Shirkah: Journal of Economics and Business
Vol. 10, No. 3 (2025), page 331-348
p-ISSN: 2503-4235 e-ISSN: 2503-4243
Journal homepage: http://shirkah.or.id/new-ojs/index.php/home

Research Paper

ESG Disclosure and Financial Performance: The Moderating Role of Firm Size in Indonesian Banking Sector

Fathihani [a,1*], Natalia Santoso [a,2], Rini Sulistiyowati[a,3], Meilin Veronica [b,4]

[a] Faculty of Business and Social Sciences, Universitas Dian Nusantara, Indonesia
[b] Faculty of Economics, Universitas Indo Global Mandiri, Indonesia
[1] fathihani@undira.ac.id*, [2] natalia.santoso@dosen.undira.ac.id, [3] rini.sulistiyowati@dosen.undira.ac.id, [4] meilin.veronica@uigm.ac.id

*Corresponding author

ARTICLE INFO

Keywords
Environmental, Social, and Governance (ESG); Financial Performance; Firm Size; Indonesian Banking Industry

Article history
Received: 19 July 2025
Revised: 29 August 2025
Accepted: 14 September 2025
Available online: 19 September 2025

To cite in APA style
Fathihani, Santoso, N., Sulistiyowati, R., & Veronica, M. (2025). ESG disclosure and financial performance: The moderating role of firm size in Indonesian banking sector. *Shirkah: Journal of Economics and Business, 10*(3), 331-348.

ABSTRACT

The evolving global business landscape necessitates that corporations move beyond a singular focus on profitability to integrate sustainability performance through Environmental, Social, and Governance (ESG) principles. This study aims to analyze the effect of ESG disclosure on corporate financial performance, measured by Return on Assets (ROA). It further investigates the moderating role of firm size in the relationship between ESG disclosure and ROA. The research sample comprises banking companies listed on the Indonesia Stock Exchange during the 2020-2024 period. Employing a purposive sampling technique, 10 banks were selected as the final sample based on the consistent publication of their annual and sustainability reports. The data were analyzed using panel data regression and Moderated Regression Analysis (MRA), facilitated by Eviews 12 software. The findings indicate that both environmental and social disclosures exert a significant positive influence on ROA. In contrast, governance disclosure and firm size, as standalone variables, do not demonstrate a significant impact on ROA. Crucially, the analysis confirms that firm size positively moderates the relationship between both environmental and social disclosures and ROA. However, it does not moderate the effect of governance disclosure on financial performance. These results offer significant implications for corporate strategy, underscoring the importance of robust ESG management and the strategic leveraging of firm size to enhance financial outcomes.

Copyright © 2025 Authors
This is an open access article under CC-BY-NC 4.0 license.

Introduction

In the contemporary global economy, characterized by rapid technological advancement and dynamic socio-economic shifts, sustainability has become a central paradigm for modern corporations. The principles of Industry 5.0, for example, advocate for integrating human-centric values and sustainability into all facets of economic activity (Gharchia & Mindosa, 2023; Subramanian & Suresh, 2025). This has propelled the adoption of Environmental, Social, and Governance (ESG) criteria as a comprehensive framework for evaluating corporate performance beyond mere profitability (Dai et al., 2025). ESG disclosure is now recognized not only as an indicator of corporate social responsibility but also as an essential tool for risk management and a key determinant of a company's long-term sustainability and value creation (Ali et al., 2025; Azzahra et al., 2024). This is particularly relevant for the banking sector, which wields significant indirect influence over sustainability outcomes through its financing of high-impact industries (Liu et al., 2022; Sekar Sari et al., 2023).

Despite the banking sector's pivotal role in steering capital towards sustainable development, a significant gap exists between this strategic potential and current practices in Indonesia. Recent data reveals that the average ESG disclosure rate for banking companies listed on the Indonesia Stock Exchange is a mere 31.03%. This figure lags considerably behind other sectors, such as mining (50.22%) and plantations (56.86%), which are often subject to more direct environmental scrutiny (Liao, 2025; Mulyana et al., 2025; Tutar et al., 2025). This low level of transparency presents the core research problem: a critical disconnect between the banking industry's capacity to influence national sustainability goals and its actual commitment to ESG reporting, creating uncertainty for investors, regulators, and other stakeholders about the sector's long-term resilience and risk management practices.

Theoretically, a positive relationship between ESG disclosure and financial performance is supported by foundational concepts like stakeholder theory (Mahajan et al., 2023) and legitimacy theory (Deegan, 2014). However, a synthesis of empirical literature reveals a complex and often contradictory landscape. On one hand, previous studies (Cipto & Hersugondo, 2025; Wulandari & Istiqomah, 2024) find that robust ESG disclosure positively impacts Return on Assets (ROA), arguing that transparency enhances corporate reputation and attracts investor confidence. On the other hand, the financial benefits are not universally confirmed. Research from Pertiwi and Hersugondo (2023) and Annisawanti et al. (2024) shows that certain ESG dimensions, particularly governance, have an insignificant relationship with ROA. This suggests that while environmental and social initiatives may yield reputational benefits, the substantial costs associated with governance reforms may not translate into immediate, measurable financial gains, thus creating an empirical puzzle.

To reconcile these divergent findings, this study posits that firm-specific characteristics, such as firm size, may play a crucial moderating role. Larger firms typically command greater financial and human resources to implement sophisticated ESG strategies and are subject to heightened scrutiny from stakeholders, which may amplify the financial returns of their ESG efforts (Mahmood et al., 2025; Naeem et al., 2022). The primary novelty of this research lies in addressing a significant gap in the literature. While many studies include firm size as a control variable, very few have explicitly investigated its function as a moderator on the relationship between each distinct ESG pillar (environmental, social, and

governance) and financial performance. This gap is particularly pronounced in the context of the Indonesian banking sector (Shawat et al., 2024), an industry with unique regulatory pressures and indirect environmental exposures (Al Amosh & Khatib, 2022).

Therefore, the explicit purpose of this study is to address these gaps by systematically analyzing the partial effect of environmental, social, and governance disclosures on ROA, while simultaneously examining the moderating influence of firm size on these relationships. Employing a quantitative analysis of banking companies listed on the Indonesia Stock Exchange from 2020 to 2024, a period following the enactment of mandatory sustainability reporting, this research aims to provide robust empirical evidence. The findings are expected to make a significant contribution by enhancing the theoretical understanding of sustainable finance and offering practical, data-driven insights for corporate managers in optimizing ESG strategies and for policymakers in crafting regulations that effectively promote sustainable economic growth in Indonesia.

Hypothesis Development

Environmental disclosure is a critical component of corporate transparency, reflecting a company's management of its ecological footprint, including emissions, energy consumption, waste reduction, and adherence to environmental regulations. A proactive stance on environmental responsibility can yield significant strategic advantages (Gündüz & Gündüz, 2025). By transparently communicating these efforts, companies can enhance their corporate reputation, mitigate regulatory and legal risks, improve operational efficiencies through resource management, and attract a growing class of sustainability-conscious investors (Gidage et al., 2025). This alignment with stakeholder values is theorized to translate into superior financial outcomes. This theoretical linkage is substantiated by empirical findings, such as the study by Pratiwi and Sisdyani (2023), which demonstrates that comprehensive environmental disclosure has a positive and significant influence on financial performance. Therefore, it is hypothesized that greater transparency in environmental practices will be positively associated with profitability.
H_1: Environmental disclosure has a positive effect on Return on Assets (ROA).

Social disclosure encompasses a firm's commitment and practices related to its key stakeholders, including employees, local communities, and customers. It provides insights into critical areas such as labor standards, occupational health and safety, diversity and inclusion initiatives, and community development programs (Krismonia & Ryanto, 2025). By investing in and reporting on these social initiatives, companies can build significant intangible assets (Sumani & Limawan, 2024). Strong social performance can foster greater employee morale, productivity, and loyalty, reducing turnover costs (Lin et al., 2024). It also strengthens brand reputation and customer loyalty among ethically-minded consumers, creating a more resilient revenue base and a stronger "social license to operate." The positive impact of these practices on corporate value is supported by previous research, where (Mubariz et al., 2025) assert that meaningful social disclosure contributes positively to company performance. Accordingly, this study posits a direct positive relationship between social disclosure and financial returns.
H_2: Social disclosure has a positive effect on Return on Assets (ROA).

Governance disclosure reflects the integrity and effectiveness of a company's internal control systems, board structure, shareholder rights, and overall corporate oversight. High-quality governance, characterized by transparency and accountability, is fundamental to building and maintaining investor confidence (Hussien et al., 2025). It serves to reduce information asymmetry between management and stakeholders, thereby lowering the cost of capital and mitigating agency risks (Agyemang et al., 2025). Furthermore, robust governance frameworks facilitate superior strategic decision-making, enhance operational efficiency, and ensure long-term value creation. Several empirical studies corroborate this positive relationship. For instance, research conducted by Rahmaniati and Ekawati (2024) reveals that a higher quality of governance disclosure is directly associated with a higher Return on Assets (ROA). This aligns with the view that good governance is not merely a compliance exercise but a strategic instrument for sustainable financial success.
H3: Governance disclosure has a positive effect on Return on Assets (ROA).

Firm size serves as a crucial indicator of a company's market presence, operational capacity, and resource base. Larger corporations typically benefit from significant competitive advantages, including economies of scale, which allow for lower per-unit costs and higher profit margins (Chakkravarthy et al., 2024). They generally possess greater access to capital markets at more favorable terms, enabling larger investments in technology, innovation, and strategic growth opportunities (Randrianasolo & Semenov, 2025). Moreover, their diversified operations and substantial asset bases often provide a greater capacity to absorb market shocks and economic downturns, leading to more stable and predictable earnings (Silitonga & Purwaningsih, 2025). This direct, positive relationship between a company's scale and its financial health is a well-established concept in corporate finance, with studies such as (Putri & Puspawati, 2023) providing empirical evidence of a significant positive influence between firm size and financial performance.
H4: Firm size has a positive effect on Return on Assets (ROA).

Firm size is hypothesized to act as a crucial moderating variable that amplifies the positive effect of environmental disclosure on financial performance. Large corporations possess greater financial and technological resources, enabling them to invest in substantive environmental initiatives rather than engaging in purely symbolic reporting (Wulandari & Istiqomah, 2024). Furthermore, larger firms operate under heightened scrutiny from the public, media, and regulators, creating a powerful incentive to ensure their environmental disclosures are credible and backed by tangible action (Firmansyah & Kartiko, 2024). This enhanced credibility can magnify the reputational benefits derived from transparency. The study by Wulandari and Istiqomah (2024) supports this, showing the positive effect is more pronounced in large-scale firms. This is reinforced by Rahmah et al. (2024), who found that firm size strengthens this relationship in both manufacturing and financial sectors. Thus, firm size is expected to positively moderate the disclosure-performance nexus.
H5: Firm size moderates the effect of environmental disclosure on Return on Assets (ROA).

The impact of social disclosure on financial performance is also likely to be contingent upon firm size. Large companies have the capacity and reach to implement large-scale social programs, such as community investment, employee wellness, and supply chain ethics initiatives, that generate significant positive externalities and reputational capital (Lin et al.,

2024). Their extensive brand visibility means that positive social actions are communicated to a wider audience, magnifying the impact on customer loyalty and public perception. For large, complex organizations, effective social policies can also lead to more substantial gains in employee productivity and talent retention. Research by Firmansyah and Kartiko (2024) provides evidence for this moderating effect, showing that firm size strengthens the relationship between social disclosure and financial performance, as larger firms are better positioned to leverage their social reputation into tangible economic benefits.
H6: Firm size moderates the effect of social disclosure on Return on Assets (ROA).

The effectiveness of governance disclosure in influencing financial performance is expected to be stronger for larger firms. Large-scale corporations inherently face greater complexity in their operations and are subject to more intense oversight from institutional investors, analysts, and regulatory bodies (Lagasio & Cucari, 2019). Consequently, the implementation of sophisticated and transparent governance systems (e.g., independent board committees, robust internal audits) is not only more feasible due to greater resource availability but also more critical for managing risks and maintaining investor trust (Aluchna et al., 2025; Muneer et al., 2025). The positive signals sent by high-quality governance are likely to be valued more highly by the market when they come from large, systemically important firms. This view is supported by research from Cipto and Hersugondo (2025), which indicates that firm size strengthens the positive link between governance disclosure and financial performance, as larger firms are better equipped to translate governance principles into sustainable value.
H7: Firm size moderates the effect of governance disclosure on Return on Assets (ROA).

Figure 1 presents the conceptual framework of the present research, showing the potential connection among the researched variables.

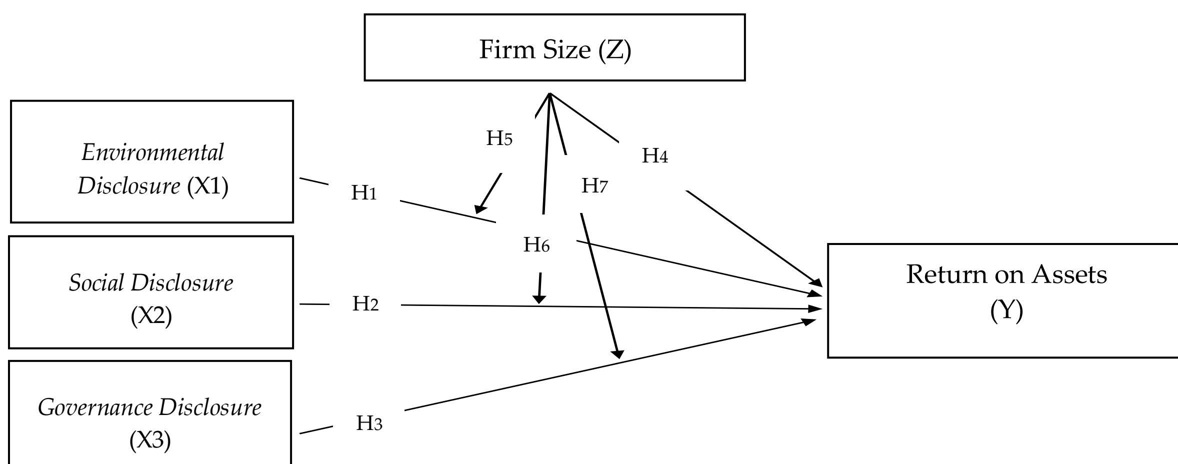

Figure 1. Conceptual Framework of the Research

Method

This study employed a quantitative approach, specifically utilising secondary data obtained from the annual and sustainability reports of banking sector companies listed on

the Indonesia Stock Exchange (IDX) for the period 2020 to 2024. Trustworthiness of the data was ensured through the credibility of official sources. The data collection process involved gathering relevant information from the IDX website (www.idx.co.id) and the official websites of each respective bank. The research methodology adopted was causal research, aiming to examine cause-and-effect relationships between ESG disclosure components (environmental, social, and governance) and financial performance, as proxied by Return on Assets (ROA), with firm size as a moderating variable. The population of this study consisted of all banking companies listed on the IDX during the specified period, and the sample selection followed a purposive sampling technique. The sample criteria are presented in Table 1.

Table 1. Research Sample

No	Description	Number
1	Companies listed in the banking sector on the Indonesia Stock Exchange Indonesia Stock Exchange (IDX) for the period 2019-2023.	47
2	Companies that did not publish complete annual reports in the 2019-2023 period.	(10)
3	Banking sector companies that do not publish *sustainability report* using GRI standards and OJK during the 2019-2023 period.	(27)
	Amount Bank samples	10
	Amount 5 Year Observation (5 x 10)	50

Source: secondary data (processed)

The regression model in this study is presented in Formula 1 as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 Z_{it} + \beta_5 (X_{1it} \times Z_{it}) + \beta_6 (X_{2it} \times Z_{it}) + \beta_7 (X_{3it} \times Z_{it}) + \varepsilon_{it} \quad (1)$$

Description
Y : Return on Assets (ROA)
X1 : Environmental disclosure (ENV)
X2 : Social disclosure (SOC)
X3 : Governance disclosure (GOV)
Z: Firm Size
(X1 x Z) = Interaction Variable X1with Z
(X2 x Z) = Interaction Variable X2with Z
(X3 x Z) = Interaction Variable X3with Z
β_0 : Constant
i = Number of Banking Companies
t = Observation Period
ε = Error
β_1 - β_7 = Coefficient of Variables X1 to X7

Results

Model Specification Tests

Before conducting the main regression analysis, a series of model specification tests were performed to determine the most suitable approach for the panel data. These diagnostic tests include the Chow Test, the Hausman Test, and the Lagrange Multiplier Test. Prior to conducting the main regression analysis, a series of model specification tests were performed to identify the most suitable approach for the panel data, beginning with the Chow Test. The fundamental purpose of this test is to choose between the Common Effects Model (CEM) and the Fixed Effects Model (FEM) by evaluating whether significant, unique, individual-specific effects exist among the banks in the sample. The null hypothesis (H0) of the Chow Test posits that the CEM is adequate, implying there are no significant individual effects, whereas the alternative hypothesis (Ha) contends that the FEM is superior due to the presence of such effects. The results, as presented in Table 2, provide a clear directive. The cross-section F-statistic is 38.216 and the cross-section Chi-square statistic is 104.370, with both yielding a probability value of 0.0000. Since this p-value is significantly less than the conventional alpha level of 0.05, the null hypothesis is decisively rejected. Therefore, the Chow Test results conclude that the Fixed Effects Model (FEM) is the statistically appropriate choice for this research over the Common Effects Model.

Table 2. Chow Test Results

Redundant Fixed Effects
Tests Equation: Untitled
Test cross-section fixed effects

Effects Test	**Statistics**	**d.f.**	**Prob.**
Cross-section F	38.216043	(9,72)	0.0000
Cross-section Chi-square	104.370385	9	0.0000

Source: Data processed with EViews 12 (2025)

Following the Chow Test, the Hausman Test is conducted as the next crucial step to determine the most appropriate model between the Fixed Effects Model (FEM) and the Random Effect Model (REM). The test's null hypothesis (H0) posits that the REM is the preferred model, which assumes that the unique, individual-specific effects are uncorrelated with the model's independent variables. Conversely, the alternative hypothesis (Ha) supports the FEM, assuming that a significant correlation does exist.

Table 3. Hausman Test Results

Correlated Random Effects - Hausman Test Equation: Untitled
Test cross-section random effects

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	3.589978	4	0.6375

Source: Data processed with EViews 12 (2025)

As presented in Table 3, the Hausman Test yields a cross-section random Chi-Square statistic of 3.589978 with a corresponding probability value of 0.6375. Since this p-value is substantially greater than the conventional significance level of 0.05, the null hypothesis is not rejected. This outcome provides strong statistical evidence that no significant correlation exists between the individual effects and the regressors, leading to the conclusion that the Random Effect Model (REM) is the more appropriate and efficient choice for this research.

The final diagnostic check in the model selection process is the Lagrange Multiplier (LM) Test, developed by Breusch-Pagan. It's crucial to note that this test serves a different purpose than the Hausman test; its primary function is to decide between the Random Effects Model (REM) and the simpler Common Effects Model (CEM), also known as Pooled OLS. The test's null hypothesis (H0) states that the Common Effects Model is adequate, which implies that the variance of the random effects is zero. The alternative hypothesis (Ha) supports the Random Effects Model, contending that significant random effects are present and should be included in the model. As shown in Table 4, the Breusch-Pagan test statistic for both cross-section and time effects is 60.19758, with a corresponding probability value of 0.0000. Because this p-value is significantly less than the 0.05 alpha level, the null hypothesis is strongly rejected. This result confirms that random effects are indeed present in the data, making the Random Effect Model (REM) statistically superior to the Common Effects Model.

Table 4. Lagrange Multiplier Test Results

	Cross-section	**Test Hypothesis Time**	**Both**
Breusch-Pagan	55.17860 (0.0000)	1.990613 (0.0000)	60.19758 (0.0000)

Source: Data processed with EViews 12 (2025)

Classical Assumption Test

To ensure the validity, reliability, and robustness of the regression analysis, a series of diagnostic checks known as the Classical Assumption Tests were conducted. Fulfilling these assumptions is a critical prerequisite for ensuring that the model's estimates are the Best Linear Unbiased Estimators (BLUE). These tests verify that the model is free from statistical issues related to normality, multicollinearity, heteroscedasticity, and autocorrelation. The results of these diagnostic tests are summarized in Table 5.

Table 5. Classical Assumption Test

Model	**Tolerance**	**VIF**	**Sig**
ENV	0,826	1,097	0,215
SOC	0,817	1,158	0,519
GOV	0,775	1,004	0,857
Asump. Sig. (2-tailed)			0.371
Durbin-Watson			1.672

Source: Data processed with EViews 12 (2025)

The findings confirm that the model meets all necessary criteria. First, the normality test yielded an Asymptotic Significance value of 0.371. Since this value is greater than the 0.05 alpha level, it indicates that the residuals are normally distributed. Second, the multicollinearity test shows that the Tolerance values for all variables (ENV=0.826, SOC=0.817, GOV=0.775) are well above the 0.1 threshold, and the Variance Inflation Factor (VIF) values (ENV=1.097, SOC=1.158, GOV=1.004) are all significantly below the upper limit of 10, confirming the absence of multicollinearity. For the heteroscedasticity test, the significance values for all independent variables (ENV=0.215, SOC=0.519, GOV=0.857) are greater than 0.05, which means the model is free from heteroscedasticity (i.e., it is homoscedastic). Finally, the Durbin-Watson statistic for autocorrelation is 1.672, which falls comfortably within the acceptable range, indicating no serial correlation. Since all assumptions are met, the model is deemed robust and suitable for hypothesis testing.

Hypotheses Testing Results

Table 6 presents the results of the partial t-test for the first regression model, which assesses the individual impact of each independent variable on Return on Assets (ROA) using a significance level of 10% (α=0.1). The analysis reveals that environmental disclosure (ENV) has a statistically significant and positive effect on ROA, as indicated by its positive coefficient (0.0236) and a probability value of 0.0228, which is well below the significance threshold. Similarly, social disclosure (SOC) demonstrates a significant positive influence on ROA, with a coefficient of 0.0190 and a probability value of 0.0672. The firm size (FIRS) variable also shows a significant positive relationship with ROA, confirmed by a probability value of 0.0357. In contrast, governance disclosure (GOV) does not have a statistically significant effect on ROA, as its probability value of 0.2451 is substantially higher than the 0.1 alpha level. In summary, these findings provide empirical support for the hypotheses that higher levels of environmental disclosure, social disclosure, and larger firm size are associated with improved financial performance. However, the hypothesis regarding a direct positive effect of governance disclosure on ROA is not supported in this model.

Table 6. Partial T Test Results (Model 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.058876	0.029152	1.879023	0.0652
ENV	0.023574	0.018923	2.786926	0.0228
SOC	0.018992	0.008755	1.904656	0.0672
GOV	0.018773	0.009873	1.203877	0.2451
FIRS	0.002335	0.001884	1.87390	0.0357

Source: Data processed with EViews 12 (2025)

The simultaneous F-test, with results presented in Table 7, assesses the overall significance of the regression model. This test determines whether the independent variables, environmental disclosure (ENV), social disclosure (SOC), governance disclosure (GOV), and firm size (FIRS), jointly have a significant effect on the dependent variable, Return on Assets (ROA). Table 7 reports an F-statistic of 2.871580 with a corresponding probability value (Prob. F-statistic) of 0.045105. Since this probability is less than the conventional 0.05 significance level, the null hypothesis (that all model coefficients are

jointly zero) is rejected. This confirms that the regression model is statistically significant and feasible, meaning the independent variables as a group are effective in explaining ROA. Furthermore, the Adjusted R-squared value is 0.454902. This indicates that the model's predictors collectively explain approximately 45.49% of the variance in ROA, while the remaining portion is attributable to other factors not included in this study.

Table 7. Simultaneous F Test Results (Model 1)

R-squared	0.192706	Mean dependent var	0.002511
Adjusted R-squared	0.454902	S.D. dependent var	0.005180
S.E. of regression	0.006786	Sum squared resid	0.001227
F-statistic	2.871580	Durbin-Watson stat	1.672074
Prob(F-statistic)	0.045105		

Source: Data processed with EViews 12 (2025)

Table 8 displays the results of the moderation analysis (Model 2), which was conducted to test the hypotheses that firm size (FIRS) moderates the relationship between each ESG dimension and Return on Assets (ROA). The key to this analysis is the statistical significance of the interaction terms. The results show that the interaction term between environmental disclosure and firm size (ENV_FIRS) is statistically significant, with a probability value of 0.0062. This indicates that firm size is a significant positive moderator, meaning the positive effect of environmental disclosure on ROA is amplified for larger banks. Similarly, the interaction term for social disclosure and firm size (SOC_FIRS) is also significant (Prob. = 0.0125), confirming that firm size strengthens the positive relationship between social disclosure and financial performance. In contrast, the interaction term for governance disclosure and firm size (GOV_FIRS) is not statistically significant, with a probability value of 0.7880. This result suggests that firm size does not play a significant moderating role in the relationship between governance disclosure and ROA. In summary, the findings strongly support the conclusion that larger firm size enhances the financial benefits of strong environmental and social performance, while the impact of governance remains insignificant, both directly and through moderation.

Table 8. Partial T Test Results (Model 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.042278	0.100914	0.250071	0.8015
ENV	0.889230	0.270755	3.109887	0.0045
SOC	0.765170	0.305198	2.607250	0.0172
GOV	0.076250	0.205350	0.190765	0.7827
FIRS	0.012988	0.006721	0.390428	0.0106
ENV_FIRS	0.045779	0.018175	3.335990	0.0062
SOC_FIRS	0.041227	0.015882	2.655237	0.0125
GOV_FIRS	0.039014	0.014770	0.270276	0.7880

Source: Data processed with EViews 12 (2025)

Hence, the regression model in this study is demonstrated in formula 2 as follows:

$$ROA = 0.042278 + 0.889230ENV + 0.765170SOC + 0.076250GOV + 0.012988FIRS + 0.045779(ENV \times FIRS) + 0.041227(SOC \times FIRS) + 0.039014(GOV \times FIRS) + \varepsilon \quad (2)$$

Table 9 presents the overall fit statistics for the moderation model (Model 2), which includes the interaction terms. The results of the simultaneous F-test show an F-statistic of 3.334327 with a highly significant probability value of 0.006078. Since this p-value is well below the 0.05 threshold, it confirms that all independent variables and their interactions, when considered jointly, have a significant effect on Return on Assets (ROA). This indicates that the moderation model as a whole is valid and statistically robust. Furthermore, the model's explanatory power has substantially increased. The Adjusted R-squared value is 0.570620, meaning the model now explains 57.06% of the variation in financial performance. This is a marked improvement from the initial model's explanatory power of 45.49%. This increase demonstrates that incorporating firm size as a moderating variable has significantly enhanced the model's ability to explain the relationship between ESG disclosure and ROA, providing strong evidence for the importance of the moderation effect.

Table 9. Simultaneous F Test Results (Model 2)

R-squared	0.457342	Mean dependent var	0.002708
Adjusted R-squared	0.570620	S.D. dependent var	0.005847
S.E. of regression	0.005180	Sum squared resid	0.001109
F-statistic	3.334327	Durbin-Watson stat	1.450690
Prob(F-statistic)	0.006078		

Source: Data processed with EViews 12 (2025)

Discussion

Environmental and Social Disclosures as Strategic Assets for Financial Performance

The empirical results of this study reveal a positive and statistically significant relationship between both environmental and social disclosures and the financial performance of Indonesian banking companies, as measured by Return on Assets (ROA). This finding transcends a simplistic interpretation of ESG as a mere compliance exercise. Instead, it suggests that proactive engagement with environmental and social issues is perceived by stakeholders as a powerful signal of superior management quality, long-term strategic vision, and reduced risk exposure (Cipto & Hersugondo, 2025; Al Amosh & Khatib, 2022). Within the framework of legitimacy theory, a bank's commitment to environmental stewardship, through transparent reporting on energy efficiency, emissions reduction, and responsible waste management, secures a "social license to operate" (Deegan, 2014). In a nation like Indonesia, where the banking sector's role in financing environmentally sensitive industries like palm oil and mining is under intense scrutiny, such disclosures act as a crucial mechanism to mitigate reputational risk and align the institution with evolving societal values. This resonates with the findings of Jafar et al. (2024) and Naeem et al. (2022), which argue that profitability is enhanced in sectors with high regulatory and reputational exposure, like banking, when environmental transparency is prioritized. The positive market reaction is not merely sentimental; it is rooted in the economic calculus that better environmental management can lead to lower operational costs, reduced risk of regulatory penalties, and a stronger brand that attracts both depositors and talent.

Similarly, the significant positive impact of social disclosure on ROA emphasizes the profound importance of human and social capital in the financial services industry. A bank's performance is intrinsically linked to trust (Gidage et al., 2025; Liu et al., 2022). By disclosing

commitments to fair labor practices, community development, and human rights, banks build and fortify this trust with a broad spectrum of stakeholders, including employees, customers, and investors. This aligns perfectly with stakeholder theory, which posits that corporate success is a function of a firm's ability to balance and fulfill the expectations of its various constituents (Mahajan et al., 2023). Engaged employees are more productive, loyal customers are less price-sensitive, and a supportive community can provide a stable operating environment. Research by Oktavia and Ramadhan (2024) and Handayati et al. (2025) corroborates this, emphasizing that strategic and sustained CSR practices create tangible financial value. Therefore, the positive coefficient for social disclosure in this study can be interpreted not just as a reward for altruism, but as a market premium for companies that effectively manage stakeholder relationships, thereby enhancing their long-term competitive advantage.

The Governance Paradox: A Critical Interpretation of Insignificance

One of the most striking and counterintuitive findings of this research is the statistically insignificant relationship between governance disclosure and ROA. While robust corporate governance is theoretically a cornerstone of investor confidence and operational efficiency, this result suggests a critical disconnect between what is disclosed and what drives financial value in the Indonesian banking context (Handayati et al., 2025). This "governance paradox" can be interpreted in several ways. First, it may reflect the issue of "box-ticking" versus substantive implementation. The metrics used to quantify governance disclosure often capture compliance with formal requirements (e.g., board independence, audit committee composition) rather than the actual effectiveness of these structures in strategic decision-making and risk oversight (Hussien et al., 2025). If governance disclosures are perceived by the market as merely fulfilling regulatory mandates without signaling genuine internal cultural change, their impact on performance would be negligible (Jafar et al., 2024).

Second, for a heavily regulated industry like banking, a high standard of governance is already a baseline expectation imposed by authorities like the OJK (Financial Services Authority). The market may have already "priced in" this expected level of governance, meaning that incremental disclosures beyond the regulatory minimum yield diminishing marginal returns in terms of financial performance (Inayati et al., 2025; Lugasio & Cucari, 2019). The information provided may be seen as redundant or non-material for investment decisions. This interpretation aligns with the research by Mayasari and Berlianti (2024), which notes that a direct correlation between governance disclosure and profitability is not always evident, particularly if the disclosed practices are not deeply integrated into the organizational culture. The insignificant result, therefore, does not necessarily imply that governance is unimportant; rather, it critically suggests that the disclosure of governance, in its current form, may fail to capture the nuances that truly differentiate well-governed firms from their peers.

Firm Size as a Catalyst: Unpacking the Moderating Effect

While firm size did not demonstrate a direct, standalone effect on ROA, its role as a significant moderating variable proved to be a pivotal finding of this study. The results confirm that firm size positively moderates the relationship between both environmental

and social disclosures and financial performance. This suggests that scale acts as a powerful amplifier for sustainability initiatives. Larger banks possess a distinct advantage in converting ESG disclosures into financial gains for two primary reasons: resources and visibility (Rahmah et al., 2024; Randrianasolo & Semenov, 2025). They command greater financial and human capital to invest in substantive, large-scale environmental projects (e.g., financing renewable energy infrastructure) and comprehensive social programs that generate significant positive externalities (Shawat et al., 2024). A large-scale initiative from a major bank is far more impactful and newsworthy than a smaller-scale project from a regional player.

This is compounded by their heightened public visibility. Large corporations operate under a microscope, subject to constant scrutiny from media, activists, and institutional investors. This intense pressure creates a powerful incentive to ensure that their environmental and social disclosures are not only transparent but also credible and backed by tangible action (Wulandari & Istiqomah, 2024). Consequently, when a large bank makes a credible ESG commitment, the reputational payoff is magnified, leading to a stronger positive impact on profitability. This finding is consistent with the work of Inayati et al. (2025), which affirms that company size strengthens the positive effect of ESG disclosure on financial performance. The moderating effect demonstrates that for E and S disclosures, size is not just about being bigger, but about having a larger platform from which to signal commitment, thereby generating greater legitimacy and stakeholder support.

The Limits of Scale: Why Firm Size Fails to Moderate Governance

Critically, the moderating effect of firm size did not extend to the relationship between governance disclosure and financial performance. This lack of moderation is as revealing as the positive findings for the other pillars. It implies that the value proposition of governance is not contingent on corporate scale in the same way as environmental and social initiatives. As discussed previously, core governance structures are heavily regulated and standardized across the banking industry (Sekar Sari et al., 2023). All banks, regardless of size, are required to have independent boards, audit committees, and risk management functions (Gidage et al., 2025). While a larger bank will have more extensive versions of these structures, the fundamental principles and the nature of their disclosure remain largely the same.

Therefore, simply being larger does not necessarily make a bank's governance disclosures more impactful or credible to the market. The absence of a moderating effect suggests that the market evaluates governance on its perceived quality and substance, not on the scale of the institution implementing it. If governance practices are viewed as mere formalities, as argued earlier, then the size of the company performing those formalities becomes irrelevant (Aluchna et al., 2025; Lagasio & Cucari, 2019). This finding reinforces the critical implication that for governance to translate into financial value, the focus must shift from administrative compliance to the demonstration of its substantive impact on strategic oversight and ethical leadership. The quality of governance disclosure must evolve to reflect this reality, moving beyond checklists to provide qualitative insights into how governance frameworks actively create and protect value within the organization. This points out that while sustainability is a strategic imperative, its financial impact is nuanced, with

environmental and social dimensions being catalyzed by scale, while governance demands a deeper, more intrinsic quality to prove its worth.

Conclusion

The present study concludes that a nuanced and strategically significant relationship exists between ESG disclosure and the financial performance of Indonesian banks. The primary finding is that environmental (E) and social (S) disclosures have a direct, positive, and statistically significant impact on Return on Assets (ROA). More critically, the study reveals the powerful catalytic role of firm size; while not a direct driver of profitability itself, it significantly amplifies the positive effects of environmental and social disclosures. This is empirically validated by the substantial increase in the model's explanatory power, with the Adjusted R-squared rising from 45.49% to 57.06% after including the moderation terms. In stark contrast, a key finding is the "governance paradox", governance (G) disclosure was found to be statistically insignificant, both directly and when moderated by firm size. The theoretical contribution of this study lies in demonstrating that firm size can be a critical factor in explaining the inconsistent results in prior ESG literature. Practically, the findings offer a clear implication for bank executives: investments in E&S initiatives are not merely compliance costs but strategic tools that yield higher returns, particularly in larger institutions. For regulators like OJK, the results suggest a need to re-evaluate governance reporting standards to better capture substantive impact over formal compliance.

Despite these contributions, the authors acknowledge the study's limitations, which in turn open avenues for future research. The most significant constraint is the relatively small sample size (N=50), which may limit the statistical power and generalizability of the findings, especially for a panel data model incorporating multiple interaction terms. Building on this, future research should aim to replicate this study with a larger sample across diverse industrial sectors to test the robustness of the firm size moderation effect. Furthermore, subsequent studies could enhance the model by incorporating other crucial financial control variables, such as leverage, liquidity, or non-financial metrics like corporate reputation, to achieve a more comprehensive understanding. Finally, to unravel the "governance paradox" identified in this research, a mixed-methods approach is recommended. Combining quantitative analysis with qualitative methods, such as in-depth case studies or interviews with management, could provide invaluable insights into the persistent disconnect between formal governance disclosure and its tangible impact on financial performance in emerging markets.

Authors' Declaration

The authors made substantial contributions to the conception and design of this study. The authors take responsibility for the data analysis, interpretation, and discussion of the results. The authors have read and approved the final manuscript.

ORCID

Fathihani https://orcid.org/0000-0002-7083-7805

Natalia Santoso https://orcid.org/0009-0004-2140-2516

Rini Sulistiyowati https://orcid.org/0009-0001-5125-3126

Meilin Veronica https://orcid.org/0009-0007-2500-930X

References

Agyemang, A. O., Yusheng, K., & Osei, A. (2025). Addressing sustainability footprint disclosure for high pollutant firms in China and the US: The roles of firms governance structure, financing decisions, and eco-technology. *Corporate Social Responsibility and Environmental Management, 32*(2), 2835-2858. https://doi.org/10.1002/csr.3092

Al Amosh, H., & Khatib, S. F. A. (2022). Ownership structure and environmental, social and governance performance disclosure: The moderating role of the board independence. *Journal of Business And Socio-Economic Development*, 2(1), 49–66. https://doi.org/10.1108/JBSED-07-2021-0094

Ali, N. B. M., Ali Hussin, H. A. A., Mohammed, H. M. F., Mohmmed, K. A. A. H., Almutiri, A. A. S., & Ali, M. A. (2025). The effect of environmental, social, and governance (ESG) disclosure on the profitability of saudi-listed firms: Insights from Saudi vision 2030. *Sustainability*, *17*(7), 2977. https://doi.org/10.3390/su17072977

Aluchna, M., Kamiński, B., Muster, M., Roszkowska-Menkes, M., Sahakiants, I., Steger, T., & Wrzosek, M. (2025). Legislative action and a propensity to report: human resource management and corporate governance disclosure in Germany and Poland. *Managerial Finance*. https://doi.org/10.1108/MF-08-2024-0633

Annisawanti, H., Dahlan, M., & Handoyo, S. (2024). Pengaruh environmental, social dan governance (esg) terhadap kinerja keuangan perusahaan yang terdaftar di Bursa Efek Indonesia (BEI) periode tahun 2018-2022. *Jurnal Proaksi*, *11*(2), 399–415. https://doi.org/10.32534/Jpk.V11i2.5702

Azzahra, W. N., Wafdayanti, H., & Hersugondo. (2024). The impact of CSR on company financial performance using company size as a moderator. *Research Horizon*, *4*(4), 321–328. https://journal.lifescifi.com/index.php/RH/article/view/342

Chakkravarthy, B., Irudayasamy, F. G., Elangovan, R., Rengaraju, N., & Parayitam, S. (2024). Relationship between return on assets and firm value: institutional holdings and firm size as moderators. *Quality & Quantity*, *58*(2), 1217-1233. https://doi.org/10.1007/s11135-023-01696-7

Cipto, N. S., & Hersugondo, H. (2025). Pengaruh ESG (Environmental, Social, and Governance) 1 terhadap kinerja dan nilai perusahaan dengan ukuran perusahaan sebagai variabel moderasi. *Jurnal Ekonomi, Manajemen Akuntansi dan Perpajakan (Jemap)*, *7*(2), 393–416. https://doi.org/10.24167/Jemap.V7i2.11761

Dai, J., Mehmood, U., & Nassani, A. A. (2025). Empowering sustainability through energy efficiency, green innovations, and the sharing economy: Insights from G7 economies. *Energy*, *318*, 134768. https://doi.org/10.1016/j.energy.2025.134768

Deegan, C. (2014). An overview of legitimacy theory as applied within the social and environmental accounting literature. *Sustainability accounting and accountability*, 248-272. Routledge.

Firmansyah, A., & Kartiko, N. D. (2024). Exploring the association of green banking disclosure and corporate sustainable growth: The moderating role of firm size and firm age. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2312967

Gharchia, S. E. De, & Mindosa, B. (2023). Pengaruh environmental, social, dan governance

terhadap profitabilitas pada perusahaan terdaftar di BEI 2021. *Jurnal Manajemen*, *12*(2), 68–86. https://doi.org/10.46806/Jm.V12i2.1092

Gidage, M., Gyamfi, B. A., & Asongu, S. A. (2025). Environmental reporting and financial performance: Evidence from the banking sector in BRICS countries. *Business Strategy and the Environment*, *34*(6), 7412-7437. https://doi.org/10.1002/bse.4358

Gündüz, M., & Gündüz, M. (2025). Environmental accounting disclosures and financial performance: evidence from the banking sector. *Sustainability*, *17*(8), 3569. https://doi.org/10.3390/su17083569

Handayati, P., Tham, Y. H., Yuningsih, Y., Sun, Z., Nugroho, T. R., & Rochayatun, S. (2025). ESG performance and corporate governance—The moderating role of the big four auditors. *Journal Of Risk And Financial Management*, *18*(1). https://doi.org/10.3390/jrfm18010031

Hussien, L. F., Alrawashedh, N. H., Deek, A., Alshaketheep, K., Zraqat, O., Al-Awamleh, H. K., & Zureigat, Q. (2025). Corporate governance and energy sector sustainability performance disclosure. *International Journal of Energy Sector Management*, *19*(5), 1234-1256. https://doi.org/10.1108/IJESM-07-2024-0015

Inayati, N. I., Rahmawati, I. Y., Pandansari, T., Hapsari, I., & Ramadhani, A. N. (2025). Environmental, Social and Governance (ESG) and corporate financial performance: Moderating effects of financial slack. *Maksimum*, *15*(1), 110. https://doi.org/10.26714/Mki.15.1.2025.110-120

Jafar, R., Basuki, B., Windijarto, W., Setiawan, R., & Yaacob, Z. (2024). Environmental, Social and Governance (ESG) disclosure and cost of equity: The moderating effects of board structures. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2429794

Krismonia, M., & Ryanto, F. R. (2025). The influence of return on assets, corporate social responsibility, and managerial ownership on company value with company size as a moderating variable in energy sector companies listed on the Indonesia stock exchange. *Journal of Asian Multicultural Research for Economy and Management Study*, *6*(1), 34-41. https://doi.org/10.47616/jamrems.v6i1.592

Lagasio, V., & Cucari, N. (2019). Corporate governance and environmental social governance disclosure: A meta-analytical review. *Corporate social responsibility and environmental management*, *26*(4), 701-711. https://doi.org/10.1002/csr.1716

Liao, C. F. (2025). ESG disclosure frequency and its association with market performance: Evidence from Taiwan. *Sustainability*, *17*(17), 7812. https://doi.org/10.3390/su17177812

Lin, Y., Shen, R., Wang, J., & Julia Yu, Y. (2024). Global evolution of environmental and social disclosure in annual reports. *Journal of Accounting Research*, *62*(5), 1941-1988. https://doi.org/10.1111/1475-679X.12575

Liu, H., Wu, K., & Zhou, Q. (2022). Whether and how ESG impacts on corporate financial performance in the Yangtze River Delta of China. *Sustainability (Switzerland)*, *14*(24), 1–17. https://doi.org/10.3390/Su142416584

Mahajan, R., Lim, W. M., Sareen, M., Kumar, S., & Panwar, R. (2023). Stakeholder theory. *Journal of Business Research*, *166*, 114104. https://doi.org/10.1016/j.jbusres.2023.114104

Mahmood, A., Mehmood, A., Terzani, S., De Luca, F., & Djajadikerta, H. G. (2025). The effect of ESG disclosure on firm value in the European context. *Management Decision*. https://doi.org/10.1108/MD-10-2024-2480

Mayasari, R., & Berlianti, M. (2024, December). The Effects Of Mandatory Esg Disclosure on

the Financial Performance of Banking Sector. In *International Joint Conference/Seminar* (Vol. 1, No. 3, pp. 74-86). https://proceeding.lsmsharing.com/index.php/event/article/view/37

Mubariz, M., Hermuningsih, S., & Suyanto, S. (2025). Pengaruh kinerja environmental, social and governance, profitabilitas, serta pertumbuhan penjualan terhadap kinerja keuangan dengan ukuran perusahaan sebagai variabel moderasi. *Journal of Economics and Management Scienties*, 193–202. https://doi.org/10.37034/Jems.V7i3.112

Mulyana, D., Widyaningsih, A., & Rozali, R. D. Y. (2025). Environmental, social, and governance (ESG) performance and corporate value: Unpacking the moderating effect of company size. *Jurnal Ekonomi dan Bisnis Airlangga*, *35*(1), 147–165. https://doi.org/10.20473/Jeba.V35i12025.147-165

Muneer, S., Singh, A., Choudhary, M. H., Alshammari, A. S., & Butt, N. A. (2025). Does Environmental Disclosure and Corporate Governance Ensure the Financial Sustainability of Islamic Banks?. *Administrative Sciences, 15*(2), 54. https://doi.org/10.3390/admsci15020054

Naeem, M., Ullah, H., & Jan, S. (2022). The impact of ESG practices on firm performance: Evidence from emerging countries. *Indian Journal Of Economics And Business*, *20*(1), 731–750.

Oktavia, S., & Ramadhan, Y. (2024). The effect of capital structure, profitability, and liquidity on company value with company size as a moderation variable. *Jurnal Indonesia Sosial Sains*, *5*(03), 518–532. https://doi.org/10.59141/Jiss.V5i03.1011

Pertiwi, L. R. B., & Hersugondo. (2023). Pengaruh kinerja environmental, social, governance (ESG) terhadap kinerja perusahaan dengan kendala keuangan sebagai variabel moderasi (studi pada perusahaan manufaktur yang terdaftar di bursa efek indonesia tahun 2016-2020). *Diponegoro Journal Of Management*, *12*(1), 1-11. http://ejournal-s1.undip.ac.id/index.php/dbr

Pratiwi, N. P. P. D. & Sisdyani, E. A. (2023). Financial performance and corporate social responsibility disclosure mediate environmental performance on firm value. *World Journal of Advanced Research and Reviews*, *20*(3), 657–671. https://doi.org/10.30574/wjarr.2023.20.3.2503

Putri, C. M., & Puspawati, D. (2023). The effect of ESG disclosure, company size, and leverage on company's financial performance in Indonesia. *The International Journal Of Business Management and Technology*, *7*(2), 252–262. https://www.theijbmt.com/archive/0950/1744929426.pdf

Rahmah, N. A., Purwohedi, U., & Handarini, D. (2024). The moderating role of profitability and firm size in ESG disclosure towards firm value. *International Journal of Education, Social Studies, and Management (IJESSM)*, *4*(2), 700–719. https://doi.org/10.52121/Ijessm.V4i2.345

Rahmaniati, N. P. G., & Ekawati, E. (2024). The role of Indonesian regulators on the effectiveness of ESG implementation in improving firms' non-financial performance. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2023.2293302

Randrianasolo, A., & Semenov, A. V. (2025). Innovation reputation and market capitalization: the moderations of firm size, industry, and asset efficiency. *Marketing Intelligence & Planning*, 1-26. https://doi.org/10.1108/MIP-08-2024-0607

Sekar Sari, P., Widiatmoko, J., & Kunci, K. (2023). Pengaruh environmental, social, and governance (ESG) disclosure terhadap kinerja keuangan dengan gender diversity

sebagai variabel moderasi. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *5(9)*(9), 3634–3642. https://journal.Ikopin.ac.id/index.php/fairvalue

Shawat, R. S., Zamel, A., Otake, Oshitsugu, Sabry, S., & Badawy, H. (2024). How firm size shapes the ESG and financial performance nexus: Insights from the MENA region. *Journal Of Accounting And Auditing: Research & Practice*, *2024*, 1–15. https://doi.org/10.5171/2024.145355

Silitonga, G. A. B., & Purwaningsih, E. (2025). The effect of company size, asset growth, asset structure, debt level and inventory profitability. *RIGGS: Journal of Artificial Intelligence and Digital Business, 4*(3), 2917-2925. https://doi.org/10.31004/riggs.v4i3.2381

Subramanian, N., & Suresh, M. (2025). Economic sustainability factors influencing the implementation of sustainable HRM in manufacturing SMEs. *Environment, Development and Sustainability, 27*(4), 8661-8691. https://doi.org/10.1007/s10668-023-04248-z

Sumani, S., & Limawan, T. L. (2024). The induce of environmental and social disclosure on stock returns. *Jurnal Manajemen Maranatha, 24*(1), 61-74. https://doi.org/10.28932/jmm.v24i1.9811

Tutar, H., Štreimikienė, D., & Mutlu, H. T. (2025). The relationship between esg and financial performance in global firms: A multidimensional study across sectors and regions for the period 2015–2025. *Corporate Social Responsibility and Environmental Management*. https://doi.org/10.1002/csr.70136

Wulandari, P., & Istiqomah, D. F. (2024). Effect of environmental, social, governance (ESG) and capital structure on firm value: The role of firm size as a moderating variable. *Jurnal Riset Akuntansi Politala*, *7*(2), 307–324. https://doi.org/10.34128/Jra.V7i2.402