



ENVIRONMENTAL, SOCIAL, GOVERNANCE AND MARKET PERFORMANCE: THE MEDIATING ROLE OF PROFITABILITY AND THE MODERATING ROLE OF BOARD INDEPENDENCE

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ABSTRACT

Introduction: This study examines the effect of Environmental, Social, and Governance (ESG) Performance on Market Performance, with Profitability as a mediating variable and Board Independence as a moderating variable in Indonesian listed companies.

Methods: This research employs a quantitative approach using panel data from 370 firm-year observations of companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2025 period. The data were analyzed using the Fixed Effects Model (FEM) with cluster-robust standard errors. The mediating effect was tested using the bootstrap method, while the moderating effect was examined using Moderated Regression Analysis (MRA)..

Results: The results reveal that ESG Performance has a positive but insignificant effect on both Market Performance and Profitability. In contrast, Profitability has a positive and significant effect on Market Performance, whereas Leverage does not significantly influence Market Performance. Furthermore, Board Independence neither has a significant direct effect on Profitability nor moderates the relationship between ESG Performance and Profitability. The bootstrap mediation analysis also confirms that Profitability does not mediate the relationship between ESG Performance and Market Performance.

Conclusion and Suggestion: These findings suggest that investors in Indonesian listed companies continue to place greater emphasis on firms' financial performance than on ESG performance when assessing firm value. Therefore, companies should strengthen ESG implementation and governance practices while ensuring that sustainability initiatives generate measurable financial benefits to enhance long-term corporate value.

INTRODUCTION

The development of global capital markets has transformed the way investors and stakeholders evaluate corporate performance. Investor orientation, which previously focused primarily on short-term financial achievements, has gradually shifted toward a long-term value creation perspective that incorporates corporate sustainability considerations. Companies are assessed not only by their capacity to generate profits but also by their effectiveness in managing risks, fostering strong stakeholder relationships, and adopting responsible business practices that promote environmental sustainability and social well-being. This paradigm shift indicates that non-financial information has emerged as increasingly crucial in investment decision-making since it provides useful insights regarding a firm's prospects and sustainability (Eccles et al., 2014; Friede et al., 2015).

In an increasingly competitive business environment, companies are required to maintain stakeholder trust by continuously improving their performance. One of the important indicators used to evaluate corporate success is market performance. Market performance reflects how investors assess a company's capacity to generate economic value, manage risks, and sustain future growth prospects. Market responses to corporate information are reflected in changes in firm market value, making market performance an important indicator for understanding investors' perceptions of corporate management quality (Albuquerque et al., 2020).

Market performance not only represents the firm's current circumstances but also reflects investors' expectations concerning the company's capacity to generate future economic benefits. Among the most widely adopted metrics in financial research to assess market performance is Tobin's Q. Tobin's Q represents the correlation between a firm's market value and its asset value, thereby indicating how the market evaluates the effectiveness of resource utilization and future growth opportunities. In contrast to accounting-based measures that primarily reflect historical performance, Tobin's Q is commonly recognized as a future-oriented indicator because it incorporates investors' expectations regarding future corporate prospects (Chung & Pruitt, 1994; Tobin, 1969; Alareeni & Hamdan, 2020).

Market perceptions of companies are increasingly influenced by the quality of information available to stakeholders. Investors consider not only financial information but also non-financial information related to sustainability and corporate governance. Transparent and high-quality disclosure can reduce information asymmetry, enhance corporate credibility, and strengthen market confidence in corporate decisions (Dhaliwal et al., 2011; Healy & Palepu, 2005; García-Sánchez et al., 2019). The growing demand for transparency is reflected in Indonesia's capital market regulations. OJK Regulation No. 29/POJK.04/2016 requires public companies to disclose annual reports, while OJK Regulation No. 51/POJK.03/2017 on Sustainable Finance encourages transparent sustainability reporting. These regulations reflect a shift in corporate evaluation, where company success is assessed not only by economic performance but also by the management of environmental, social, and governance (ESG) aspects. Despite these regulations, market performance in Indonesia continues to vary across industries, indicating differences in investor responses to companies' prospects and characteristics. Such variations suggest that internal corporate factors play an important role in explaining differences in companies' ability to create value for stakeholders.

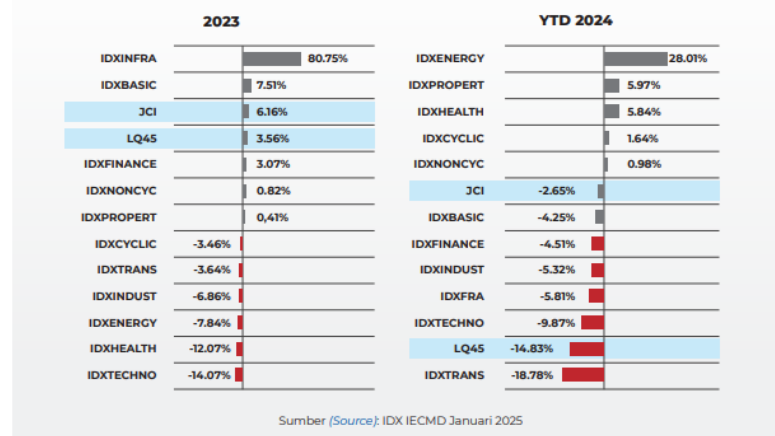


Figure 1.1. Sectoral Index Performance in 2023 to Year-to-Date (YTD) 2024

Source: OJK (2024), *Capital Market, Derivatives Finance, and Carbon Exchange Fact Book 2024*.

Based on sectoral indices of firms listed on the Indonesia Stock Exchange (IDX), market performance in Indonesia varies considerably across industries. In 2023, the Composite Stock Price Index (IHSG) increased by 6.16%, but sectoral performance was uneven, with infrastructure recording the highest growth of 80.75%, while technology declined by 14.07%; several sectors, including healthcare, energy, industrials, transportation and logistics, and consumer cyclicals, also experienced negative performance. In the 2024 year-to-date (YTD) period, the IHSG declined by 2.65%, although energy (28.01%), property (5.97%), and healthcare (5.84%) continued to grow, while transportation and logistics recorded the largest decline (18.78%), followed by technology (9.87%). These variations indicate that overall market movements do not necessarily reflect individual corporate value, as investors consider industry prospects, company-specific characteristics, risk management, and strategic initiatives for long-term value creation.

One factor that has received increasing attention from investors in evaluating companies is Environmental, Social, and Governance (ESG) Performance. ESG Performance represents a firm's efforts in addressing environmental concerns, maintaining social responsibility, and strengthening governance mechanisms to support long-term sustainable business practices. The increasing attention toward ESG is driven by growing investor awareness of climate-related risks, demands for responsible business practices, and the need for greater corporate transparency. Previous studies indicate that companies with stronger ESG performance generally achieve superior reputations and experience lower levels of non-financial risk., and stronger stakeholder relationships (Eccles et al., 2014).

Following the principles of Stakeholder Theory perspective proposed by Freeman (1984), corporate success is not solely determined by the ability to satisfy shareholders' interests but also by the capacity to meet the expectations of diverse stakeholders associated with the company. ESG implementation represents a strategic approach for creating stakeholder value through enhanced legitimacy, reputation, and market trust. Thus, firms demonstrating higher ESG Performance are theoretically anticipated to obtain greater investor appreciation, which is reflected in improved market performance.

Nevertheless, the linkage between ESG Performance and market performance stays empirically inconclusive. Several studies have found that ESG positively affects firm value because it reduces risks, enhances reputation, and provides positive signals to investors (Friede et al., 2015). Conversely, some studies argue that ESG has an insignificant relationship with market performance due to the implementation of ESG practices requires substantial investment costs, while its economic benefits may take longer to materialize (Brammer et al., 2006; Broadstock et al., 2021). These inconsistent findings indicate the importance of exploring the processes that explain how ESG Performance affects market performance.

One mechanism that may analyze the interaction between ESG Performance and market performance is profitability. Effective ESG implementation can improve operational efficiency, strengthen relationships with customers and stakeholders, reduce business risks, and enhance competitive advantages. These benefits may subsequently improve the organization's ability to achieve profits. Profitability, assessed which indicates a firm's capability to generate returns through the utilization of its assets to generate earnings. Greater profitability conveys a positive impression among investors regarding the firm's capacity to create economic value, which may enhance market performance (Buallay, 2020; Christensen et al., 2021).

Besides ESG and profitability, the effectiveness of corporate value creation is also related to the effectiveness of governance mechanisms. One important governance mechanism is board independence, referring to the percentage of independent Board participating as a board member. According to Agency Theory presented by Jensen & Meckling (2019), independent Board play an essential role in reducing misalignment of interests between managers and shareholders through effective monitoring functions. Independent Board ensure that strategic corporate policies, including ESG initiatives, are implemented consistently and directed toward long-term stakeholder value creation. Previous studies demonstrate that strong corporate governance mechanisms can strengthen the connection between sustainability initiatives and corporate performance through improved transparency and information reliability and managerial oversight effectiveness (Gillan et al., 2021; Velte, 2017).

LITERATURE REVIEW

Stakeholder Theory

Stakeholder Theory formulated by Freeman (1984), suggests that corporate objectives should reach beyond shareholder returns to consider the interests of multiple stakeholders who have relationships with the company and are influenced by its operations. Stakeholders include investors, employees, customers, suppliers, governments, communities, and other parties that contribute to the sustainability of the company. This perspective expands the traditional view of corporate objectives from current financial performance creating lasting value for the company through the management of stakeholder relationships. In the context of sustainability, Stakeholder Theory explains that companies need to respond to increasing demands for responsible business practices through the inclusion of ESG aspects in their strategic planning. Effective ESG implementation represents a company's commitment to fulfilling stakeholder expectations regarding environmental responsibility, social contribution, and transparent governance. By addressing stakeholder interests, companies can enhance legitimacy, strengthen corporate reputation, reduce operational risks, and improve stakeholder trust, which may ultimately contribute to higher firm value and market performance.

Recent developments in corporate sustainability research emphasize that ESG disclosure has become a crucial instrument for communicating corporate responsibility and long-term strategic orientation to stakeholders. Gillan et al. (2021) explain that ESG practices have become increasingly relevant in corporate finance because they are associated with risk management, governance quality, and value creation. Companies with stronger ESG performance are considered more effectively able to manage non-financial risks and respond to stakeholder expectations, thereby improving investor confidence.

Furthermore, Stakeholder Theory present a theoretical foundation to clarify the association between ESG Performance and market performance. Investors increasingly consider sustainability information when evaluating companies because ESG performance reflects not only current operational conditions but also future growth potential and business resilience. Therefore, companies with higher ESG Performance are expected to receive greater market appreciation, reflected in higher market valuation measured by Tobin's Q.

Agency Theory

According to Jensen and Meckling (1976), Agency Theory highlights the correlation among shareholders, who act as principals, and managers, who serve as agents may involve conflicting interests arising from differences in goals and access to information. Managers generally possess greater information regarding company operations than shareholders, creating potential agency problems when managerial decisions are not fully aligned with shareholder interests. Corporate governance mechanisms are designed to reduce agency conflicts by improving monitoring effectiveness and ensuring that managerial actions are consistent with corporate objectives. One important governance mechanism is board independence. Independent Board serve as an external monitoring mechanism that can limit managerial opportunistic behavior, improve accountability, and improve the scope of corporate decision-making. In the context of ESG implementation, Based on Agency Theory, independent boards are considered essential in ensuring that sustainability initiatives are implemented effectively rather than merely serving as symbolic disclosure practices. Independent Board can monitor management decisions related to environmental, social, and governance strategies and ensure that these strategies contribute to long-term corporate value creation.

Recent studies emphasize the critical the role played by governance mechanisms in improving the effectiveness of ESG practices. Gillan et al. (2021) argue that corporate governance quality influences how firms integrate ESG considerations into strategic decision-making processes. Strong governance structures can enhance enhance transparency, mitigate information asymmetry, and strengthen investor confidence in corporate sustainability commitments.

ESG Performance and Market Performance

ESG Performance is an approach employed to examine a company's capacity to integrate sustainability aspects into its business strategy. ESG consists of three main dimensions: corporate responsibility toward the

environment (*environmental*), relationships with social stakeholders (*social*), and the quality of corporate governance mechanisms (*governance*). In the development of modern capital markets, ESG information has received increasing attention from investors because it provides insights into non-financial risks and the organization's ability to deliver long-term value creation. ESG implementation represents a strategic approach for building positive relationships with investors, customers, governments, and communities. Firms with superior ESG Performance are considered to have better capabilities in managing risks, enhancing corporate reputation, and creating competitive advantages that may contribute to increased firm value.

Empirical studies demonstrate that ESG Performance related to better market performance because investors increasingly incorporate sustainability information in the process of making investment decisions. Gillan et al. (2021) explain that ESG factors have become an important component in corporate finance literature because they are closely related to risk management, governance quality, and value creation. Corporations with higher ESG Performance is expected to face reduced operational and reputational risks resulting in more favorable market responses. Furthermore, Broadstock et al. (2021) suggest that companies with better ESG performance demonstrate stronger market resilience when facing economic uncertainty. This finding indicates that ESG not only provides environmental and social benefits but also has implications for investor perceptions and corporate market value.

In developing markets such as Indonesia, the correlation between ESG and market performance has become increasingly relevant as companies face growing demands for transparency from global investors. Puspitasari et al. (2025) found that ESG scores positively affect firm value, as measured by Tobin's Q, among Indonesian listed companies. This finding suggests that capital markets increasingly appreciate companies with stronger sustainability practices.

Nevertheless, the link between ESG Performance and market continues to be empirically inconclusive. Some studies indicate that ESG enhances firm value, while others suggest that ESG does not significantly affect market valuation because the financial returns from sustainability investments often take a longer period to become evident. These inconsistent findings indicate that ESG does not always directly translate into higher market value, suggesting the existence of certain mechanisms that explain this relationship.

Accordingly, the following first hypothesis is established:

H1: ESG Performance has a positive effect on market performance.

Profitability as a Mediating Variable between ESG Performance and Market Performance

Profitability is a key measure that captures a firm's capacity to produce profits through the efficient management and deployment of its resources. This study measures profitability using Return on Assets (ROA), which indicates how effectively a organization employs its assets to produce earnings a company in managing its assets to generate profits. Theoretically, ESG Performance can improve profitability through several mechanisms. Effective ESG practices may enhance operational efficiency, reduce costs associated with environmental and social risks, increase customer loyalty, and strengthen relationships with stakeholders. These advantages can improve the organization's capacity to deliver enduring financial performance. Christensen et al. (2021) explain that sustainability practices and non-financial disclosures can generate economic benefits when companies successfully integrate ESG into their business strategies. ESG does not merely function as a legitimacy mechanism but also serves as a strategic tool for improving operational efficiency and managing corporate risks.

The relationship between ESG and profitability is also supported by recent empirical evidence. Several studies demonstrate that ESG Performance can improve corporate financial performance because companies with stronger sustainability practices tend to have better reputations and stronger stakeholder trust. Profitability subsequently serves as a mechanism explaining how ESG practices are translated into increased firm value. Investors may not immediately respond to ESG information itself but may instead evaluate the economic outcomes generated from ESG implementation. When ESG contributes to improved profitability, the market is expected to respond positively, which is represented in higher Tobin's Q.

Previous research on the mediating relationship indicates that financial performance represents a key mechanism linking ESG practices to firm value. Alkayyis Rayis et al. (2025) found that financial performance

mediates the relationship between the association between ESG Performance and firm value in Indonesian publicly listed companies. Therefore, this study proposes the following hypotheses:

H2: ESG Performance has a positive effect on profitability.

H3: Profitability has a positive effect on market performance.

H4: Profitability mediates the relationship between ESG Performance and market performance.

Board Independence and ESG Performance

Corporate governance represents a critical mechanism in increasing the efficiency of strategic initiatives, particularly those related to sustainability. A key aspect of corporate governance is board independence, which is measured by the composition of independent board serving on the board. The presence of board independence can improve the quality of oversight over strategic organization decisions, including ESG-related policies. A more independent board structure provides stronger monitoring capabilities, ensuring that sustainability initiatives are not merely implemented as regulatory compliance activities but become an integral part of long-term value creation strategies. Gillan et al. (2021) explain that corporate governance mechanisms are closely associated with ESG effectiveness because strong governance structures enhance corporate accountability, transparency, and responsible decision-making.

In the Indonesian context, board independence becomes increasingly important because concentrated ownership structures may increase potential conflicts between controlling shareholders and other stakeholders. Board independence are expected to strengthen the credibility of ESG information disclosure and enhance investor confidence. Recent studies suggest that board independence can enhance the connection between ESG practices and company valuation Setiawan et al. (2026) show that board independence strengthens the credibility of ESG disclosures, thereby contributing to higher firm value among Indonesian listed companies.

Based on this discussion, the following hypothesis is proposed:

H5: Board Independence strengthens the effect of ESG Performance on profitability.

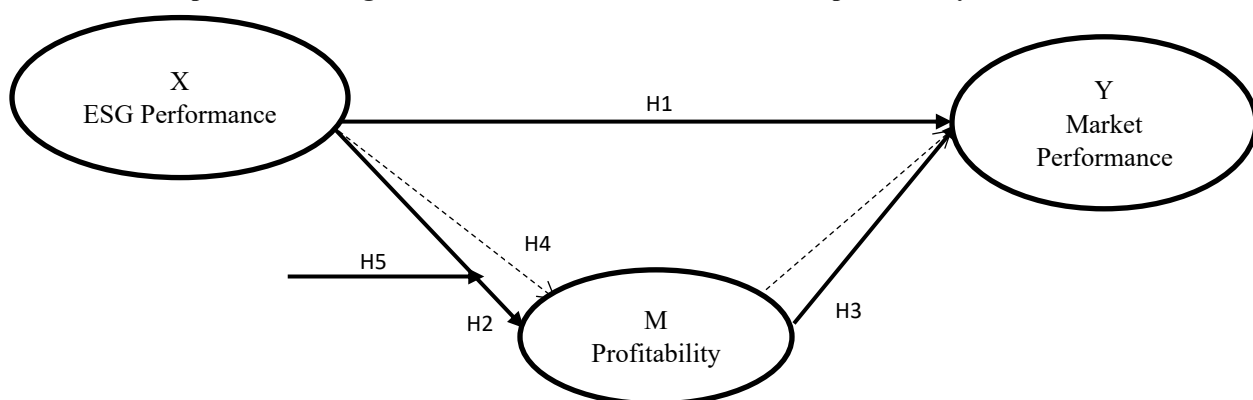


Figure 2. Research Conceptual Model

Source: Processed by the researcher (2026)

RESEARCH METHODS

Research Design and Sample Selection

This study adopts a quantitative approach using an explanatory research design employed to investigate the relationships among ESG Performance, board independence, profitability, and market performance. The study examines companies listed on the Indonesia Stock Exchange (IDX) over the period of 2022–2025. The application of panel data analysis allows the research to capture variations across firms and changes over the period of analysis, providing a more complete understanding of the relationships examined.

The study considers all IDX-listed companies as the population. The research sample was obtained using the following specific criteria for sample selection: (1) firms that remained listed on the IDX throughout the study period; (2) firms that disclosed annual reports and sustainability reports for the 2022–2025 period.

period; (3) firms with available ESG scores obtained from Refinitiv/LSEG Workspace; and (4) firms with complete financial information required for measuring the research variables. Applying these criteria, the final sample is composed of 110 companies, resulting in 370 firm-year observations.

The data used the data utilized in this research were gathered from multiple sources, such as annual reports, sustainability reports, financial statements, and ESG Score data obtained from LSEG Workspace.

Variable Measurement

This research involves five categories of variables, consisting of a dependent variable, an independent variable, a mediating variable, a moderating variable, and a control variable.

Table 1

Indicators for Measuring Research Variables

Variable	Measurement	Source
<i>Dependent</i> Market Performance	Market is represented through Tobin's Q, calculated by comparing the combined market value of equity and total debt with the firm's total assets. $TQ = \frac{\text{Market Value of Equity} + \text{Total Debt}}{\text{Total Asset}}$	(Alareeni & Hamdan, 2020; Chung & Pruitt, 1994)
<i>Independent</i> ESG Performance	ESG Performance is evaluated using the ESG Score developed by Refinitiv/LSEG Workspace. The score evaluates corporate sustainability performance based on three dimensions: environmental responsibility, social responsibility, and governance quality. A higher ESG Score indicates stronger sustainability performance. $ESG \text{ Performance} = ESG \text{ Score Revinitif } (0 - 100)$	(Gillan et al., 2021)
<i>Mediating</i> Profitability (ROA)	Profitability is represented by Return on Assets (ROA), which captures the extent to which a company can create financial returns from the utilization of its overall asset base. $ROA = \frac{\text{Net Income}}{\text{Total Asset}}$	(Buallay, 2020; Brigham and Houston (2022))
<i>Moderating</i> Board Independence	Board Independence is calculated based on the percentage of independent board within the overall board composition. $BI = \text{Number of Board Independence} / \text{Total number of Board}$	(Gillan et al., 2021; Jensen & Meckling, 1976)
<i>Control</i> Leverage (DAR)	Leverage is measured using the Debt-to-Assets Ratio (DAR), which indicates the proportion of company assets financed by liabilities. $DAR = \frac{\text{Total Debt}}{\text{Total Asset}}$	(Brigham and Houston (2022); Ross et al. (2022))

Source: Data Processed by the researcher (2026)

Data Analysis Technique

This research employs panel data regression analysis to examine the relationship between ESG Performance, board independence, profitability, and market performance. A panel data approach is applied as the dataset consists of cross-sectional data from several companies observed over multiple periods. The use of panel data provides several advantages, including controlling for unobserved heterogeneity among firms and improving the efficiency of parameter estimation (Baltagi, 2021).

Before conducting regression analysis, this study performs several model specification procedures used to determine the optimal panel data regression model. The Chow test is conducted to determine whether the Common Effect Model (CEM) or Fixed Effect Model (FEM) provides a better estimation. Subsequently, the Hausman test is applied to identify whether the Fixed Effect Model (FEM) or Random Effect Model (REM) is more suitable for the

panel data analysis. The Breusch–Pagan Lagrange Multiplier (LM) test is also performed to evaluate the preference of the Random Effect Model over the Common Effect Model.

The empirical models used in this study are formulated as follows:

Model 1.

The Effect of ESG Performance and Profitability on Market Performance

$$TQ_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 ROA_{it} + \beta_3 DAR_{it} + e_{it} \dots \dots \dots (1)$$

Model 2.

The Moderating Effect of Board Independence on the Relationship between ESG Performance and Profitability

$$ROA_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 BI_{it} + \beta_3 (ESG \times BI)_{it} + \beta_4 DAR_{it} + e_{it} \dots \dots \dots (2)$$

Mediation Analysis (Bootstrap)

To investigate the mediating effect of profitability on the relationship between ESG Performance and market performance, this study employs the bootstrap mediation approach with 5,000 resampling procedures (Preacher & Hayes, 2008). The indirect effect is calculated as the product of the coefficient of ESG Performance on profitability and the coefficient of profitability on market performance:

$$Indirect\ Effect = a \times b$$

RESULT AND ANALYSIS

Descriptive Statistics

Table 2 summarizes the descriptive statistics of the variables examined in this study, including the mean, standard deviation, minimum, and maximum values of Market Performance (Tobin's Q), ESG Performance, Profitability (ROA), Board Independence (BI), and Leverage (DAR). The analysis covers 370 firm-year observations of IDX-listed companies during the 2022–2025 period.

Tabel 2 Descriptive Statistics					
Variable	Obs.	Mean	Std. Dev.	Minimum	Maximum
TQ	370	1,687623	2,170349	0,233247	21,16834
ESG	370	51,40979	17,81910	11,19810	88,87977
ROA	370	0,067274	0,070714	0,000510	0,583356
BI	370	0,471834	0,122819	0,157895	0,833333
DAR	370	0,517717	0,242211	0,027556	1,468109

Source: Data Processed by the researcher (2026)

Based on Table 2, the average value of Tobin's Q (TQ) is 1,687623, indicating that the market value of the sampled companies generally exceeds their asset value. However, the high standard deviation 2,170349 reflects substantial variation in market valuation among firms. The average ESG Performance score is 51,40979, with a standard deviation of 17,81910, indicating differences in sustainability implementation and disclosure quality among Indonesian listed companies. The Profitability (ROA) variable has an average value of 0,067274, suggesting that companies generate approximately 6,73% net income from total assets. The variation in ROA values indicates differences in operational efficiency and asset utilization across firms. The average Board Independence (BI) value is 0,471834, meaning that independent Board represent approximately 47,18% of the board composition. This indicates that most companies have implemented independent governance structures, although the proportion varies across firms. The average Leverage (DAR) is 0,517717, indicating that approximately 51,77% of company assets are financed by liabilities. The variation in leverage levels reflects differences in corporate financing strategies and financial risk among firms.

Overall, the descriptive statistics demonstrate considerable variation in ESG practices, profitability, governance structures, capital structures, and market performance, supporting further empirical analysis using panel data regression.

Panel Data Model Selection

The Chow test was performed to determine the appropriate model between the Common Effect Model (CEM) and Fixed Effect Model (FEM). Subsequently, the Hausman test was conducted to identify whether the Fixed Effect Model (FEM) or Random Effect Model (REM) provided a more suitable estimation approach. In addition, the Breusch–Pagan Lagrange Multiplier (LM) test was employed to assess the preference between the Common Effect Model (CEM) and Random Effect Model (REM). The results of the panel data model selection procedures are presented in Table 3.

Table 3 Panel Data Model Selection Tests

Model	Test	Statistic	Prob.	Selected Model
Model 1:	Chow Test	$F(109,257) = 52,85$	0,0000	FEM
	Hausman Test	$\chi^2(3) = 98,60$	0,0000	FEM
	Breusch–Pagan LM	$\text{chibar}^2 = 115,41$	0,0000	REM
	Final Model 1			Fixed Effect Model (FEM)
Model 2:	Chow Test	$F(109,256) = 7,48$	0,0000	FEM
	Hausman Test	$\chi^2(4) = 20,44$	0,0004	FEM
	Breusch–Pagan LM Test	$\text{chibar}^2 = 195,89$	0,0000	REM
	Final Model 2			Fixed Effect Model (FEM)

Source: Data Processed by the researcher (2026)

The panel data specification tests indicate that the Fixed Effect Model (FEM) is the most appropriate estimation method for both research models. For Model 1, the Chow test results show a significant probability value ($p < 0.05$), indicating that the Fixed Effect Model is preferable to the Common Effect Model. Furthermore, the Hausman test produces a significant result ($\chi^2 = 98.60$; $p = 0.0000$), confirming that the Fixed Effect Model is more consistent than the Random Effect Model. Although the Breusch–Pagan LM test indicates that the Random Effect Model is preferable to the Common Effect Model ($\text{chibar}^2 = 115.41$; $p = 0.0000$), the Hausman test determines that the Fixed Effect Model provides more consistent estimates. Therefore, The estimation results for Model 1 are obtained using the Fixed Effect Model (FEM).

For Model 2, the Chow test The Chow test results indicate that the Fixed Effect Model (FEM) is more appropriate than the Common Effect Model (CEM), as evidenced by a significant probability value of 0.0000. Furthermore, the Hausman test produces a significant chi-square statistic of 20.44 with a probability value of 0.0004, indicating that the Fixed Effect Model is preferred over the Random Effect Model (REM). Indicating systematic differences between FEM and REM coefficients. Therefore, the Fixed Effect Model is selected. Although the LM test suggests that the Random Effect Model is preferable compared with the Common Effect Model ($\text{chibar}^2 = 195.89$; $p = 0.0000$), the Hausman test confirms that the Fixed Effect Model is the most consistent estimation approach. Consequently, both models employ the Fixed Effect Model for subsequent regression analysis.

Classical Assumption Tests

Prior to estimating the panel regression models, several diagnostic tests were conducted to ensure the reliability and validity of the regression results. These diagnostic procedures included tests for multicollinearity, heteroskedasticity, and autocorrelation.

Table 4 Classical Assumption Test Results

Test	Model 1	Model 2	Decision
Multicollinearity (Mean VIF)	1,17	1,17	No multicollinearity

Heteroskedasticity	$\chi^2(110) = 5,0 \times 10^{34}; p =$	$\chi^2(110) = 6,0 \times 10^{33}; p =$	Heteroskedasticity exists
Modified Wald Test	0.0000	0.0000	
Wooldridge	$F(1,88) = 22,473; p =$	$F(1,88) = 0,983; p = 0,3241$	Model 1: Autocorrelation
Autocorrelation	0,0000		exists
Test			Model 2: No autocorrelation

Source: Data Processed by the researcher (2026)

The presence of multicollinearity among the independent variables was examined using the VIF test. The findings indicate that the mean VIF value is 1.17, with individual VIF values ranging from 1.08 to 1.29. Since all VIF values are below the commonly accepted threshold of 10, the regression model does not suffer from multicollinearity issues among the independent variables, the regression models do not suffer from multicollinearity problems. This indicates that the independent variables used in the models do not exhibit strong linear relationships with each other.

The Modified Wald test for groupwise heteroskedasticity was conducted to examine whether the variance of residuals differs across firms. The results indicate significant heteroskedasticity in both models. Model 1 produces a chi-square value of $5,0 \times 10^{34}$ with a probability value of 0.0000, while Model 2 produces a chi-square value of $6,0 \times 10^{33}$ with a probability value of 0.0000. Therefore, the null hypothesis of homoscedasticity is rejected, indicating the presence of heteroskedasticity in the panel regression models. To address this issue, the study applies heteroskedasticity-robust standard errors clustered at the firm level to obtain more reliable statistical inference (Hoechle, 2007).

The Wooldridge test for autocorrelation in panel data was applied to identify the presence of first-order serial correlation. The results show that Model 1 has a significant autocorrelation problem with an F-value of 22,473 and a probability value of 0,0000, indicating the rejection of the null hypothesis of no autocorrelation. Meanwhile, Model 2 shows an F-value of 0,983 with a probability value of 0,3241, indicating that the null hypothesis cannot be rejected. Therefore, Model 2 does not experience first-order autocorrelation. Since Model 1 exhibits heteroskedasticity and autocorrelation, while Model 2 exhibits heteroskedasticity, the final regression estimation applies cluster-robust standard errors at the firm level to overcome potential violations of classical assumptions.

Regression Results

After conducting the panel data specification tests and diagnostic tests, the Fixed Effect Model (FEM) with robust standard errors clustered at the firm level was employed to estimate the research models. This approach was applied to address potential heteroskedasticity and autocorrelation issues in the panel data. The regression results for Model 1 and Model 2 are presented in Table 5.

The Effect of ESG Performance and Profitability on Market Performance (Model 1).

Tabel 5 Fixed Effect Regression Results

Variables	Coefficient	Robust Std. Error	t-value	p-value
ESG Performance	0,001316	0,004956	0,27	0,791
Profitability (ROA)	3,512774	1,582611	2,22	0,029**
Leverage (DAR)	1,802562	1,115723	1,62	0,109
Constant	0,450437	0,673371	0,67	0,505
Within R-squared	0,0941			
F-statistic	4,88			
Prob > F	0,0032			

Significant scale level α 0,05

Source: Processed Secondary Data 2026

Using the regression coefficient reported in Table 5, the estimated empirical expression can be stated as follows:

$$TQ_{it} = 0,450437 + 0,001316ESG_{it} + 3,512774ROA_{it} + 1,802562DAR_{it} + e_{it}$$

The estimation results presented in Table 5 show that the Fixed Effect Model with robust standard errors is statistically significant, as reflected in the F-statistic value of 4.88 with a corresponding probability value of 0.0032. The model explains approximately 9.41% of the variation in market performance within firms, as indicated by the within R-squared value. ESG Performance has a positive coefficient that does not reach statistical significance ($\beta = 0.001316$; $p = 0.791$), indicating that ESG implementation does not significantly influence market performance measured by Tobin's Q. This finding suggests that investors in Indonesian listed companies may not yet fully incorporate ESG information into their valuation decisions during the observation period. Profitability (ROA) has a positive and significant effect on market performance ($\beta = 3.512774$; $p = 0.029$). This result indicates that companies with higher profitability tend to receive higher market appreciation because profitability provides an encouraging signal about the firm's capability to generate economic value. Leverage (DAR) shows a positive but insignificant relationship with market performance ($\beta = 1.802562$; $p = 0.109$). This evidence shows that fluctuations in capital structure do not significantly influence market valuation after controlling for firm-specific effects.

Mediation Results

The Mediating Role of Profitability in the Relationship between ESG Performance and Market Performance.

Table 6 Bootstrap Mediation Test

Mediation Path	Indirect Effect	Bootstrap Std. Error	z-value	p-value	95% Confidence Interval	Decision
ESG Performance → Profitability (ROA) → Market Performance (TQ)	-0,0017925	0,0024718	-0,73	0,468	[-0,0066372 ; 0,0030521]	Not Mediated

Source: Processed Secondary Data 2026

The bootstrap mediation analysis was conducted using 5.000 replications to examine the indirect effect of ESG Performance on market performance through profitability. The results in Table X show that the indirect effect of ESG Performance through profitability is negative but statistically insignificant (indirect effect = -0,0017925; p -value = 0,468). Furthermore, the 95% confidence interval ranges from -0,0066372 to 0,0030521, which includes zero. Therefore, the mediation effect is not statistically supported.

These estimation indicate that profitability does not act as a mediating mechanism in the relationship between ESG Performance and market performance. Although ESG practices may contribute to improving corporate sustainability and stakeholder relationships, the economic benefits generated from ESG implementation have not been sufficiently reflected through profitability to influence investors' market valuation. This result suggests that investors in Indonesian listed companies may not yet fully perceive ESG-related initiatives as a direct source of financial value creation during the observation period.

Moderrated Regression Analysis (MRA) Results

The Moderating Effect of Board Independence on the Relationship between ESG Performance and Profitability (Model 2).

Table 7 Fixed Effect Regression Results

Variables	Coefficient	Robust Std. Error	t-value	p-value
ESG Performance	0,001051	0,001067	0,99	0,326
Board Independence	0,116258	0,078300	1,48	0,140
ESG × BI	-0,002868	0,001810	-1,58	0,116
Leverage (DAR)	0,061849	0,150752	0,41	0,682
Constant	-0,002838	0,087853	-0,03	0,974
Within R-squared	0,0244			

F-statistic	1,10
Prob > F	0,3622

Significant scale level α 0,05

Source: Processed Secondary Data 2026

Using the regression coefficient reported in Table 7, the estimated empirical expression can be stated as follos:

$$ROA_{it} = -0,002838 + 0,001051ESG_{it} + 0,116258BI_{it} - 0,002868(ESG \times BI)_{it} + 0,061849DAR_{it} + e_{it}$$

The estimation in Table 7 indicate that the moderation model is not statistically significant, with an F-statistic value of 1,10 and a probability value of 0,3622. The within R-squared value of 0,0244 shows that the model can explain a relatively small proportion of variations in profitability. ESG Performance does not significantly affect profitability ($\beta = 0,001051$; $p = 0,326$). Furthermore, Board Independence does not show a statistically significant direct effect on profitability ($\beta = 0,116258$; $p = 0,140$). the connection variable between ESG Performance and Board Independence ($ESG \times BI$) has a negative and insignificant coefficient ($\beta = -0,002868$; $p = 0,116$). Therefore, board independence does fails to demonstrate a significant role in moderating the connection between ESG Performance and profitability. This result suggests that the existence of independent Board in Indonesian companies listed companies has not been sufficient to strengthen the economic benefits derived from ESG implementation.

Simultaneous F-Test

The simultaneous F-test results show that Model 1 demonstrates a statistically significant result, with an F-statistic value of 4,88 and a probability value of 0,0032 (<0.05). This indicates that ESG Performance, profitability (ROA), and leverage (DAR) jointly affect market performance (Tobin's Q). Meanwhile, Model 2 is not statistically significant, with an F-statistic value of 1.10 and a probability value of 0.3622 (>0.05), indicating that ESG Performance, Board Independence, $ESG \times BI$ interaction, and leverage do not jointly affect profitability (ROA). These results suggest that the first model provides stronger evidence in explaining variations in market performance.

Coefficient of Determination (R^2)

The coefficient of determination was evaluated using the within R-squared value in the Fixed Effect Model. Model 1 has a within R-squared value of 0.0941, indicating that ESG Performance, profitability (ROA), and leverage (DAR) explain 9.41% of the variation in market performance (Tobin's Q). Meanwhile, Model 2 has a within R-squared value of 0.0244, indicating that ESG Performance, Board Independence, the interaction term, and leverage explain 2.44% of the variation in profitability (ROA). These findings suggest that market performance and profitability are influenced by external factors beyond the variables included in this research.

Discussion

The results show that ESG performance has a positive but insignificant effect on market performance ($\beta = 0.001316$; $p = 0.791$). This indicates that ESG practices were not sufficiently reflected in Tobin's Q during the observation period. Investors may still place greater emphasis on observable financial performance, while the benefits of ESG initiatives may require a longer period to translate into economic and market value. Thus, ESG performance alone does not appear to be a significant determinant of market valuation among IDX-listed firms. In contrast, profitability has a positive and significant effect on market performance ($\beta = 3.512774$; $p = 0.029$). Higher profitability indicates greater efficiency in utilizing assets and stronger capacity to generate economic value, which may increase investor confidence and market valuation. This finding suggests that financial performance remains a more immediate consideration for investors than ESG performance. Meanwhile, leverage has a positive but insignificant effect on market performance ($\beta = 1.802562$; $p = 0.109$), indicating that differences in capital structure do not significantly influence market valuation after controlling for firm-specific effects.

The mediation analysis shows that profitability does not mediate the relationship between ESG performance and market performance. The indirect effect is negative and insignificant ($\beta = -0.0017925$; $p = 0.468$), with a 95% confidence interval that includes zero. This indicates that ESG practices have not generated sufficient profitability effects to subsequently influence market valuation during the study period. ESG initiatives may provide long-term sustainability and stakeholder benefits, but these benefits have not yet translated into measurable financial and market outcomes. Board independence also fails to moderate the relationship between ESG performance and profitability. The ESG $\times$ BI interaction is negative but insignificant ($\beta = -0.002868$; $p = 0.116$), suggesting that a greater proportion of independent Board does not significantly strengthen the economic benefits of ESG practices. Formal board independence may not be sufficient to influence ESG outcomes without effective oversight, relevant expertise, and integration of sustainability into corporate strategy.

CONCLUSION

This research analyzes the influence of ESG Performance on Market Performance (Tobin's Q), while also analyzing the mediating role of Profitability and the moderating role of Board Independence among firms listed on the Indonesia Stock Exchange. The findings reveal that ESG Performance does not significantly impact market performance, confirming that ESG-related information may not yet be fully integrated into investors' valuation assessments. Conversely, Profitability exhibits a statistically meaningful contribution to market performance, suggesting that companies with higher profitability are more likely to achieve higher market valuations. Meanwhile, Leverage shows no statistically significant influence on market performance.

Furthermore, the results demonstrate that Board Independence does not have a significant direct impact on profitability and does not show evidence of significantly moderate the relationship between ESG Performance and profitability. The bootstrap mediation analysis also provides evidence that Profitability does not serve as a mediating mechanism in the correlation between ESG Performance and market performance.

Overall, the findings suggest that conventional financial performance remains a more important determinant of market value than ESG performance or board independence among Indonesian listed companies during the study period. These findings imply that companies should integrate ESG initiatives and governance practices with strategies that generate measurable financial and operational outcomes rather than implementing them solely for disclosure purposes. For investors, profitability remains an important consideration in assessing firm value, while regulators and companies may need to improve the quality, relevance, and comparability of ESG information to enhance its usefulness in investment decisions. Future research should extend the observation period, consider industry-specific differences, and incorporate additional variables such as firm risk, corporate governance quality, investor sentiment, and ESG disclosure quality to provide a more comprehensive understanding of the mechanisms through which ESG performance influences financial and market outcomes.

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