) / (Total company shares) × 100% Scale: Ratio
4	Board of Commissioners Meeting Frequency	Meetings of the board of commissioners to discuss and decide on the company's strategic policies.	Number of board of commissioner's meetings	Meeting frequency = total number of meetings in one year Scale: Interval
5	Proportion of Independent Directors	Board members with no affiliation to management, commissioners, or majority/controlling shareholders.	Percentage of independent directors	(Number of independent directors) / (Total number of directors) × 100% Scale: Ratio
6	Profitability	The company's ability to generate profit within a certain period.	ROA (Return on Assets)	(Net profit after tax) / (Total assets) × 100% Scale: Ratio

Source: Data processed from various sources, 2025.

This study employs panel data regression analysis, with Equation (1) representing the panel data regression model.

$$ED = \alpha+\beta_1 X1_{(i,t)}+\beta_2 X2_{(i,t)}+\beta_3 X3_{(i,t)}+\beta_4 X4_{(i,t)}+\beta_5 (X_1 X_5)_{(i,t)+}\beta_6 (X_2 X_5)_{(i,t)+}\beta_7 (X_3 X_5)_{(i,t)+}\beta_8 (X_4 X_5)_{(i,t)+} e_{(1)} \text{....(1)}$$

Notes :

ED : Environmental Disclosure
α : Constant
$\beta_1 - \beta 8$: Regression coefficients
X1 : Managerial Ownership
X2 : Foreign Ownership
X3 : Frequency of Board of Commissioners' Meetings
X4 : Proportion of Independent Directors
X5 : Profitability
i : Cross-sectional unit
t : Time period
e : Error term

RESULTS AND DISCUSSION

To identify the optimal panel data regression model involves conducting several diagnostic tests, including the Chow, Hausman, and Lagrange Multiplier (LM) tests.

Table 3. Model Selection

Chow Test	Hausman Test	Lagrange Multiplier Test
Prob.	0.0000	0.6998
Model Selection	FEM (Fixed Effect Model)	REM (Random Effect Model)

Source: EViews 13 Output Results, 2025

According to the findings of panel data regression model selection shown on Table 3, this study employs the Random Effect Model (REM) approach to address the research problem. One advantage of using REM is its ability to reduce heteroskedasticity issues that may interfere with the analysis. Estimation of the panel data regression model using REM can be performed through the Generalized Least Squares (GLS) method to conduct classical assumption testing.

Normality Test

Normality testing is not a required prerequisite for the Ordinary Least Squares (OLS) approach, but it is required for the Generalized Least Squares (GLS) approach. The results of the normality test in Figure 1 show a Jarque-Bera probability value of 0.0548 > 0.05, indicating that the data in this study are normally distributed. The results of the normality test are presented on Figure 1.

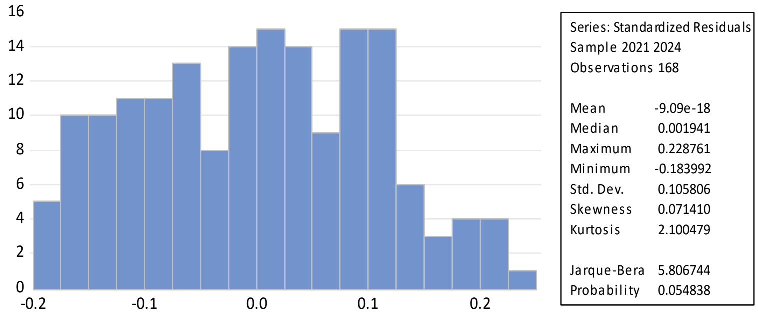

Figure 1. Results of the Normality Test
Source: EViews 13 Output, 2025

Table 4. Results of the Multicollinearity Test

	X1	X2	X3	X4	Z
X1	1.000000	-0.181255	-0.050916	-0.279808	-0.017998
X2	-0.181255	1.000000	-0.090563	0.158505	0.104319
X3	-0.050916	-0.090563	1.000000	-0.034895	-0.027229
X4	-0.279808	0.158505	-0.034895	1.000000	-0.141943
Z	-0.017998	0.104319	-0.027229	-0.141943	1.000000

Source: Eviews 13 Output Results, 2025

Multicollinearity Test

Referring to Table 4, the multicollinearity test results indicate that the intercorrelation among independent variables is less than 0.9 ($r < 0.9$), indicating that the research data is free from multicollinearity.

Table 5. Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.190545	0.036442	5.228796	0.0000
X1	-0.001522	0.000577	-2.637133	0.0092
X2	-0.001021	0.000362	-2.822021	0.0054
X3	0.015764	0.004240	3.717809	0.0003
X4	0.068040	0.028220	2.411028	0.0170
Z	0.005732	0.001242	4.614097	0.0000

Source: Eviews 13 Output Results, 2025

Panel data regression is utilized in this study to examine the extent to which independent variables such as managerial ownership, foreign ownership, frequency of board of commissioners meetings, and proportion of independent directors influence environmental disclosure, moderated by profitability within the analytical framework. According to the results (Table 5) obtained from the previous regression model estimation, the random effect chosen model aligns well with the nature of the data and the study's analytical needs. The Equation (2) applied in the panel data regression analysis is presented as follows.

$Y = 0.190545 - 0.001522X1 - 0.001021X2 + 0.015764X3 + 0.068040X4 + 0.005732Z + \varepsilon it$ ….. (2)

Moderating Regression Analysis (MRA)

Based on Table 6, the following moderating regression Equation (3) is obtained:

$Y = 0.196087 - 0.001791X1 - 0.001166\ X2 + 0.015939X3 + 0.065187X4 + 0.000504Z + 0.000258\ X1\_Z + 0.000006X2\_Z - 0.000098X3\_Z + 0.004567X4\_Z + \varepsilon it$ ……………… (3)

Table 6. Moderating Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.196087	0.036118	5.429110	0.0000
X1	-0.001791	0.000574	-3.118392	0.0022
X2	-0.001166	0.000365	-3.198129	0.0017
X3	0.015939	0.004224	3.773786	0.0002
X4	0.065187	0.028072	2.322173	0.0215
Z	0.000504	0.007695	0.065431	0.9479
X1_Z	0.000258	0.000009	2.770719	0.0063
X2_Z	0.000006	0.000064	0.936035	0.3507
X3_Z	-0.000098	0.001019	-0.097070	0.9228
X4_Z	0.004576	0.004116	1.111863	0.2679

Source: Eviews 13 Output Results, 2025

Hypothesis Testing

Partial Test (t-test)

The t-test (partial test) in regression analysis is applied to determine whether each independent variable has a statistically significant influence on the dependent variable when assessed individually, using a significance level of 5% ($\alpha = 0.05$). If the resulting probability value is below 0.05, it reveals that the predictor variable has a significant impact on the response variable and the hypothesis is accepted; otherwise, the hypothesis is rejected.

The possibility value for managerial ownership variable (X1) is $0.0022 < 0.05$, indicating an effect of managerial environmental information disclosure. However, the t-statistic of −3.118392 shows a negative relationship, meaning that managerial ownership has an undesirable effect on environmental disclosure; in consequence, H1 is rejected. These verdicts are coherent with the results of studies conducted by Gerged (2021), Syafitri et al. (2022), Wahyuningrum et al. (2022), and Wahyuningrum and Amalia (2023). In non-financial companies in Indonesia, managerial ownership does not influence corporate policy regarding environmental disclosure. The low level of managerial ownership in Indonesia creates a situation where managers' objectives do not match the objectives of company owners (Wahyuningrum et al., 2022). Managers who lack complete ownership of their company will probably find it hard to obtain necessary resources and capabilities to perform detailed environmental impact assessments which are essential for disclosure requirements. This condition can also occur because companies tend not to prioritize external interests and consider that the costs of implementing environmental initiatives outweigh the benefits. Managers view environmental disclosure as a risky practice because they fear their failed project will become public knowledge. Managers place their attention on short-term financial results which leads them to reduce their disclosure of environmental information (Gerged, 2021).

The probability value for the foreign ownership variable (X2) is 0.0017, which is below the significance threshold of 0.05. This result indicates that foreign ownership impacts corporate commitment to environmental reporting. However, the t statistic of −3.198129 reflects a negative association, meaning that foreign ownership negatively impacts environmental disclosure. Therefore, the second hypothesis (H2) is not supported. This outcome aligns with the findings of earlier research conducted by Asiva in (2019), Wahyuningsih and Meiranto (2021), and Richard and Wijaya (2022). These studies show that the level of foreign ownership does not encourage companies to increase transparency in environmental disclosure practices. Foreign investors with a short-term trading orientation prioritize quick profits over long-term company projects. Although the ratio of controlling shares held by foreign investors in Indonesian companies may vary depending on each governance perspective, most companies are not primarily controlled by foreign shareholder in Indonesia. Therefore, in this study, foreign ownership does not show a major effect on environmental disclosure practices (Wahyuningrum et al., 2024). Companies with foreign ownership also do not seem to prioritize environmental disclosure in order to meet stakeholder expectations regarding transparency. This condition highlights the importance of increasing awareness and allegiance to social and environmental responsibility among companies in Indonesia.

The probability value for the board meeting frequency variable (X3) is 0.0002, which is lower than the significance level of 0.05. This result suggests that the frequency of board of commissioners meetings significantly influence environmental disclosure. Furthermore, the t-statistic of 3.773786 reflects a positive direction, indicating that more frequency of board meetings is positively correlated with the extent of environmental disclosure. The third hypothesis (H3) stands accepted based on the study results. The statistical test results align with the findings from Hilmi and Pasaribu (2018); Effendi (2018); Kurniawan (2019); Suryarahman and Trihatmoko (2021) and Putra and Utomo (2024) who discovered that increased board of commissioners meetings lead to improved environmental disclosure practices. The research findings support stakeholder theory because they demonstrate board of commissioners meeting frequency affects organizational performance. The more frequent the meetings, the greater the opportunity to discuss important issues relevant to stakeholders. Regular meetings provide an opportunity to discuss environmental and sustainability issues, thereby strengthening the company's pledge to long-term social and environmental responsibility. In addition, a higher frequency of meetings contributes to an improvement in the company's reputation and provides broader benefits for all stakeholders.

The variable X4 which represents independent director proportion has a probability value of 0.0215. The value exceeds the standard significance threshold of 0.05. The results demonstrate that independent directors play a vital role in determining how companies disclose their environmental information. The t-statistic value of 0.065431 indicate independent directors are positively correlated with the extent of environmental reportings. Thus, the fourth hypothesis (H4) is accepted. These results corroborate previous studies in the same domain conducted by Gerged (2021), Suwandy and Rahayuningsih (2021), Okere et al. (2021), and Akhter et al. (2023), which show that independent directors have a positive impact on environmental disclosure. These results support stakeholder theory which suggests that boards become more effective at handling stakeholder needs when they have a higher percentage of independent directors. Independent directors bring valuable outside viewpoints because they operate independently from management which enables them to promote better environmental disclosure practices in companies. The directors require strong motivation to function as efficient monitors who prevent any form of collaboration with managers because their reputation depends on protecting shareholder interests. Therefore, independent directors are expected to ensure fair and impartial accountability by supporting transparency of environmental information (Gerged, 2021).

The interaction between managerial ownership (X1) and profitability (Z) makes a probability value of 0.0063 which stays below the 0.05 significance threshold (<0.05) with a coefficient value of 0.000258. The coefficient analysis of interaction terms shows that the managerial ownership variable has a coefficient of −0.001791 while its probability value equals 0.0022. The results demonstrate that profitability functions as a moderating variable which reduces the impact of managerial ownership on environmental disclosure. The fifth hypothesis (H5) receives acceptance in this study. The research findings demonstrate that profitable organizations experience reduced managerial ownership impact on their environmental disclosure activities. Managers tend to concentrate on short-term profit goals which makes them less likely to reveal environmental problems. The market position of stable companies that achieve higher profits makes them less motivated to solve environmental problems because their position remains secure in the market.

The significance level of the interaction effect between foreign ownership (X2) and profitability (Z) is 0.3507, which is larger than the significance level set at 0.05 (> 0.05), with a coefficient value of 0.000006. The foreign ownership variable showed a coefficient value of −0.001166 before the interaction with a probability value of 0.0017. The results show that profitability does not affect the relationship between the presence of foreign investors and sustainability disclosure because it does not change the strength of their connection. Thus, the sixth hypothesis (H6) is rejected. These results indicate that foreign investors tend to follow global standards and corporate sustainability policies that focus on transparency, regardless of the company's profitability level. Environmental disclosure happens because companies need to follow international regulations and ethical standards and because they need to protect their corporate image instead of chasing financial gains. According to the results of the study, profitability does not affect the relationship between foreign ownership and environmental disclosure.

The examination shows that the interaction between board of commissioners meeting frequency (X3) and profitability (Z) produces a probability value of 0.9228 which exceeds the 0.05 significance level threshold (> 0.05) while displaying a coefficient value of −0.000098. The board meeting frequency variable showed a coefficient value of −0.015939 along with a probability value of 0.0002 before any interaction occurred. The results show that profitability does not influence the relationship between meeting frequency and environmental disclosure because it does not change the direction of the effect. Hence, the seventh hypothesis (H7) is rejected. The rejection of this hypothesis is due to the fact that profitability does not hold strategic importance in defining how often board of commissioners meetings are held or how seriously they monitor environmental issues. The board of commissioners must continue their supervisory duties without fail regardless of changes in company profitability. The board of commissioners focuses on environmental disclosure because they must maintain good corporate governance and ethical standards rather than being motivated by company profit levels. The board of commissioners functions as the main body which monitors management compliance with good corporate governance principles by ensuring open environmental reporting and full responsibility for environmental matters. Profitability does not have a significant influence on how board of commissioners meeting frequency affects environmental disclosure because it does not impact the relationship between these two variables.

The probability value for influence of independent director proportion in moderating the relationship between (X4) and profitability (Z) is 0.2679, which is higher than the significance level set at 0.05, with a coefficient value of 0.004576. Before the interaction, the independent director proportion variable had a coefficient of 0.065187 with a probability value of 0.0215. These findings indicate that profitability does not act as a moderating variable that strengthens or weakens the influence of the independent director proportion on environmental disclosure. Thus, the eighth hypothesis (H8) is rejected. This may be because independent directors are responsible for ensuring transparency and accountability as part of their governance duties, not based on financial outcomes. Their decisions are guided more by ethical standards, regulations, and the need to maintain the company's credibility than by profit levels. Therefore, the hypothesis is rejected because profitability does not change the relationship between independent directors and environmental disclosure. Whether the company earns high or low profits, independent directors are expected to maintain the same level of oversight and commitment to disclosure practices.

Determination Coefficient Test

Table 7 presents the findings from the coefficient of determination test, indicating that the R squared value is 0.290471 or 29.04%. This result demonstrates that the independent variables, which include managerial ownership, foreign ownership, frequency of board of commissioners meetings, and proportion of independent directors, along with their respective interactions with profitability, account for only 29.04 percent variance observed in sustainability reporting. Therefore, the remaining 70.96 percent is attributed to other influencing factors that are not incorporated within the scope of this research model.

Table 7. Determination Coefficient Test Results (R2)

Weighted Statistics			
R-squared	0.290471	Mean dependent var	0.140359
Adjusted R-squared	0.250055	S.D. dependent var	0.087371
S.E. of regression	0.075663	Sum squared resid	0.904536
F-statistic	7.186988	Durbin-Watson stat	1.561188
Prob(F-statistic)	0.000000		

Source: Eviews 13 Output Results, 2025

CONCLUSIONS

This study examines how corporate governance affects environmental disclosure, with profitability acting as a moderating factor. The analysis is conducted on property and real estate firms listed on the Indonesia Stock Exchange (IDX) during the period from 2021 to 2024. The results indicate that both the number of board of commissioners meetings and board independence positively influences the extent of sustainability reporting. On the other hand, managerial ownership and foreign ownership are found to negatively influence environmental disclosure. In addition, profitability moderates the relationship between managerial ownership and environmental disclosure by reducing its effect. However, profitability does not play a moderating role in the relationships involving foreign ownership, board meeting frequency, or the proportion of independent directors.

This study recognizes several limitations. First, the coefficient of determination value is 0.290471, indicating that the variables examined, namely managerial ownership, foreign ownership, frequency of board of commissioners meetings, proportion of independent directors, and profitability, explain only 29.04% of the differences in environmental disclosure practices. The remaining 70.96% is influenced by other factors that are not addressed in this research. Moreover, the scope of this study focuses exclusively on property and real estate firms listed the on Indonesia Stock Exchange, which restricts the applicability of the findings to other industries. The research period from 2021 to 2024 may also be insufficient to capture broader developments in corporate governance and environmental disclosure practices.

Future research should consider examining other sectors and extending the research period in order to obtain more inclusive results that reflect the actual conditions of environmental disclosure practices. In addition, future research should also include other independent variables that may have a greater influence on environmental disclosure, such as media coverage, the size of the audit committee, the existence of an environmental committee, or environmental performance.

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