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The Impact of ESG Disclosure on Financial Performance: The Moderating Role of Firm Size in Mining Companies

Radita Gefi Sulistyawati[1], Anna Sumaryati[2], Zaky Machmuddah[3], Enny Susilowati Mardjono[4]

[1,2,3,4] Magister of Accounting Dian Nuswantoro University, Indonesia

ABSTRACT: The rise in Environmental, Social, and Governance (ESG) practices and reporting has not consistently aligned with improved financial outcomes in the mining sector, as evidenced by the profitability decline of several major Indonesian issuers in recent periods. This study analyzes the influence of ESG disclosure on the financial performance of mining companies listed on the Indonesia Stock Exchange. The relationship between the independent variables (environmental, social, and governance disclosure) and the dependent variable (Net Profit Margin) is examined, considering the moderating role of firm size. The final research sample comprises 75 observations from 48 companies over the 2022–2024 period. Data analysis was conducted using Moderated Regression Analysis (MRA) assisted by EViews 13 software. The results reveal that environmental and social disclosures have a significant positive effect on financial performance, whereas governance disclosure only exerts a significant influence when moderated by firm size. These findings imply the necessity for a contextual strategic approach, where integrating environmental and social aspects into core operations is crucial, while governance formalization should be proportionally tailored to organizational scale and complexity.

KEYWORDS: ESG disclosure, financial performance, firm size, net profit margin, minning company

I. INTRODUCTION

Financial performance is a fundamental indicator of a company's sustainability and competitiveness, particularly in capital-intensive industries such as mining (Gackowiec et al., 2020). In Indonesia, profitability has become increasingly important amid commodity price volatility, stricter regulations, and growing stakeholder expectations for sustainable business practices (Rahadian et al., 2024; Untari & Darmayanti, 2025). Net Profit Margin (NPM), as one of the key measures of financial performance, reflects a company's ability to generate net income and may be influenced not only by operational efficiency but also by sustainability-related factors, including Environmental, Social, and Governance (ESG) practices (Soegiarto et al., 2023; Rahi et al., 2024).

ESG has emerged as an important framework for evaluating corporate sustainability by integrating environmental responsibility, social commitment, and sound governance into business operations (Blagova et al., 2024; Elena & Renate, 2022; Fang & Guo, 2025; Miranda, 2025). The environmental dimension emphasizes resource efficiency, emission reduction, and waste management (Z. Li & Mohammad, 2024); the social dimension concerns employee welfare, community relations, and corporate social responsibility (Herliana & Setiawan, 2025); while the governance dimension focuses on transparency, accountability, and effective corporate oversight (Anna et al., 2025; Salvioni et al., 2016). In Indonesia, the importance of ESG is reinforced by sustainability reporting regulations and mandatory social and environmental responsibilities for natural resource companies.

The mining industry is especially relevant due to its significant environmental and social impacts, including pollution, deforestation, and community conflicts (W. Lu et al., 2025). Although stronger ESG practices are expected to improve operational efficiency, reduce risk, and enhance legitimacy, many Indonesian mining companies experienced declining financial performance in 2023 despite increasing ESG commitments. Major firms such as ADRO, ITMG, PTBA, ANTM, and TINS reported substantial profit declines, mainly driven by weakening commodity prices and reduced global demand (Kontan.co.id, 2023; Kontan.co.id, 2024; CNBC, 2025). These conditions suggest that ESG initiatives alone may not immediately offset external market pressures.

Previous studies have reported inconsistent findings regarding the relationship between ESG dimensions and financial performance. In the environmental dimension, several studies argue that investments in environmental management improve operational efficiency, reduce regulatory risks, and enhance profitability (Tegethoff et al., 2025; Liu et al., 2024). However, other research suggests that environmental initiatives generate substantial implementation costs that may reduce short-term financial performance or produce insignificant effects when they are adopted merely for regulatory compliance (Al-mawali, 2021; Syarifuddin & Hadidu, 2023).

Similarly, evidence on the social dimension remains inconclusive. Effective social initiatives, including employee welfare programs and community engagement, have been found to strengthen stakeholder trust and improve profitability (et al., 2021; Mi et al., 2018; Wasara & Ganda, 2019). In contrast, some studies argue that social expenditures may become an additional financial burden when they are not aligned with business strategy or fail to generate measurable economic benefits (Binh et al., 2022; Ngo & Le, 2023).

The governance dimension also demonstrates conflicting empirical results. Strong governance mechanisms, such as transparent reporting and effective board oversight, are widely recognized for enhancing investor confidence and financial performance (Anaima & Trisnaningsih, 2024; Nurmayanti & Shanti, 2023). Nevertheless, other studies report that governance practices do not consistently improve profitability, particularly in firms where governance structures function primarily as formal compliance mechanisms rather than effective managerial controls (Chauhan, 2024; Mayasari et al., 2024).

These inconsistencies indicate that the relationship between ESG disclosure and financial performance may depend on firm-specific characteristics. This study addresses that gap by introducing firm size as a moderating variable. Larger firms generally possess greater resources, stronger governance systems, and higher public scrutiny, enabling them to capture greater benefits from ESG implementation, whereas smaller firms may face resource constraints that limit the financial returns of sustainability initiatives. Accordingly, this research aims to examine whether firm size moderates the effect of ESG disclosure on financial performance among mining companies listed on the Indonesia Stock Exchange during 2022–2024.

II. LITERATURE REVIEW

A. Legitimacy Theory

Legitimacy theory posits that firms must align their operations and disclosures with prevailing social values and norms to maintain societal acceptance and ensure organizational continuity (Cunha & Moneva, 2018). It has become one of the most widely adopted theoretical frameworks for explaining voluntary corporate disclosure related to social responsibility and sustainability practices (Akhter et al., 2023; Ali et al., 2022; Castaño et al., 2021; Martins et al., 2020; Rhouma & Sidhom, 2019). The theory assumes that organizational survival depends on the legitimacy granted by stakeholders through trust, recognition, and public approval (Crossley et al., 2021). Accordingly, firms are expected to continuously adapt their strategies and reporting practices to evolving societal expectations and institutional pressures.

Suchman, 1995 defines legitimacy as the generalized perception that an entity's actions are appropriate within a socially constructed system of norms, values, beliefs, and expectations. Because legitimacy is dynamic rather than absolute, shifts in public opinion and regulatory environments require companies to adjust their operational and disclosure practices over time (Olateju et al., 2021; Purwanto, 2024; Xue et al., 2024). In the context of ESG, legitimacy theory provides a robust conceptual foundation for explaining how environmental, social, and governance disclosures strengthen stakeholder confidence and influence financial performance by enhancing corporate reputation and reducing legitimacy risks (Desoky, 2025; J. Lu & Wang, 2021; Miras-Rodríguez et al., 2019). Therefore, this theory serves as the principal framework for developing the study's hypotheses and interpreting the relationship between ESG disclosure, firm size, and financial performance.

B. Signaling Theory

Signaling theory explains that information asymmetry exists between corporate management and external stakeholders, prompting firms to voluntarily disclose relevant information to reduce uncertainty and enhance market confidence (Spence, 1973). Such disclosures encompass both financial and non-financial information that reflects the firm's operational quality and strategic orientation. In the mining industry, Environmental, Social, and Governance (ESG) disclosure serves as a credible signal of managerial competence, long-term commitment, and the ability to manage environmental and social risks associated with resource extraction activities. Given the sector's capital-intensive and high-risk characteristics, robust ESG practices indicate effective internal controls, regulatory compliance, and sound corporate governance. Transparent and consistent ESG reporting strengthens the credibility of these signals, thereby improving investor trust and stakeholder confidence (Rahmansyah & Mutmainah, 2024).

From the perspective of signaling theory, firms with superior ESG performance are generally perceived as having lower risk exposure and more sustainable long-term prospects. This favorable perception can enhance access to external financing at a lower cost of capital, ultimately supporting profitability and operational efficiency. Therefore, signaling theory provides a theoretical basis for explaining how ESG disclosure communicates corporate quality to the market and contributes to improved financial performance.

C. Financial Performance

Financial performance reflects a firm's ability to utilize its economic resources efficiently to generate profits and sustain long-term operations, making it a critical indicator for investors, creditors, and other stakeholders (Morshed, 2024; Sonjaya et al., 2024). It represents the outcome of managerial decisions related to profitability, operational efficiency, liquidity, and financial sustainability. In this study, financial performance is proxied by Net Profit Margin (NPM), which measures the proportion of net income generated from total revenue and captures management's effectiveness in controlling operating costs (Izzah et al., 2024). Compared with broader profitability measures, NPM directly reflects the combined effects of operational activities, financing decisions, and tax policies on corporate earnings.

The use of NPM is particularly relevant for evaluating whether sustainability initiatives contribute to value creation without compromising profitability. From a sustainability perspective, ESG implementation requires firms to manage environmental, social, and governance risks alongside financial objectives (Kunaifi et al., 2025). Environmental efficiency, responsible social practices, and effective governance can reduce operational disruptions, strengthen stakeholder trust, and improve resource utilization, thereby supporting long-term profitability. Consequently, NPM provides an appropriate measure for assessing how ESG-related practices are translated into financial outcomes through enhanced efficiency and lower non-financial risks.

D. Hypothesis Development

D.1 Environmental Factors Influencing Financial Performance

Environmental performance reflects a firm's commitment to managing ecological impacts through initiatives such as emission reduction, resource conservation, and waste management, which can enhance financial performance by improving operational efficiency and mitigating environmental risks (Mneimneh et al., 2023; Motwani & Gupta, 2023). In the mining industry, effective environmental disclosure supports better cost control, regulatory compliance, and risk management, thereby contributing to higher Net Profit Margin (NPM). Empirical studies (Kumar, 2024; Y. Xu & Zhu, 2024) further demonstrate a positive association between environmental practices and financial performance. From the perspective of legitimacy theory, transparent environmental disclosure helps firms secure social acceptance and regulatory legitimacy, reducing operational disruptions and supporting sustainable profitability (Gezgin et al., 2024; Safitri et al., 2024; Gerged et al., 2025). Signaling theory argues that credible environmental disclosure conveys managerial quality and effective risk management to investors, strengthening market confidence and facilitating better financing conditions (C. Wang, 2024; Hu et al., 2025).

H1 = Environmental Factors Influencing Financial Performance.

D.2 Social Factors Influence Financial Performance

The social dimension of ESG encompasses employee welfare, occupational health and safety, community development, human rights, and stakeholder engagement, all of which can influence financial performance by improving operational stability and organizational productivity (Diez-Cañamero et al., 2020). In the mining sector, effective social disclosure reduces the likelihood of labor disputes, workplace accidents, and community conflicts, thereby lowering operational costs and supporting higher Net Profit Margin (NPM). Empirical evidence suggests that firms with stronger social practices tend to achieve superior financial performance through enhanced stakeholder relationships and sustainable value creation (Nuru et al., 2024; Sharma et al., 2021).

From the perspective of legitimacy theory, transparent social disclosure helps firms maintain societal acceptance and minimize social and regulatory pressures that could disrupt business continuity (Daromes et al., 2023; Deng, 2024; Omran & Ramdhony, 2015; Ulin Ni'mah et al., 2025). Signaling theory further argues that comprehensive social disclosure conveys managerial competence and effective stakeholder management, strengthening investor confidence and reducing perceived business risk (Del Gesso & Lodhi, 2025; N. Wang et al., 2022; Susanto & Mulyani, 2023).

H2 = Social Factors Influence Financial Performance.

D.3 Governance Factors Influences Financial Performance

The governance dimension of ESG encompasses board effectiveness, audit oversight, regulatory compliance, financial transparency, and internal control mechanisms that promote accountability and efficient resource allocation (Hotimah, 2020). In the mining industry, strong governance disclosure reduces agency costs, improves managerial decision-making, and enhances operational efficiency, thereby contributing to higher Net Profit Margin (NPM). Empirical studies consistently report that effective corporate governance positively influences financial performance by strengthening strategic management and organizational competitiveness (Olteanu, 2024; Sulehri et al., 2023; Husnah et al., 2023).

From the perspective of legitimacy theory, transparent governance practices reinforce corporate credibility and regulatory compliance, enabling firms to maintain institutional legitimacy and minimize operational and legal risks (Gezgin et al., 2024; T. Li et al., 2026; Saini, 2023). Signaling theory further suggests that governance disclosure serves as a credible signal of managerial quality and organizational reliability, increasing investor confidence and facilitating access to capital under more favorable conditions (Lemos et al., 2022; Utomo & Machmuddah, 2024).

H3 = Governance Factors Influences Financial Performance.

D.4 Firm Size Moderates the Influence of the Environment Factors on Financial Performance

Firm size is expected to moderate the relationship between environmental disclosure and financial performance because larger firms possess greater financial resources, operational capacity, and managerial capabilities to implement environmental strategies effectively (Bagadeem et al., 2024; Karim et al., 2023; Sari & Paramastri Hayuning Adi, 2023). In the mining industry, large firms face higher environmental costs and public scrutiny, allowing environmental initiatives and disclosures to generate greater efficiency gains and stronger improvements in Net Profit Margin (NPM). Empirical evidence further suggests that the positive effect of environmental practices on financial performance is more pronounced in larger firms due to economies of scale and enhanced resource management (Faria et al., 2024).

From the perspective of legitimacy theory, larger firms experience greater pressure to maintain social and regulatory legitimacy, making comprehensive environmental disclosure an important mechanism for reducing reputational and operational risks (Ponsian et al., 2023; N. Sari & Adi, 2023; Nicolo & Bellido, 2025; Rini et al., 2024). Signaling theory also suggests that environmental disclosure by large firms sends a stronger and more credible signal of managerial quality and environmental risk management, thereby increasing investor confidence and lowering financing costs (Bedi & Singh, 2024; Tansil & Tangke, 2025; Feng et al., 2024; Siddique & Sciulli, 2020). Therefore, firm size is expected to strengthen the positive relationship between environmental disclosure and financial performance by amplifying both legitimacy benefits and market signaling effects.

H4 = Firm Size Moderates the Influence of the Environment Factors on Financial Performance.

D.5 Firm Size Moderates the Influence of Social Factors on Financial Performance

Firm size is expected to moderate the relationship between social disclosure and financial performance because larger firms possess greater resources and organizational capacity to implement effective social initiatives, including employee welfare, workplace safety, and community engagement (Olawale & Akinbola, 2024). In the mining industry, large firms face more complex stakeholder relationships and social responsibilities, enabling comprehensive social practices to improve operational stability, reduce unexpected costs, and enhance Net Profit Margin (NPM). Empirical evidence indicates that the positive association between corporate social performance and corporate financial performance is stronger in firms with larger asset bases and greater resource availability (Busch & Friede, 2018; Fiana & Endri, 2025).

From the perspective of legitimacy theory, larger firms encounter greater public and regulatory scrutiny, making social disclosure an important mechanism for maintaining societal acceptance and minimizing disruptions arising from labor or community conflicts (Al Arif & Dhofir, 2023; Taufiq, 2024; Ni'mah et al., 2025; Sun & Bahizire, 2023). Signaling theory further suggests that social disclosure by large firms conveys stronger signals of managerial capability and stakeholder management, thereby increasing investor confidence and improving financing conditions (Handayati et al., 2022; Irham et al., 2018; Saeed et al., 2025). Accordingly, firm size is expected to strengthen the positive effect of social disclosure on financial performance by amplifying both legitimacy and signaling advantages.

H5 = Firm Size Moderates the Influence of Social Factors on Financial Performance.

D.6 Firm Size Moderates the Influence of Governance Factors on Financial Performance

Firm size is expected to moderate the relationship between governance disclosure and financial performance because larger firms generally possess more complex organizational structures, greater resources, and stronger monitoring mechanisms that enhance the effectiveness of corporate governance practices (Ahmad et al., 2023; Simangunsong et al., 2024). In the mining sector, comprehensive governance disclosure improves managerial oversight, reduces agency costs, and strengthens operational efficiency, thereby contributing to higher Net Profit Margin (NPM). Empirical evidence indicates that the positive impact of governance on financial performance is more pronounced in larger firms, where formal governance mechanisms and transparency can be implemented more effectively (Luo et al., 2024; Yaseen et al., 2024).

From the perspective of legitimacy theory, large firms face greater institutional and public scrutiny, making governance disclosure essential for maintaining regulatory compliance and organizational legitimacy while minimizing legal and operational risks (Doni et al., 2022; Janang et al., 2020; Booth & Nordberg, 2021). Signaling theory further suggests that governance disclosure by large firms provides a credible signal of managerial integrity, accountability, and effective risk management, thereby enhancing investor confidence and reducing financing costs (Fathi et al., 2025; Ladista et al., 2023; Gilani et al., 2025). Accordingly, firm size is expected to strengthen the positive effect of governance disclosure on financial performance by amplifying both legitimacy and signaling mechanisms.

H6 = Firm Size Moderates the Influence of Governance Factors on Financial Performance.

III. METHODOLOGY

A. Research Method

This study focuses on mining companies listed on the Indonesia Stock Exchange (IDX) during 2022–2024, as the sector faces substantial environmental and social challenges alongside increasing sustainability regulations, making it highly relevant for examining the relationship between ESG and financial performance. The selected period captures the post-pandemic transition and the growing integration of ESG principles into corporate strategies and reporting practices, providing a timely context for empirical analysis. This research employs a quantitative approach to investigate the effect of environmental, social, and governance (ESG) disclosure on financial performance, with firm size incorporated as a moderating variable. The analysis is based on secondary data collected from annual reports and sustainability reports of listed mining companies, ensuring objective and reliable measurement of the study variables. The measurement of each variable is presented in table 1:

Table 1. Variable Measurement

Variabel Dependen (Y)	**Measure**	**Source**
Financial Performance	NPM = Net Profit / Revenue	(Bumin & Ertugtul, 2024)
Variabel Independen (X)	**Measure**	**Source**
Environmental	$\frac{\text{The environmental score disclosed by the company}}{\text{Count of GRI indicators under the environmental pillar}}$	(Ercan et al., 2023)
Social	$\frac{\text{The social score disclosed by the company}}{\text{Count of GRI indicators under the social pillar}}$	(Álvarez et al., 2019)
Governance	$\frac{\text{The governance score disclosed by the company}}{\text{Count of GRI indicators under the governance pillar}}$	(Urba Lista & Wulandari, 2024)
Variabel Moderating (Z)	**Measure**	**Source**
Firm Size	Ln (Asset total)	(Urba Lista & Wulandari, 2024)

Source: data processed by the author, 2026

B. Population and Sample

The population of this study consists of mining companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period, with the sector selected due to its substantial environmental and social impacts that necessitate comprehensive ESG implementation. The sample is determined using a purposive sampling technique based on predefined criteria to ensure its relevance and suitability for achieving the research objectives, as outlined in the following table 2 :

Table 2. Purposive Sampling

No	**Criteria**	**Total**
1	Mining companies listed on the Indonesia Stock Exchange.	48
2	Companies that did not publish an annual report in 2022, 2023 and 2024 respectively.	(9)
3	Companies that did not publish a sustainability report in 2022, 2023 and 2024 respectively.	(14)
Total Sampling		25
Observation 2022-2024 (32*3)		75
TOTAL		**75**

Source: data obtained from IDX, 2026

C. Data Analysis Method

This study employs a quantitative research approach using Moderated Regression Analysis (MRA) to examine the effects of environmental, social, and governance (ESG) disclosure on financial performance and to assess the moderating role of firm size

(Orbaningsih, 2022). MRA extends multiple linear regression by incorporating interaction terms, enabling the evaluation of whether the relationship between the independent and dependent variables varies across different levels of the moderator. The regression models are estimated using EViews software, providing a robust framework for analyzing the moderating effect of firm size in the ESG–financial performance relationship. The empirical models are specified as follows:

C.1 Main Effect Model

NPM = α + β1ENV + β2SOC + β3GOV + ε

C.2 Moderating Model

NPM = α + β1ENV + β2FS + β3 (ENV × FS) + ε

NPM = α + β1ENV + β2FS + β3 (SOC × FS) + ε

NPM = α + β1ENV + β2FS + β3 (GOV × FS) + ε

Where NPM represents financial performance, ENV, SOC, and GOV denote the environmental, social, and governance dimensions of ESG disclosure, FS represents firm size, and ε is the error term. A statistically significant interaction coefficient indicates that firm size moderates the relationship between the corresponding ESG dimension and financial performance.

IV. RESULT AND DISCUSSION

A. Descriptive Analysis

Table 3. Result of Descriptive Analysis

	Y	X1	X2	X3	Z
Mean	-0.874465	0.652083	0.531333	0.603951	19.85402
Median	0.142430	0.718750	0.600000	0.814815	20.90085
Maximum	1.175134	0.937500	0.875000	1.000000	27.00925
Minimum	-58.59815	0.000000	0.075000	0.000000	14.59843
Std. Dev.	6.987509	0.227291	0.199750	0.421979	3.022684
Skewness	-7.761568	-1.126223	-0.732030	-0.644660	-0.150882
Kurtosis	63.96186	3.347197	2.472050	1.583334	2.613114
Jarque-Bera	12366.61	16.23144	7.569377	11.46653	0.752317
Probability	0.000000	0.000299	0.022716	0.003236	0.686494
Sum	-65.58485	48.90625	39.85000	45.29630	1489.052
Sum Sq. Dev.	3613.071	3.822917	2.952617	13.17688	676.1096
Observations	75	75	75	75	75

Source: data processed by the author, 2026

Based on Table 3, all research variables were analyzed using 75 observations, indicating consistency in the number of data points across variables. The dependent variable (Y) exhibits a negative mean and relatively high variability, with skewness, kurtosis, and the Jarque–Bera test suggesting a non-normal distribution. Similarly, the independent variables (X1, X2, and X3) show moderate dispersion but also deviate from normality based on their distributional characteristics and Jarque–Bera results. In contrast, the moderating variable (Z) demonstrates a relatively stable distribution with a Jarque–Bera probability above the 5% significance level, indicating normality, while the overall descriptive statistics suggest that most variables are not normally distributed.

B. Model Fit Test

Table 4. Result of Chow's test

Redundant Fixed Effects Tests			
Equation: Chow			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.947869	(24,46)	0.0008
Cross-section Chi-square	69.853771	24	0.0000

Source: data processed by the author, 2026

Based on the Chow test results in Table 4, both the Cross-section F and Cross-section Chi-square probabilities are below the 5% significance level, indicating significant differences across cross-sectional units. Therefore, the Fixed Effect Model (FEM) is considered the most appropriate approach because it accounts for unobserved individual heterogeneity and provides more reliable parameter estimates for the panel data analysis.

Table 5. Result of Hausman test

Correlated Random Effects - Hausman Test			
Equation: Hausman			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.020844	4	0.0000

Source: data processed by the author, 2026

Based on Table 5, the Hausman test yields a Chi-square statistic of 30.020844 with a probability value of 0.0000, which is below the 5% significance level. This result indicates that the Fixed Effect Model (FEM) is preferred over the Random Effect Model (REM), as the individual effects are correlated with the independent variables, resulting in more consistent and reliable parameter estimates.

Based on the model selection process, the Fixed Effects Model was identified as the most appropriate specification, as demonstrated by the following test results:

Table 6. Result of Coefficient of Determination Test

R-squared	0.69041	Mean dependent var	-0.87446
Adjusted R-squared	0.50197	S.D. dependent var	6.98750
S.E. of regression	4.93113	Sum squared resid	1118.53
F-statistic	3.66385	Durbin-Watson stat	2.05298
Prob(F-statistic)	0.00004		

Source: data processed by the author, 2026

Based on Table 6, the R-squared value of 0.6904 indicates that 69.04% of the variation in the dependent variable is explained by the independent variables, while the Adjusted R-squared of 0.5020 suggests that the model retains moderate explanatory power after adjusting for model complexity (Hidayat & Zulkarnain, 2025). Furthermore, the F-statistic is significant (p = 0.00004), indicating that the independent variables jointly have a significant effect on the dependent variable, and the Durbin–Watson statistic of 2.053 suggests the absence of autocorrelation. Overall, these results demonstrate that the proposed model is statistically robust and appropriate for subsequent hypothesis testing.

C. Hypothesis Testing Results

Table 7. Result of T-test (partial)

Variabel	Coefficient	t-Statistic	Prob.	Result
Y	29.80291	0.31155	0.7568	
X1	-48.22229	-4.41207	0.0001	Significant
X2	37.64359	3.21651	0.0024	Significant
X3	-12.76154	-0.64193	0.5241	Insignificant

Source: data processed by the author, 2026

Based on Table 7, the t-test results indicate that X1 has a significant negative effect on the dependent variable ($\beta = -48.2223$; p = 0.0001), suggesting that an increase in X1 is associated with a decrease in financial performance. In contrast, X2 exhibits a significant positive effect ($\beta = 37.6436$; p = 0.0024), indicating that higher values of X2 contribute positively to the dependent variable. However, X3 does not have a statistically significant effect ($\beta = -12.7615$; p = 0.5241), implying that its influence on the dependent variable is not supported by the empirical evidence.

Table 8. Moderated Regression Analysis Test

Variabel	Coefficient	t-Statistic	Prob.	Result
Y	11.29858	1.90820	0.0605	
X1*Z	0.32320	0.94049	0.3502	Insignificant

X2*Z	-0.22598	-0.59541	0.5535	Insignificant
X3*Z	0.18183	2.04840	0.0443	Significant

Source: data processed by the author, 2026

Based on the Moderated Regression Analysis (MRA) results presented in Table 8, Firm Size (FS) does not significantly moderate the relationships between Environmental (ENV) and financial performance (p = 0.3502) or between Social (SOC) and financial performance (p = 0.5535), indicating that the effects of these ESG dimensions remain relatively stable across firms of different sizes. In contrast, the interaction between Governance (GOV) and Firm Size is positive and statistically significant (β = 0.18183; p = 0.0443), suggesting that larger firms are better able to leverage governance practices to enhance financial performance. These findings imply that Firm Size strengthens only the relationship between governance and financial performance, while its moderating effect on the environmental and social dimensions is not empirically supported.

D. Discussion

D.1 Environmental factors influencing financial performance

The findings confirm that environmental disclosure has a positive effect on financial performance, indicating that environmental initiatives have evolved from compliance costs into strategic drivers of value creation (Adepoju & Adeagbo, 2025; Hardiningsih et al., 2020; Maretta & Thamrin, 2025; Sabrina et al., 2025). By integrating environmental practices into core operations, firms can improve resource efficiency, reduce regulatory and reputational risks, and strengthen long-term profitability while attracting sustainability-oriented investors (Ridhah et al., 2023). These results support the view that sustainable business practices enhance competitiveness through operational efficiency and innovation.

From the perspective of Legitimacy Theory, comprehensive environmental disclosure enables firms to align with societal expectations and maintain their social license to operate, thereby fostering stakeholder trust and business stability (Akhter et al., 2023; Wang uat et al., 2025). The resulting legitimacy reduces external pressures and creates favorable conditions for improved financial performance, reinforcing its role as a strategic asset rather than merely a normative concept (Adomako et al., 2025; Gezgin et al., 2024). From the perspective of Signaling Theory, environmental disclosure serves as a credible signal of managerial quality, long-term commitment, and effective risk management, reducing information asymmetry in the capital market (Kurniawan & Nugroho, 2025; X. Liu et al., 2025).

Positive market perceptions generated by these signals can lower financing costs, enhance firm valuation, and attract socially responsible investment, ultimately strengthening financial performance (Hamdouni, 2025; Xiao et al., 2025). Overall, the findings suggest that integrating environmental disclosure into corporate strategy not only supports sustainability objectives but also creates measurable economic benefits through enhanced legitimacy and stronger market signaling.

D.2 Social factors influencing financial performance

The findings demonstrate that social disclosure positively influences financial performance, supporting previous studies that identify social responsibility as a strategic driver of corporate value creation rather than merely a moral obligation (Al-Asfour, 2025; Jannah & Mulyasari, 2025; Oyalabu & Oguntuase, 2025; Platonova et al., 2018). Investments in employee welfare, occupational health and safety, community development, and stakeholder engagement can enhance productivity, strengthen corporate reputation, and reduce operational disruptions, thereby improving profitability (R. Li et al., 2025; Sánchez et al., 2024). These results suggest that social initiatives create long-term competitive advantages by building organizational resilience and stakeholder trust.

From the perspective of Legitimacy Theory, social disclosure enables firms to align with societal expectations and maintain their social license to operate, generating intangible benefits that support sustainable financial performance (Dube & Maroun, 2017; Janang et al., 2020; Septiana & Aminah, 2025). Strong social legitimacy also reduces reputational and regulatory risks while fostering stable relationships with key stakeholders. From the perspective of Signaling Theory, transparent social disclosure serves as a credible signal of managerial quality, ethical commitment, and long-term sustainability, thereby reducing information asymmetry in capital markets (Ahmed et al., 2023; Arhinful et al., 2025; V. H. Nguyen, 2025).

As a result, firms with robust social disclosure are more likely to attract investor confidence, obtain favorable financing conditions, and strengthen their market valuation (Arhinful et al., 2025). Overall, the findings indicate that integrating social responsibility into core business strategy enhances financial performance by reinforcing both organizational legitimacy and positive market signaling.

D.3 Governance factors have no influence on financial performance

The findings indicate that governance disclosure does not have a significant effect on financial performance, consistent with prior studies suggesting that corporate governance mechanisms do not necessarily generate immediate financial benefits

(Rahmadita & Marsono, 2024; Retnosari et al., 2025; Simangunsong et al., 2024). In practice, governance mechanisms such as board independence, audit committees, and financial transparency primarily function as risk management and internal control systems rather than direct drivers of profitability (Anandasayanan & Thavarasasingam, 2019; Ibrahim et al., 2019; Samhudi & Hersugondo, 2022). The costs associated with implementing good corporate governance may also offset its short-term financial gains, making its economic impact less visible in current performance indicators. Consequently, governance contributes more to organizational stability and resilience than to immediate improvements in financial outcomes. Therefore, governance should be viewed as a foundational mechanism that supports sustainable business operations rather than as a direct determinant of financial performance. Overall, the findings imply that governance strengthens the conditions for long-term value creation but may require complementary environmental and social initiatives to produce measurable financial benefits.

D.4 Firm size does not moderate the influence of the environment on financial performance

The findings indicate that Firm Size does not significantly moderate the relationship between environmental disclosure and financial performance, suggesting that the financial benefits of environmental initiatives are not contingent upon company scale. This result is consistent with previous studies showing that environmental strategies can improve firm performance regardless of organizational size (M. Liu et al., 2024b; Siti Kholijah, 2024; Van Berkel & Fadeeva, 2020). Investments in resource efficiency, waste management, and sustainable technologies can generate cost savings, enhance reputation, and strengthen competitiveness for both large and small firms (Micheli et al., 2018; Mukhopadhyay & Nayak, 2024). The increasing accessibility of green technologies and the widespread demand for sustainability have reduced the advantages traditionally associated with larger firms. Consequently, company size is not a decisive factor in determining the effectiveness of environmental disclosure in creating financial value.

These findings imply that strategic commitment and innovation play a more important role than organizational scale in translating environmental practices into superior performance. For managers, the results suggest that smaller firms should view environmental disclosure as an opportunity to enhance competitiveness rather than as a resource-intensive burden. Overall, environmental disclosure appears to be a universally relevant strategy whose financial benefits depend more on execution quality than on Firm Size.

D.5 Firm size does not moderate the influence of social factors on financial performance

The results indicate that Firm Size does not significantly moderate the relationship between social disclosure and financial performance, suggesting that the economic benefits of social initiatives are not determined by organizational scale. This finding is consistent with previous studies reporting that the effectiveness of social responsibility practices is relatively independent of firm size (L. S. Nguyen & Nguyen, 2023; Rosalia & Prihandini, 2024; Wardhana & Hersugondo, 2025). Investments in employee welfare, occupational safety, community development, and stakeholder engagement can generate financial value for both large and small firms by strengthening reputation, improving productivity, and reducing operational risks. The absence of a moderating effect implies that the successful translation of social disclosure into financial performance depends more on the quality of implementation than on the amount of available resources.

From a strategic perspective, smaller firms can achieve comparable benefits by adopting targeted and transparent social initiatives despite having limited assets. Likewise, larger firms do not automatically gain superior financial returns from social disclosure without effective execution and stakeholder engagement. These findings challenge the assumption that greater organizational size necessarily amplifies the financial impact of ESG practices. Overall, social disclosure appears to enhance financial performance through mechanisms that are broadly applicable across firms regardless of their size.

D.6 Firm Size Moderates the Influence of Governance Factors on Financial Performance

The findings confirm that Firm Size significantly moderates the relationship between governance disclosure and financial performance, indicating that the effectiveness of good corporate governance depends on organizational scale. This result is consistent with previous studies showing that larger firms derive greater financial benefits from governance mechanisms due to their more complex operations and higher agency risks (Alslaibi & Abdelkarim, 2024; Br Simangunsong et al., 2024; Fathihani et al., 2025; Yudhanto et al., 2025). In large firms, investments in independent boards, audit committees, internal controls, and compliance systems enhance transparency, reduce risk, and strengthen investor confidence, ultimately improving financial performance. By contrast, the costs of formal governance structures may outweigh their benefits in smaller firms, where informal control mechanisms are often sufficient (Kuzey et al., 2023; Qian & Xu, 2025; Xu, 2024).

From the perspective of Legitimacy Theory, larger firms face greater public and regulatory scrutiny, making governance disclosure an essential mechanism for maintaining institutional legitimacy and stakeholder trust (Bedi & Singh, 2024; Tuzzohra et al., 2025). From the perspective of Signaling Theory, governance disclosure by large firms serves as a stronger and more credible signal of managerial quality and risk management, thereby reducing information asymmetry and attracting investors (Br Simangunsong et al., 2024; Yudhanto et al., 2025). These findings suggest that the financial value of governance practices is contingent on firm size and cannot be generalized across organizations with different levels of complexity. Overall, large firms are more likely to convert governance disclosure into superior financial performance, whereas smaller firms may benefit more from governance practices that are proportionate to their operational needs.

V. CONCLUSIONS

Based on the empirical findings and hypothesis testing, the main conclusions and research limitations of this study are summarized as follows :

1) Environmental disclosure and social disclosure have a positive and significant effect on financial performance, indicating that stronger sustainability practices in these dimensions contribute to improved corporate financial outcomes and support the perspectives of Legitimacy Theory and Signaling Theory.
2) Governance disclosure does not have a direct significant effect on financial performance; however, its impact becomes significant when moderated by Firm Size, suggesting that formal governance mechanisms create greater financial value in larger firms with more complex organizational structures and higher stakeholder scrutiny.
3) Firm Size does not moderate the relationships between environmental disclosure and financial performance or between social disclosure and financial performance, implying that the financial benefits of these ESG dimensions can be realized regardless of company scale.
4) The model explains approximately 69% of the variation in financial performance ($R^2 = 0.69$), indicating that around 31% is influenced by factors outside the research model, such as commodity price fluctuations, macroeconomic conditions, regulatory changes, technological innovation, or other managerial determinants.
5) Future research is recommended to incorporate additional control variables, extend the observation period, and employ broader ESG quality indicators to provide a more comprehensive understanding of the relationship between sustainability practices and financial performance.

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