

How to Cite

Putri, L. P. R. S., & Suartana, I. W. (2026). Environmental, social, and governance disclosure and financial performance: Does board of commissioners size matter?. *International Journal of Business, Economics and Management*, 9(2), 89-99. <https://doi.org/10.21744/ijbem.v9n2.2485>

Environmental, Social, and Governance Disclosure and Financial Performance: Does Board of Commissioners' Size Matter?

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Abstract---This study aims to examine the effect of Environmental, Social, and Governance (ESG) disclosure on the financial performance of non-financial companies in Indonesia, with the board of commissioners size serving as a moderating variable. The study is grounded in agency theory, which conceptualizes the board of commissioners as a monitoring mechanism to mitigate conflicts of interest between management and shareholders. The sample was selected using purposive sampling and consisted of 51 non-financial companies listed on the Indonesia Stock Exchange during the 2020–2024 period, resulting in 255 firm-year observations after outlier elimination. The study employed panel data regression using the Random Effect Model (REM). The findings reveal that Environmental, Social, and Governance disclosure does not significantly affect return on assets (ROA), suggesting that ESG implementation among Indonesian non-financial firms remains predominantly compliance-oriented and has yet to generate a direct impact on short-term profitability. Furthermore, the board of commissioners' size is not found to moderate the relationship between Environmental and Social disclosure and ROA. However, board size significantly moderates the relationship between Governance disclosure and ROA through a non-linear U-shaped relationship, with an estimated turning point occurring at approximately five to six board members. These findings indicate that agency theory should be contextualized within local institutional settings, where larger boards may enhance governance effectiveness once an optimal threshold is surpassed. Practically, firms are encouraged to strengthen ESG implementation beyond mere compliance toward strategic integration, while regulators should emphasize the quality of ESG implementation rather than focusing solely on disclosure obligations.

Keywords---agency theory, board of commissioners size, ESG disclosure, financial performance, Indonesia, return on assets.

Introduction

Financial performance is a critical indicator reflecting managerial effectiveness in utilizing corporate resources to achieve sustainable profitability and firm value (Nurjanah et al., 2021; Asri et al., 2023). In increasingly competitive and uncertain economic conditions, firms are expected to optimize asset utilization to maintain stable performance (Brigham & Ehrhardt, 2019). Among various financial indicators, Return on Assets (ROA) is widely recognized as an effective measure of financial performance because it captures a firm's ability to generate profits from total assets and reflects operational efficiency and managerial decision-making quality (Nurjanah et al., 2021; Zikrul Fahmi et al., 2025). In the context of corporate sustainability, ROA also serves as an important measure for evaluating the economic implications of strategic decisions, including environmental and governance-related policies (Asri et al., 2023).

Despite its importance, financial performance among Indonesian non-financial companies remains unstable. During the 2020–2024 period, the average ROA of non-financial firms exhibited a fluctuating trend, increasing from 4.37% in 2020 to 8.18% in 2022 before declining to 5.87% in 2024. Such fluctuations indicate inconsistencies in

firms' operational efficiency and asset utilization, particularly among non-financial firms, which are generally capital-intensive and highly dependent on fixed assets (Brigham & Ehrhardt, 2019; Nam & Tuyen, 2024). Moreover, these sectors—including manufacturing, mining, energy, construction, healthcare, and consumer goods—play a dominant role in Indonesia's economy and possess substantial exposure to environmental, social, and governance-related risks (Duque Grisales & Aguilera-Caracuel, 2021; Freeman, 1984). According to the Indonesian Central Statistics Agency, five major sectors contributed approximately 63.9% of Indonesia's Gross Domestic Product in 2024, highlighting the strategic importance of non-financial sectors and their sustainability implications (Sugianto et al., 2022; Rohendi et al., 2024).

The growing emphasis on sustainability has intensified attention toward Environmental, Social, and Governance (ESG) practices as an important determinant of corporate quality and long-term resilience. ESG has increasingly become a key consideration for investors because it provides information regarding firms' risk exposure, sustainability commitment, and long-term prospects (Xu & Zhu, 2024). Theoretically, ESG implementation may improve operational efficiency, corporate reputation, and stakeholder relationships, which in turn can positively influence financial performance (Wu & Chen, 2024; Xu & Zhu, 2024). In Indonesia, ESG implementation has been strengthened through sustainable finance regulations, particularly Financial Services Authority Regulation No. 51/POJK.03/2017 and Circular Letter No. 16/SEOJK.04/2021 concerning sustainability reporting requirements for public companies (OJK, 2017; OJK, 2021). By 2025, approximately 97% of listed firms had reportedly complied with sustainability reporting obligations (Antara News, 2025).

Although ESG implementation in Indonesian non-financial firms has shown an increasing trend during 2020–2024, improvements across ESG pillars have not been accompanied by a consistent increase in profitability. Environmental and social scores have steadily improved, whereas governance scores have fluctuated despite remaining relatively higher than other pillars. Meanwhile, ROA trends did not move consistently alongside ESG improvements, suggesting that increased ESG implementation does not necessarily generate immediate financial returns. This may be explained by the relatively high implementation costs associated with environmental and social initiatives, which often require long-term investment before generating measurable economic benefits (Duque Grisales & Aguilera-Caracuel, 2021; Xu & Zhu, 2024).

From the perspective of agency theory, ESG disclosure can function as a governance mechanism that reduces agency conflicts through greater transparency, accountability, and reduced information asymmetry between managers and shareholders (Sugianto et al., 2022). However, the relationship between ESG and financial performance remains inconclusive. Previous studies have reported inconsistent findings, with some studies documenting positive effects of ESG on financial performance through enhanced legitimacy and operational efficiency, while others report insignificant effects, particularly in emerging economies characterized by high implementation costs and weaker ESG integration into business strategy (Aydoğmuş et al., 2022; Almaqtari et al., 2023; Baran et al., 2022; Meeprom et al., 2024). Furthermore, empirical evidence suggests that the effects of ESG may vary across environmental, social, and governance pillars due to differences in implementation characteristics and economic implications (Meeprom et al., 2024; Rizki et al., 2024).

Corporate governance mechanisms may also determine whether ESG initiatives translate into financial outcomes. The board of commissioners plays a strategic monitoring role in overseeing managerial decisions and sustainability policies. Board size, in particular, may influence the effectiveness of ESG implementation through increased expertise and monitoring capacity (Albitar et al., 2020; Basile et al., 2025). However, excessively large boards may create coordination problems and reduce monitoring effectiveness, implying a potential non-linear relationship between board size and firm performance (Sharma et al., 2023; Kamarudin et al., 2025). Despite growing attention to ESG governance globally, empirical studies explicitly examining the non-linear moderating role of board size in the relationship between ESG and financial performance remain limited, particularly in the context of Indonesian non-financial firms (Prayitno et al., 2024).

Accordingly, this study aims to examine the effect of Environmental, Social, and Governance (ESG) disclosure on financial performance, proxied by Return on Assets (ROA), among Indonesian non-financial firms during the 2020–2024 period. Furthermore, this study investigates the moderating role of board of commissioners size using a non-linear approach to identify the optimal governance threshold in strengthening the relationship between ESG disclosure and financial performance. This study contributes to the literature by providing empirical evidence from an emerging market context and by extending agency theory through the examination of a non-linear board governance mechanism in ESG implementation.

Literature Review and Hypothesis Development

From the perspective of agency theory, environmental disclosure serves as a monitoring mechanism that reduces agency conflicts by enhancing transparency and reducing information asymmetry between managers and shareholders (Jensen & Meckling, 1976; Sugianto et al., 2022). In non-financial firms, environmental disclosure is particularly relevant because operational activities are directly associated with resource utilization, emissions, and environmental compliance, which may reduce regulatory risks and operational inefficiencies (Siti et al., 2024). Empirical evidence suggests that environmental performance positively contributes to financial performance through improved operational efficiency, enhanced reputation, and stronger stakeholder trust (Albitar et al., 2020; Duque Grisales & Aguilera-Caracuel, 2021; Aydoğmuş et al., 2022; Rahim et al., 2024). Accordingly, firms with higher Environmental (E) scores are expected to utilize assets more efficiently, resulting in stronger financial performance. Therefore, the following hypothesis is proposed: H1: Environmental (E) disclosure positively affects the financial performance (ROA) of non-financial firms in Indonesia.

Agency theory suggests that social disclosure contributes to reducing agency conflicts by improving transparency and strengthening managerial accountability toward stakeholders (Jensen & Meckling, 1976; Sugianto et al., 2022). Social performance reflects corporate commitment to employees, communities, and broader social stakeholders, which may enhance organizational legitimacy, employee productivity, and operational stability (Husted & Sousa-Filho, 2019). Prior studies indicate that firms with stronger social performance tend to experience better financial outcomes through improved workforce productivity, reduced non-financial risks, and stronger stakeholder relationships (Ningsih et al., 2022; Duque Grisales & Aguilera-Caracuel, 2021; Rahim et al., 2024; Natasya & Muharam, 2024). Thus, better Social (S) disclosure is expected to improve operational efficiency and asset utilization, which ultimately enhances financial performance. Therefore, the following hypothesis is proposed: H2: Social (S) disclosure positively affects the financial performance (ROA) of non-financial firms in Indonesia.

Agency theory posits that effective corporate governance reduces agency costs through enhanced monitoring, transparency, and accountability mechanisms between management and shareholders (Jensen & Meckling, 1976). Governance disclosure reflects the quality of internal control systems and managerial oversight, which may improve decision-making efficiency and investor confidence (Labaco & Pabulo, 2024). Empirical studies consistently demonstrate a positive association between governance quality and financial performance, particularly through improved operational efficiency and stronger managerial discipline (Rizki et al., 2024; Suhartini et al., 2024). Nevertheless, excessive governance control may also reduce managerial flexibility and create inefficiencies (Sharma et al., 2023). Accordingly, firms with stronger Governance (G) disclosure are expected to achieve better financial performance through more efficient asset utilization. Therefore, the following hypothesis is proposed: H3: Governance (G) disclosure positively affects the financial performance (ROA) of non-financial firms in Indonesia.

From an agency theory perspective, the size of the board of commissioners plays an important monitoring role in ensuring the effectiveness of environmental policy implementation (Jensen & Meckling, 1976). Larger boards may provide greater expertise, diversity, and monitoring capacity, potentially strengthening the effectiveness of environmental initiatives (Velte, 2019; Almaqtari et al., 2023). However, prior studies indicate that the relationship between board size and firm performance tends to be non-linear, following an inverted U-shaped pattern in which monitoring effectiveness improves only up to an optimal threshold before declining due to coordination inefficiencies (Sharma et al., 2023; Kamarudin et al., 2025). Empirical evidence also suggests that stronger board oversight may reinforce the positive contribution of environmental performance to profitability (Meeprom et al., 2024; Ghosh et al., 2023). Therefore, the following hypothesis is proposed: H4: Board of commissioners size strengthens the effect of Environmental (E) disclosure on financial performance (ROA), with a non-linear (inverted U-shaped) relationship.

Agency theory argues that larger boards may improve monitoring effectiveness by providing greater diversity of expertise and perspectives in overseeing social policies and stakeholder relationships (Jensen & Meckling, 1976; Basile et al., 2025). Stronger board oversight may reduce opportunistic managerial behavior and ensure that social initiatives are aligned with long-term shareholder interests (Duque Grisales & Aguilera-Caracuel, 2021). Empirical studies suggest that larger boards may strengthen firms' social legitimacy and financial performance, although excessively large boards can create coordination inefficiencies that reduce monitoring effectiveness (Almaqtari et al., 2023). Previous findings also support a non-linear inverted U-shaped relationship between board size and firm performance (Sharma et al., 2023; Kamarudin et al., 2025). Therefore, the following hypothesis is proposed: H5: Board of commissioners size strengthens the effect of Social (S) disclosure on financial performance (ROA), with a non-linear (inverted U-shaped) relationship.

Agency theory emphasizes the importance of board oversight in strengthening corporate governance effectiveness and minimizing agency conflicts (Jensen & Meckling, 1976; Basile et al., 2025). Board size may

determine the effectiveness of governance mechanisms by balancing monitoring capacity and coordination efficiency (Mansour et al., 2022). Empirical studies indicate that moderately sized boards are more effective in strengthening the relationship between governance quality and financial performance, whereas excessively large boards may weaken governance efficiency due to increased coordination costs (Meeprom et al., 2024; Sharma et al., 2023; Kamarudin et al., 2025). Consequently, an optimal board size is expected to strengthen the effect of Governance (G) disclosure on financial performance by improving monitoring effectiveness and asset efficiency. Therefore, the following hypothesis is proposed: H6: Board of commissioners size strengthens the effect of Governance (G) disclosure on financial performance (ROA), with a non-linear (inverted U-shaped) relationship.

Methods

This study employed a quantitative research approach using secondary panel data to examine the effect of Environmental, Social, and Governance (ESG) disclosure on financial performance, with board of commissioners size serving as a moderating variable. The population consisted of non-financial companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. Samples were selected using purposive sampling based on the following criteria: (1) non-financial companies consistently listed on the IDX during the observation period; (2) companies that published annual and sustainability reports and disclosed complete ESG data; and (3) companies with complete financial data required for variable measurement. Based on these criteria, 51 companies were selected, resulting in 255 firm-year observations after outlier elimination. Financial performance was measured using Return on Assets (ROA), calculated as net income divided by total assets. ESG disclosure was measured using Bloomberg ESG Scores and analyzed separately across three dimensions, namely Environmental (E), Social (S), and Governance (G), to capture the distinct influence of each pillar on firm performance. The moderating variable, board of commissioners size, was measured by the total number of commissioners serving in a company. To examine the proposed relationships, this study employed panel data regression analysis using the Random Effect Model (REM), selected based on model specification tests. Furthermore, non-linear moderation effects were examined by incorporating quadratic interaction terms between ESG dimensions and board size to test the hypothesized inverted U-shaped relationship. Data analysis was conducted using Stata software to ensure robustness in estimating the relationships among variables.

Result and Discussion

Model Evaluation

Table 1
Coefficient of Determination (R^2)

Description	Value
Overall R-squared	0.2674
Rho	0.4461

Primary Data, 2026

Table 1 presents the coefficient of determination results of the regression model. The overall R-squared value of 0.2674 indicates that approximately 26.74% of the variation in financial performance, proxied by Return on Assets (ROA), can be explained by the independent, moderating, and control variables included in the model. Meanwhile, the remaining 73.26% is explained by other factors not incorporated into this study, such as macroeconomic conditions, managerial strategy, operational efficiency, market dynamics, and firm-specific industry characteristics. Although the explanatory power of the model is relatively moderate, this finding is reasonable given the complexity of financial performance determinants, particularly in studies examining Environmental, Social, and Governance (ESG) disclosure, where the impact on firm performance is often indirect and mediated through mechanisms such as corporate reputation, legitimacy, stakeholder trust, and long-term strategic value creation (Gillan et al., 2021; Meeprom et al., 2024).

Furthermore, the rho value of 0.4461 indicates that approximately 44.61% of the residual variation is attributable to unobserved heterogeneity across firms, suggesting that differences in firm-specific characteristics substantially influence financial performance. This finding supports the appropriateness of employing the Random Effect Model

(REM), as the model effectively captures cross-sectional heterogeneity among firms and allows for more efficient estimation in panel data settings where entity-specific effects are assumed to be randomly distributed.

Table 2
Simultaneous Significance Test (Wald Test)

Description	Value
Wald chi ² (13)	317.68
Prob > chi ²	0.0000

Primary Data, 2026

Table 2 reports the simultaneous significance test results of the regression model. The Wald chi-square value of 317.68 with a probability value of 0.0000 (< 0.05) indicates that the regression model is statistically significant as a whole. This result demonstrates that the independent variables, moderating variables, interaction terms, and control variables collectively explain variations in financial performance proxied by ROA. Although only several variables show significant individual effects, the overall significance of the model confirms that financial performance is shaped by the combined interaction of ESG disclosure, board of commissioners size, and firm-specific financial characteristics rather than by isolated determinants.

The statistical significance of the model also suggests that the model specification is sufficiently robust for hypothesis testing and further interpretation. These findings imply that ESG disclosure and corporate governance mechanisms may influence financial performance in a complex and interconnected manner, reinforcing the importance of examining both direct and moderating relationships in the context of Indonesian non-financial firms.

Regression Results and Hypothesis Testing

Table 3
Partial Regression Results (t-test)

Variable	Coefficient	Robust Std. Error	z-statistic	Prob.	Description
c ENV	-0.0003239	0.0002758	-1.17	0.240	Not Significant
c SOC	0.0003286	0.0004087	0.80	0.421	Not Significant
c GOV	0.0001054	0.0002865	0.37	0.713	Not Significant
c BOARDSIZE	-0.0038436	0.0020330	-1.89	0.059	Not Significant
c board_sq	0.0006935	0.0003817	1.82	0.069	Not Significant
interaction E	-0.0000708	0.0001127	-0.63	0.530	Not Significant
interaction E_sq	0.0000236	0.0000192	1.23	0.220	Not Significant
interaction S	0.0002066	0.0002157	0.96	0.338	Not Significant
interaction S_sq	-0.0000680	0.0000385	-1.77	0.077	Not Significant
interaction G	-0.0000057	0.0001269	-0.05	0.964	Not Significant
interaction G_sq	0.0000467	0.0000196	2.39	0.017	Significant
SIZE	-0.0001372	0.0014057	-0.10	0.922	Not Significant
DAR	-0.0900017	0.0267271	-3.37	0.001	Significant
Constant	0.0939079	0.0383370	2.45	0.014	

Primary Data, 2026

Table 3 presents the regression results using the Random Effect Model (REM) with robust standard errors. Overall, the findings indicate that Environmental (E), Social (S), and Governance (G) disclosure do not exert a statistically significant direct effect on financial performance proxied by Return on Assets (ROA). Furthermore, the moderating role of the board of commissioners' size is only supported in the relationship between Governance disclosure and ROA through a non-linear quadratic pattern. Meanwhile, leverage (DAR) is found to negatively affect financial performance, whereas firm size does not exhibit a significant relationship with ROA.

Environmental Disclosure and Financial Performance (H1)

The results show that Environmental (E) disclosure has a negative coefficient (-0.0003239) and is statistically insignificant ($p = 0.240 > 0.05$), indicating that environmental disclosure does not significantly influence ROA among Indonesian non-financial firms. Therefore, H1 is not supported. This finding suggests that environmental initiatives undertaken by firms have not yet translated into measurable short-term profitability improvements. In the Indonesian context, environmental practices among non-financial firms appear to remain predominantly compliance-oriented, where firms focus more on fulfilling regulatory obligations than integrating environmental initiatives into long-term strategic value creation.

This result may also be explained by the substantial upfront costs associated with environmental investments, including green technologies, energy efficiency, emissions reduction, and waste management systems, which may temporarily suppress profitability before yielding long-term benefits (Duque-Grisales & Aguilera-Caracuel, 2021). Consequently, the benefits of environmental disclosure may materialize indirectly through enhanced reputation, resource efficiency, and reduced operational risk rather than immediate improvements in accounting profitability indicators such as ROA (Mardiana & Hanani, 2025). In Indonesia, although sustainable finance regulations such as POJK No. 51/POJK.03/2017 require sustainability reporting, relatively weak enforcement mechanisms may encourage firms to treat environmental disclosure primarily as an administrative requirement rather than a strategic business commitment.

From the perspective of agency theory, environmental disclosure is expected to reduce agency conflicts by increasing transparency and mitigating information asymmetry between managers and shareholders (Jensen & Meckling, 1976). However, the findings indicate that such monitoring mechanisms have not yet effectively translated into improved financial performance. This result aligns with Broadstock et al. (2021) and Meeprom et al. (2024), who argue that the financial benefits of ESG, particularly environmental initiatives, often emerge with a time lag and may not be observable in short-term accounting performance.

Social Disclosure and Financial Performance (H2)

The regression results indicate that Social (S) disclosure has a positive coefficient (0.0003286) but does not significantly affect ROA ($p = 0.421 > 0.05$). Accordingly, H2 is not supported. This finding suggests that social initiatives undertaken by non-financial firms in Indonesia have not generated immediate financial benefits reflected in accounting-based profitability measures. Corporate social activities are frequently implemented as part of mandatory corporate social responsibility (CSR) obligations rather than strategic investments designed to create measurable business value.

The non-significant effect may also be attributed to the intangible and long-term nature of social benefits, such as improved stakeholder trust, enhanced employee loyalty, stronger public legitimacy, and better community relationships, which may not immediately affect profitability indicators (Meeprom et al., 2024). Moreover, social initiatives that are poorly integrated into business strategy may be perceived merely as additional operational costs rather than productivity-enhancing investments (Angela & Rusmanto, 2025). This finding is consistent with Aydoğmuş et al. (2022) and Mardiana & Hanani (2025), who argue that the financial impact of social ESG dimensions is often indirect and context-dependent.

From an agency theory perspective, social disclosure should strengthen managerial accountability and reduce opportunistic behavior through enhanced transparency (Jensen & Meckling, 1976). Nevertheless, the findings imply that such governance benefits have not yet materialized into financial gains, largely because social initiatives remain oriented toward regulatory legitimacy rather than substantive value creation.

Governance Disclosure and Financial Performance (H3)

Governance (G) disclosure demonstrates a positive but statistically insignificant relationship with financial performance ($\beta = 0.0001054$; $p = 0.713 > 0.05$), indicating that governance quality does not directly influence ROA among Indonesian non-financial firms. Thus, H3 is not supported. Although governance mechanisms are theoretically expected to improve decision-making efficiency, reduce agency costs, and strengthen investor confidence, the findings suggest that governance practices have yet to generate measurable profitability gains.

One plausible explanation relates to the institutional context of Indonesia, where governance implementation may still be characterized by formal compliance rather than substantive governance effectiveness. Although corporate governance reporting requirements are increasingly institutionalized, firms may adopt governance mechanisms

primarily to satisfy regulatory expectations without substantially improving internal monitoring effectiveness. Moreover, governance implementation frequently involves additional compliance costs, including auditing, internal control systems, transparency mechanisms, and reporting expenditures, which may temporarily constrain profitability (Gillan et al., 2021; Mansour et al., 2022).

This finding is consistent with Broadstock et al. (2021), Gillan et al. (2021), and Shobhwani & Lodha (2023), who suggest that governance effects on financial performance are highly contingent upon institutional quality and regulatory enforcement. Within agency theory, governance mechanisms function to mitigate conflicts of interest between managers and shareholders through stronger oversight and accountability (Jensen & Meckling, 1976). However, the Indonesian regulatory setting may not yet provide sufficient incentives for firms to implement governance substantively enough to improve financial performance.

Moderating Role of Board Size on the Environmental–ROA Relationship (H4)

The moderating effect of board of commissioners size on the relationship between Environmental disclosure and ROA is found to be statistically insignificant, as both interaction terms—linear and quadratic—fail to reach significance ($p > 0.05$). Therefore, H4 is not supported. This finding suggests that board size does not strengthen nor weaken the relationship between environmental disclosure and financial performance.

One possible explanation is that environmental performance depends more heavily on managerial execution quality and technical environmental expertise than on board size alone. Merely increasing the number of commissioners may not improve environmental oversight unless accompanied by relevant competencies in sustainability and environmental governance (Velte, 2023; Al-Shaer & Zaman, 2024). This finding supports previous studies arguing that board effectiveness is determined more by expertise and board composition than by board size itself (Sharma et al., 2023; Meeprom et al., 2024). From an agency theory perspective, board oversight may only function effectively when commissioners possess sufficient competence to monitor environmental implementation substantively rather than formally.

Moderating Role of Board Size on the Social–ROA Relationship (H5)

Similarly, the board of commissioners size does not significantly moderate the relationship between Social disclosure and ROA, as the interaction terms remain statistically insignificant. Consequently, H5 is not supported. This finding implies that the effectiveness of social programs in generating financial outcomes depends more on managerial commitment and implementation quality than on the number of commissioners overseeing such activities.

Social programs often require strategic integration into firm operations and stakeholder engagement practices to create measurable financial returns. Increasing board size alone does not necessarily improve the effectiveness of social monitoring unless commissioners possess relevant expertise in human capital management, stakeholder engagement, or social sustainability issues (Angela & Rusmanto, 2025). This finding is consistent with Gillan et al. (2021) and Kamarudin et al. (2025), who emphasize that board quality and involvement are more important than board size in determining governance effectiveness. Agency theory similarly suggests that monitoring effectiveness depends not only on structural oversight mechanisms but also on the competence and independence of board members.

Moderating Role of Board Size on the Governance–ROA Relationship (H6)

The findings reveal a significant moderating effect of board size on the relationship between Governance disclosure and financial performance through a non-linear U-shaped relationship, as indicated by the significant quadratic interaction term ($\beta = 0.0000467$; $p = 0.017 < 0.05$), while the linear interaction remains insignificant. Thus, H6 is partially supported, although the observed relationship differs from the originally hypothesized inverted U-shape.

The estimated turning point, calculated using the formula $-\beta_1/(2\beta_2)$, suggests that the minimum point occurs at approximately 5–6 board members, implying that governance effectiveness becomes more financially beneficial once board size exceeds this threshold. Before reaching this point, governance mechanisms may remain insufficiently effective in mitigating agency conflicts and enhancing firm performance. Beyond this threshold, however, larger boards appear to strengthen monitoring effectiveness and improve managerial oversight, thereby enhancing ROA.

This U-shaped relationship may be explained by the two-tier board system in Indonesia, where supervisory and executive functions are institutionally separated. Unlike one-tier board systems commonly observed in Western countries—where larger boards often create coordination inefficiencies between supervisory and managerial roles—

the Indonesian board of commissioners performs exclusively supervisory functions. Consequently, increasing board size may strengthen collective monitoring capacity rather than generate execution-related inefficiencies.

From the perspective of agency theory, this finding reflects a trade-off between monitoring benefits and coordination costs (Jensen & Meckling, 1976). Small boards may suffer from insufficient monitoring capacity, while larger boards beyond an optimal threshold may improve governance effectiveness through enhanced oversight. Furthermore, Resource Dependence Theory (Pfeffer & Salancik, 1978) provides additional explanatory power, suggesting that larger boards contribute broader expertise, external networks, and strategic resources that strengthen governance quality and decision-making effectiveness. These findings are consistent with Hidayat et al. (2016), Utama & Utama (2019), who demonstrate that board effectiveness and financial performance improve once firms achieve an optimal board composition capable of balancing monitoring effectiveness and strategic coordination.

Conclusion

This study examined the effect of Environmental, Social, and Governance (ESG) disclosure on the financial performance of Indonesian non-financial firms, with the board of commissioners size acting as a moderating variable during the 2020–2024 period. The findings reveal that Environmental, Social, and Governance disclosure does not significantly affect financial performance proxied by Return on Assets (ROA). These results indicate that ESG implementation among Indonesian non-financial firms remains largely **compliance-oriented**, where sustainability practices are implemented primarily to fulfill regulatory requirements rather than strategically integrated into value creation and operational efficiency. Consequently, ESG disclosure has not yet translated into measurable short-term profitability improvements.

Furthermore, the board of commissioners' size is not found to moderate the relationship between Environmental and Social disclosure and ROA, indicating that the effectiveness of environmental and social initiatives depends more on implementation quality, managerial commitment, and board competency rather than merely the number of commissioners. However, board size significantly moderates the relationship between Governance disclosure and financial performance through a non-linear U-shaped relationship, with an estimated turning point occurring at approximately five to six commissioners. This finding suggests that governance mechanisms become more effective in improving firm performance once board size surpasses an optimal threshold, particularly within Indonesia's two-tier board system, where supervisory and managerial functions are institutionally separated.

Theoretically, this study extends agency theory by demonstrating that the effectiveness of governance mechanisms should be contextualized within local institutional settings, particularly in emerging economies. The findings also support Resource Dependence Theory, emphasizing that larger boards may enhance monitoring effectiveness and strategic resource access when appropriately structured. Practically, firms are encouraged to strengthen ESG implementation beyond formal compliance toward strategic integration capable of generating long-term economic value. Regulators should also focus not only on disclosure obligations but also on improving the quality and effectiveness of ESG implementation to ensure its contribution to corporate sustainability and financial performance.

Managerial Implication

The findings of this study imply that non-financial firms in Indonesia should shift ESG implementation from a compliance-oriented approach toward a strategic business integration capable of generating long-term value and improving operational efficiency. Since Environmental, Social, and Governance (ESG) disclosure has not yet significantly improved short-term financial performance, firms should focus on enhancing the quality and effectiveness of ESG practices rather than merely fulfilling reporting obligations. Additionally, the insignificant moderating role of board size in environmental and social dimensions highlights the importance of board competency over board quantity, encouraging firms to appoint commissioners with relevant expertise in sustainability and governance. Meanwhile, the significant U-shaped moderating effect in the governance dimension suggests that maintaining an optimal board size of approximately five to six commissioners may strengthen monitoring effectiveness and corporate governance quality, particularly within Indonesia's two-tier board system. Regulators are also encouraged to emphasize substantive ESG implementation through stronger monitoring mechanisms and performance-oriented sustainability policies.

References

- Albitar, K., Hussainey, K., Kolade, N., & Gerged, A. M. (2020). ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms. *International Journal of Accounting and Information Management*, 28(3), 429–444.
- Almaqtari, F. A., Elsheikh, T., Abdelkhair, F., & Mazrou, Y. S. (2023). The impact of corporate environmental disclosure practices and board attributes on sustainability: empirical evidence from Asia and Europe. *Heliyon*, 9(8).
- Al-Shaer, H., & Zaman, M. (2024). Board gender diversity and sustainability reporting quality: The moderating role of board size. *Business Strategy and the Environment*, 33(2), 812–830.
- Angela, T., & Rusmanto, T. (2025). The Effect of ESG Disclosure and Media Exposure on Profitability and Firm Value: Evidence from Indonesia. *International Journal of Sustainable Development and Planning*, 20(10), 4429–4442.
- Antara News. (2025). BEI ungkap 873 perusahaan tercatat penuh laporan keberlanjutan. *Antaranews.Com*.
- Asri, R., Idris, H., & Afiyah, N. (2023). Pengaruh Solvabilitas Terhadap Profitabilitas Pada Perusahaan Sub Sektor Pertambangan Logam Dan Mineral Lainnya Yang Terdaftar Di BEI. *Bongaya Journal of Research in Accounting (BJRA)*, 6(1), 73-80.
- Aydođmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, 22, S119-S127. <https://doi.org/10.1016/j.bir.2022.11.006>
- Baran, M., Kuźniarska, A., Makiela, Z. J., Sławik, A., & Stuss, M. M. (2022). Does ESG reporting relate to corporate financial performance in the context of the energy sector transformation? Evidence from Poland. *Energies*, 15(2), 477.
- Basile, V., Serino, L., Ambra, A. D., & Campanella, F. (2025). Board characteristics and effects on ESG performance: empirical evidence from the European banking system. *Quality and Quantity*.
- Brigham, E., & Ehrhardt, M. (2019). Financial Management: Theory and Practice. In *Cengage Learning*.
- Broadstock, D. C., Chan, K., Cheng, L. T., & Wang, X. (2021). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance research letters*, 38, 101716. <https://doi.org/10.1016/j.frl.2020.101716>
- Duque Grisales, E., & Aguilera Caracuel, J. (2021). Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack. *Journal of Business Ethics*, 168(2), 315–334.
- Freeman, A. M. (1984). The sign and size of option value. *Land Economics*, 60(1), 1-13.
- Friends of the Earth, Wahana Lingkungan Hidup Indonesia, & Milieudefensie. (2024). *Cultivating conflict: How Astra Agro Lestari, big brands, and big finance exploit governance gaps in Indonesia*. www.walhi.or.id
- Ghosh, A., Kumar, S., & Das, J. (2023). Impact of leachate and landfill gas on the ecosystem and health: Research trends and the way forward towards sustainability. *Journal of Environmental Management*, 336, 117708. <https://doi.org/10.1016/j.jenvman.2023.117708>
- Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of corporate finance*, 66, 101889. <https://doi.org/10.1016/j.jcorpfin.2021.101889>
- Hidayat, A., Saifullah, M., & Ishak, A. (2016). Determinants of satisfaction, trust, and loyalty of Indonesian e-commerce customer. *International Journal of Economics and Management*, 10(1), 151-166.
- Husted, B. W., & de Sousa-Filho, J. M. (2019). Board structure and environmental, social, and governance disclosure in Latin America. *Journal of Business Research*, 102, 220-227. <https://doi.org/10.1016/j.jbusres.2018.01.017>
- Jensen, M., & Meckling, W. H. (1976). Theory of the.
- Kamarudin, K. A., Mohamad Ariff, A., Azmi, N. A., & Mohd Suffian, M. T. (2025). Nonlinear effects of board size and board independence on corporate sustainability performance: international evidence. *Corporate Governance (Bingley)*, 25(4), 860–883.
- Labaco, S. S., & Pabulo, A. M. A. (2024). Pengaruh Pengungkapan Environmental, Social Dan Governance Terhadap Kinerja Keuangan Perusahaan (Studi Empiris Pada Perusahaan Sektor Non-Keuangan Yang Terdaftar Di Bei Periode 2021-2022). *Jurnal Ekonomi Bisnis, Manajemen dan Akuntansi (Jebma)*, 4(3), 1487-1499.
- Mansour, M., Al Amosh, H., Alodat, A. Y., Khatib, S. F. A., & Saleh, M. W. A. (2022). The Relationship between Corporate Governance Quality and Firm Performance: The Moderating Role of Capital Structure. *Sustainability (Switzerland)*, 14(17).
- Mardiana, M., & Hanani, T. (2025). The effect of environmental, social, and governance (ESG) performance on corporate financial performance in Indonesia: based on the perspective of innovation. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)*, 8(1), 2565-2582.

- Meeprom, S., Boonyanet, W., & Tongkong, S. (2024). Relationship of ESG scores on firm performance: Moderating roles of board size and CEO duality. *Journal of Infrastructure, Policy and Development*, 8(7).
- Ming, K. L. Y., Vaicondam, Y., Mustafa, A. M. A. A., Roslan, S. N. M., Yi, S., Chopra, K., & Khanna, P. (2024). ESG Integration and Financial Performance: Evidence from Malaysia's Leading Companies. *International Journal of Energy Economics and Policy*, 14(5), 487–494. <https://doi.org/10.32479/ijeep.16706>
- Nam, N. H. P., & Tuyen, T. T. M. (2024). Impact of liquidity on capital structure and financial performance of non-financial-listed companies in the vietnam stock market. *Future Business Journal*, 10(1).
- Natasya, V., & Muharam, H. (2024). Pengaruh corporate social responsibility terhadap kinerja keuangan perusahaan (Studi Perusahaan yang Terdaftar di Bursa Efek Indonesia Tahun 2020-2022). *Diponegoro Journal of Management*, 13(3).
- Ningsih, N., Nagu, N., & Madein, A. (2022). The Effect of Corporate Social Responsibility on Return on Assets, Return on Equity, and Net Profit Margin: Study of Food and Beverage Sub-Sector Companies Listed in the Indonesia Stock Exchange, 2016-2021. *European Journal of Business and Management Research*, 7(6), 297-303.
- Nurjanah, S., Natanael Wijaya, S., Komara, A., & Yudi Mahadianto, M. (2021). *International Journal of Business, Economics and Social Development Financial Performance Evaluation: The Role of ROA and ROE in Increase Company Value*. 6(2), 264–270.
- Organisation for Economic Co-operation and Development. (2023). *Sustainable finance in Asia: ESG and climate-aligned investing and policy considerations*. OECD Publishing.
- Pfeffer, J., Salancik, G. R. (1978). The external control of organizations; A Resource dependence perspective. New York: Harper & Row, Publishers, Inc.
- Prayitno, E., Adam, M., Widiyanti, M., & Fuadah, L. (2024). The impact of ESG disclosure on financial performance with leverage as an intervening variable in mining companies listed on the Indonesia Stock Exchange. *International Journal of Business, Economics and Management*, 7(2), 81-87. <https://doi.org/10.21744/ijbem.v7n2.2285>
- Rahim, M. J., Islam, M. J., Islam, M. N., & Rahim, M. I. I. (2024). Mediating role in industry 4.0 (4IR) adoptions and sustainable corporate financial growth in developed economies. *Journal of Governance and Accountability Studies*, 4(2), 121-145.
- Rizki, M. H., Nugraha, N., & Putra, A. (2024). The Impact of ESG Pillars on Banking Financial Performance in ASEAN-5 Countries. *Journal of Enterprise and Development (JED)*, 6(3).
- Rohendi, H., Ghozali, I., & Ratmono, D. (2024). Environmental, social, and governance (ESG) disclosure and firm value: the role of competitive advantage as a mediator. *Cogent Business & Management*, 11(1), 2297446.
- Sharma, R., Mehta, K., & Goel, A. (2023). Non-linear relationship between board size and performance of Indian companies. *Journal of Management and Governance*, 27(4), 1277–1301.
- Shobhwani, K., & Lodha, S. (2023). Impact of ESG risk scores on firm performance: An empirical analysis of NSE-100 companies. *Asia-Pacific Journal of Management Research and Innovation*, 19(1), 7-18.
- Siti, P., Labaco, S., Mutiara, A., & Pabulo, A. (2024). Pengaruh Pengungkapan Environmental, Social Dan Governance Terhadap Kinerja Keuangan Perusahaan (Studi Empiris Pada Perusahaan Sektor Non-Keuangan Yang Terdaftar Di Bei Periode 2021-2022).
- Sugianto, N. A. P., Riandy, C. N., Zainavy, S. F., & Hartikasari, A. I. (2022). The Contribution of Environmental, Social, and Governance (ESG) Disclosure to Reduce Investor Asymmetry Information. *Proceedings Series on Social Sciences & Humanities*, 7, 56–61.
- Suhartini, D., Tjahjadi, B., & Fayanni, Y. (2024). Impact of sustainability reporting and governance on firm value: insights from the Indonesian manufacturing sector. *Cogent Business and Management*, 11(1).
- United Nations Framework Convention on Climate Change. (2015). *Paris Agreement*. Bonn: UNFCCC. <https://unfccc.int/process-and-meetings/the-paris-agreement>
- Utama, C. A., & Utama, S. (2019). Board of commissioners in corporate governance, firm performance, and ownership structure. *International Research Journal of Business Studies*, 12(2), 111-136.
- Velte, P. (2019). Does board composition influence CSR reporting? A meta-analysis. *Corporate Ownership and Control*, 16(2), 48–59.
- Wu, X., Liang, W., Ying, Q., Dai, H., Chen, H., & Jiang, J. (2025). The Impact of Environmental Information Disclosure on Corporate Sustainability: The Mediating Role of Profitability. *Sustainability (Switzerland)*, 17(10).
- Xu, Y., & Zhu, N. (2024). The effect of environmental, social, and governance (ESG) performance on corporate financial performance in China: Based on the perspective of innovation and financial constraints. *Sustainability*, 16(8), 3329.

Zikrul Fahmi, M., Handajani, L., Nyoman Nugraha Ardana Putra, I., & Author, C. (2025). Carbon Emission Disclosure and Firm Value: The Moderating Role of Corporate Governance. *Iranian Journal of Accounting, Auditing and Finance*, 9(3), 1–15.