

The Effect Of Environmental, Social, And Governance (ESG) Disclosure On Company Performance (Accounting, Financial, Operational, And Market) In Energy Sector Companies In Indonesia

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Abstract

This study aims to analyze the influence of Environmental, Social, and Governance (ESG) disclosure on company performance which includes accounting, financial, operational, and market performance of energy sector companies in Indonesia. This study uses a quantitative approach with secondary data obtained from financial statements and sustainability reports of 29 energy sector companies listed on the Indonesia Stock Exchange for the period 2022–2024. The measurement of ESG disclosure is based on the Global Reporting Initiative (GRI) indicators of the GRI 2, GRI 300, and GRI 400 standards. The company's performance is measured through Return on Assets (ROA), Return on Equity (ROE), Logarithm Natural Cost of Goods Sold (LNCOGS), and Logarithm Natural Market Capitalization (LNMKP), while the control variables used include Firm Age, Debt to Equity Ratio (DER), and Current Ratio (CR). Data analysis was carried out using the panel data regression method using Eviews 13. The results of the study show that ESG disclosure does not have a significant effect on the company's performance from accounting, financial, operational, and market aspects. These findings indicate that ESG disclosure in energy sector companies in Indonesia has not been able to make a real contribution to improving company performance during the study period.

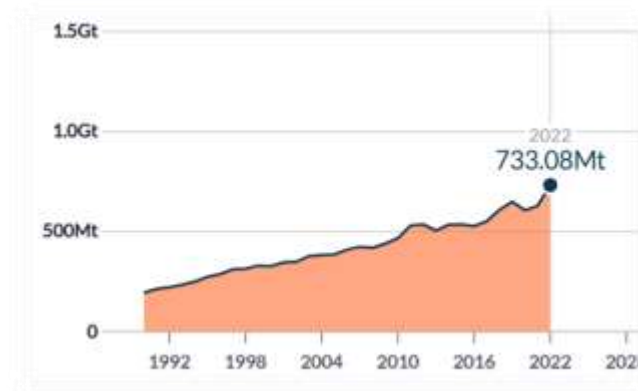
Keywords: ESG disclosure, accounting performance, financial performance, operational performance, market performance.



INTRODUCTION

Energy sector companies significantly contribute to environmental degradation through carbon emissions primarily carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) which trap heat in the atmosphere. In 2024, Indonesia emitted approximately 1,475.83 million metric tons of CO₂-equivalent, or 3% of global emissions, with the energy sector alone accounting for 733.08 million metric tons nearly 50% (Climate Watch, 2024). This heavy reliance on fossil fuels, especially coal, impedes national emission reduction targets and underscores the urgency of transitioning to renewable energy (Triani & Azy, 2025).

Figure 1. Carbon Emissions from Indonesian Energy Companies



To address this, Indonesia enacted Presidential Regulation No. 98/2021 on Carbon Economic Value (NEK), requiring high-emission firms to comply with emission caps via carbon trading, taxation, or quotas. While necessary, such compliance may reduce production capacity and profitability, potentially impairing corporate performance (Renata et al., 2024) and raising investor concerns about operational continuity (Pratiwi et al., 2025).

Concurrently, Financial Services Authority Regulation (POJK) No. 51/2017 mandates sustainability reporting for public companies, enhancing disclosure quality and investor trust in corporate governance (Pangestu et al., 2023; Margaretha & Mahadewi, 2024). In response, firms increasingly adopt Environmental, Social, and Governance (ESG) indicators to signal long-term resilience. ESG disclosure helps mitigate perceived risks, aligns with growing global demand for sustainable investing now exceeding USD 35 trillion (GSIA, 2022) and is associated with higher returns (PwC, 2022). Empirical evidence

supports this Bamel et al. (2025) find that ESG disclosure positively influences operational and market performance, with the Social and Governance dimensions showing the strongest impact across financial, accounting, and market metrics. Yet, research in Indonesia remains scarce, particularly on how ESG affects distinct performance dimensions within high-emission sectors like energy where investor scrutiny over sustainability is most acute.

Objectives

This study aims to examine whether ESG (Environmental, Social, and Governance) disclosure exerts a positive influence on four distinct dimensions of corporate performance: operational, accounting, financial, and market performance.

LITERATURE REVIEW

Stakeholder Theory

Stakeholder theory emphasizes that companies are accountable not only to investors but to all parties affected by their decisions and activities, including consumers, employees, government, local communities, and the environment (Freeman, 1984). In practice, the adoption of sustainability principles through ESG disclosure can strengthen a company's social legitimacy and stakeholder relationships. Gray et al. (2001) argue that a firm's long-term survival depends on stakeholder support. By communicating sustainability-related information, companies reaffirm their commitment to delivering long-term value to stakeholders. This transparency through both financial and non-financial disclosures enables firms to gain stakeholder backing while ensuring accountability for their actions.

Legitimacy Theory

Legitimacy theory posits that a company's continued existence relies heavily on societal acceptance of its operations. The theory is based on the assumption that organizational actions must align with prevailing societal norms, values, beliefs, and institutional expectations (Suchman, 1995). In the context of the energy sector which carries high environmental and social risks companies strategically use ESG disclosure to demonstrate their commitment to social and environmental responsibility. Thus, ESG reporting serves as a tool to maintain public trust by signaling that the firm adheres to societal norms and values, thereby safeguarding its operational legitimacy and long-term viability.



Environmental, Social, and Governance (ESG)

Environmental, Social, and Governance (ESG) represents a tripartite framework used to assess corporate sustainability. According to Shakil (2020), ESG encompasses environmental, social, and governance performance indicators that companies must address to achieve sustainability objectives. ESG-integrated investing has grown significantly in recent years. Firms that inadequately implement ESG practices may face adverse consequences, particularly in high-risk sectors with substantial environmental, social, or governance impacts. When companies integrate ESG into their investment strategies, they enable investors to make informed decisions based on a comprehensive view of corporate performance (Mohammad & Wasiuzzaman, 2021).

ESG Disclosure

ESG disclosure refers to a company's transparent communication of its sustainability performance across environmental, social, and governance dimensions. It has become increasingly critical due to growing demands from investors, stakeholders, and regulators for evidence of social responsibility and sustainable business practices. Informative ESG disclosures can enhance stakeholders' perception of a firm's long-term performance (Shi & Yao, 2025). However, discrepancies in disclosure standards across rating agencies often lead to inconsistent ESG assessments, creating confusion in evaluating corporate risk and potential. Consequently, the consistency and quality of ESG reporting significantly influence a company's market value and overall performance. Oluwakemi & Mishelle (2025) emphasize that ESG disclosure plays a vital role in investment decisions by strengthening market confidence in a firm's stability and long-term value. Their findings indicate that higher ESG transparency increases investor appeal and improves financial performance, supporting the view that ESG disclosure functions not merely as regulatory compliance but as an effective risk management strategy.

Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) is an international organization that develops widely adopted sustainability reporting frameworks. GRI aims to enhance transparency and accountability in non-financial disclosures related to environmental, social, and governance (ESG) issues. It provides standardized indicators known as GRI Standards that enable companies across sectors to report their sustainability impacts in a structured and comparable manner. Álvarez et al. (2019) note that GRI Standards offer a robust foundation for preparing social and environmental reports that reflect genuine corporate

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responsibility. Aljaway et al. (2022) further highlight that GRI adoption supports the integration of sustainability principles into corporate strategy and operations. This study employs GRI Standards 300, 400, and 2 to measure the three ESG dimensions as indicators of corporate performance. The following subsections detail ESG disclosure based on these GRI standards.

Corporate Performance

Corporate performance reflects the extent to which a company effectively manages its resources to achieve its strategic objectives. Evaluating corporate performance is crucial, as it informs stakeholders about the firm's ability to meet its financial goals and supports decision-making (Richard et al., 2009). Financial statements are among the most common tools for performance assessment, offering structured insights into a company's financial activities and facilitating performance analysis (Barth & Landsman, 2010). In this study, corporate performance is measured across four dimensions accounting performance (ROA), financial performance (ROI), operational performance (LNCOGS), and market performance (LNMKP).

METHODOLOGY

Research Approach

This study employs a quantitative approach using secondary data from financial statements and sustainability reports of energy sector companies listed on the Indonesia Stock Exchange (IDX) over the 2021–2024 period, sourced from www.idx.co.id, company websites, TradingView, [Investing.com](https://www.investing.com), and other public platforms. The sample was selected through purposive sampling based on GRI reporting compliance: from an initial pool of 91 energy firms listed on the IDX (as of 2025), only 29 consistently applied GRI standards in their sustainability disclosures from 2022 to 2024, resulting in a final sample of 29 firms and 87 firm-year observations (29 × 3 years). Data analysis was conducted using panel data regression in EViews 13, supported by descriptive statistics (mean, standard deviation, min, max), classical assumption tests, and hypothesis testing. Three estimation models were considered: the Common Effect Model (CEM), which assumes homogeneity across firms and time; the Fixed Effect Model (FEM), which accounts for entity-specific fixed differences via dummy variables; and the Random Effect Model (REM), which treats unobserved heterogeneity as random and uncorrelated with regressors, offering greater efficiency under valid assumptions particularly in heterogeneous samples with time-invariant characteristics.



RESULTS AND DISCUSSION**Results****Descriptive Statistics****Table 1. Descriptive Statistics Results**

	ROA	ROE	LNCOGS	LNMKP	ESG	LNAGE	DER	CR
Mean	0.132	0.228	29.563	29.786	0.697	3.388	1.120	2.306
Maximum	0.618	1.249	31.888	34.180	1.000	5.106	7.203	12.983
Minimum	-0.042	-0.340	26.117	25.580	0.280	2.398	0.059	0.596
Std. Dev.	0.134	0.243	1.634	1.902	0.218	0.557	1.155	2.241
Observations	87	87	87	87	87	87	87	87

The results indicate that the average values of ROA and ROE are positive, although the minimum values reveal that some firms reported negative performance, while the maximum values reflect firms with substantially higher performance evidenced by relatively high standard deviations, suggesting considerable variability across firms. In contrast, LNCOGS and LNMKP exhibit high mean values with relatively low standard deviations, indicating data homogeneity. The ESG variable shows a mean close to its maximum (0.697 out of 1.000), implying that most companies demonstrate relatively strong sustainability performance. LNAGE reflects a stable average firm age, with a narrow range between maximum and minimum values, resulting in low variability. Conversely, DER and CR display large standard deviations and wide gaps between their maximum and minimum values, indicating high heterogeneity that warrants careful consideration during analysis.

Panel Data Regression Model Selection**Chow Test****Table 2. Chow Test Results**

Probability	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
<i>Cross-section F</i>	0.000	0.000	0.000	0.000
<i>Cross-section Chi-square</i>	0.000	0.000	0.000	0.000

All p-values for both Cross-section F and Cross-section Chi-square statistics are less than 0.05 across all four performance measures (ROA, ROE, LNCOGS, LNMKP).



Thus, the null hypothesis of no entity-specific effects is rejected, supporting the use of the Fixed Effect Model (FEM) over the Common Effect Model (CEM).

Hausman Test

Table 3. Hausman Test Results

Probability	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
<i>Cross-section random</i>	0.026	0.0255	0.000	0.000

All p-values are below the 0.05 significance threshold, leading to the rejection of the null hypothesis that the Random Effect Model (REM) is consistent and efficient. This result further confirms that the Fixed Effect Model (FEM) is preferred.

Lagrange Multiplier (LM)

Table 4. Lagrange Multiplier (Breusch-Pagan) Test Results

Probability	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
<i>Breusch-Pagan</i>	0.000	0.000	0.000	0.000

The Breusch-Pagan test yields p-values of 0.000 for all models, which are less than 0.05, indicating the presence of significant individual effects and thus rejecting the Common Effect Model in favor of a model that accounts for cross-sectional heterogeneity either FEM or REM. However, since the Hausman test favors FEM over REM, the Fixed Effect Model (FEM) is ultimately adopted as the most appropriate estimator for all four performance regressions.



Classical Assumption Tests**Normality Test****Table 5. Normality Test Results (Jarque-Bera)**

Probability	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
<i>Jarque-Bera</i>	0.1	0.076	0.000	0.000

The Jarque-Bera p-values for accounting performance (ROA = 0.100) and financial performance (ROE = 0.076) exceed 0.05, indicating approximate normality. However, operational performance (LNCOGS = 0.000) and market performance (LNMKP = 0.000) fall below 0.05, suggesting non-normal distributions. Given that this study uses 87 observations well above the threshold of 30 the Central Limit Theorem applies. This theorem states that with sample sizes exceeding 30, the sampling distribution of the mean approximates normality regardless of the underlying population distribution, thereby allowing the normality assumption to be relaxed (Ajija et al., 2011).

Multicollinearity Test**Table 6. Multicollinearity Test Results (Correlation Matrix)**

Variabel	ESG	LNAGE	DER	CR
ESG	1	0.312	0.251	-0.251
LNAGE	0.312	1	0.0271	-0.147
DER	0.251	0.0271	1	-0.323
CR	-0.251	-0.147	-0.323	1

All pairwise correlation coefficients are below 0.95, confirming the absence of severe multicollinearity among the independent variables in the model.



Heteroskedasticity Test**Table 7. Heteroskedasticity Test Results (Glejser Test)**

Probability	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
C	0.0909	0.2118	0.9914	0.6748
ESG	0.6187	0.9353	0.9530	0.2879
LNAGE	0.1153	0.2375	0.9155	0.5876
DER	0.6710	0.0675	0.9363	0.2227
CR	0.8071	0.4145	0.9300	0.8910

All p-values for the Glejser test exceed 0.05 across all four performance models, indicating no evidence of heteroskedasticity in the regression equations.

Autocorrelation Test**Table 8. Autocorrelation Test Results (Durbin-Watson Statistic)**

Uji Autokorelasi	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
Durbin-Watson stat	2.023690	2.142588	2.039065	1.907757

All Durbin-Watson statistics fall within the acceptable range ($1.732 < d < 2.268$), indicating no significant positive or negative autocorrelation in any of the regression models.

Panel Data Regression Analysis**Table 9. Panel Data Regression Results (Fixed Effect Model)**

Coefficient	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
C	4.106	8.756	26.287	22.118



ESG	0.024	-0.0151	0.287	-1.057
LNAGE	-1.176	-2.508	0.912	2.337
DER	-0.021	-0.056	0.131	0.403
CR	0.008	0.019	-0.069	0.015

These coefficients reflect the estimated impact of each independent variable on corporate performance across the four dimensions under the FEM framework.

Hypothesis Testing

Coefficient of Determination (Adjusted R-Squared)

Table 10. Coefficient of Determination (Adjusted R-Squared)

<i>Adjusted R-Squared</i>	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
Hasil	0.79	0.78	0.98	0.96

The Adjusted R-squared value for accounting performance is 0.79, indicating that the independent variables collectively explain 79% of the variation in ROA, while the remaining 21% is attributed to other unmeasured factors. 4.5.1.2 Financial Performance (ROE) The Adjusted R-squared for financial performance is 0.78, implying that 78% of the variation in ROE is explained by the model's independent variables, with 22% attributable to external factors. 4.5.1.3 Operational Performance (LNCOGS) The Adjusted R-squared for operational performance is 0.98, meaning that 98% of the variation in LNCOGS is explained by the model, leaving only 2% to be influenced by other variables. 4.5.1.4 Market Performance (LNMKP) The Adjusted R-squared for market performance is 0.96, indicating that 96% of the variation in LNMKP is accounted for by the model, with 4% due to other unobserved factors.



F-Test (Simultaneous Significance Test)**Table 4.11. F-Test Results (Joint Significance)**

F-Statistic	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
Probability	0.000	0.000	0.000	0.000

Accounting Performance (ROA) With a p-value of $0.000 < 0.05$, the F-test confirms that all independent variables jointly exert a statistically significant effect on accounting performance (ROA). 4.5.2.2 Financial Performance (ROE) The p-value of $0.000 < 0.05$ indicates that the independent variables collectively have a significant impact on financial performance (ROE). 4.5.2.3 Operational Performance (LNCOGS) Given the p-value of $0.000 < 0.05$, the model confirms that independent variables significantly influence operational performance (LNCOGS). 4.5.2.4 Market Performance (LNMKP) The p-value of $0.000 < 0.05$ supports the conclusion that the independent variables significantly affect market performance (LNMKP).

t-Test (Partial Significance Test)**Table 4.12. t-Test Results (Partial Significance of ESG Variable)**

Hasil	Kinerja Akuntansi (ROA)	Kinerja Keuangan (ROE)	Kinerja Operasional (LNCOGS)	Kinerja Pasar (LNMKP)
Coefficient	0.024	-0.015	0.286	-1.057
Std. Error	0.095	0.176	0.369	0.582
t-Statistic	0.256	-0.086	0.776	-1.81
Probability	0.799	0.931	0.441	0.075
Keterangan	Tidak Signifikan	Tidak Signifikan	Tidak Signifikan	Tidak Signifikan

DISCUSSION**The Effect of ESG Disclosure on Accounting Performance**

The results in Table indicate that, partially, ESG disclosure exerts a negative or insignificant effect on the accounting performance (ROA) of Indonesian energy sector



firms. Thus, the findings do not support H1, which posits a positive relationship between ESG disclosure and accounting performance. Implementing ESG practices incurs additional costs, potentially reducing short-term financial efficiency and profitability. This suggests that while ESG is intended to enhance transparency and accountability, its impact does not yet directly reflect in short-term accounting metrics. These findings align with Bamel et al. (2025), who argue that in developing countries, ESG disclosure may negatively affect accounting performance due to limited resources, weak regulatory support, and market focus on short-term profitability. Grisales & Caracuel (2019) further note that integrating ESG into corporate strategy requires extra investment, pressuring short-term earnings. However, Ching et al. (2017) emphasize that ESG's benefits materialize over the medium to long term through enhanced investor trust, risk mitigation, and operational sustainability consistent with stakeholder theory, which acknowledges that social legitimacy and value creation require time. Therefore, this study reinforces the view that in Indonesia a developing economy ESG's influence on accounting performance remains indirect in the short run but holds long-term potential as regulations, market awareness, and supporting infrastructure mature.

The Effect of ESG Disclosure on Financial Performance

As shown in Table, ESG disclosure exhibits a negative or insignificant partial effect on financial performance (ROE) for Indonesian energy firms. Consequently, the results reject H2, which hypothesizes a positive link between ESG disclosure and financial performance. While ESG disclosure should theoretically boost investor confidence and reduce information asymmetry thereby strengthening ROE (Albitar et al., 2019) this is not evident in Indonesia's context. Developing economies like Indonesia still prioritize fundamental financial metrics over non-financial disclosures such as ESG. Rachmat et al. (2024) highlight that ESG implementation imposes additional costs, burdening short-term performance. Moreover, Indonesian investors remain relatively underdeveloped in their engagement with sustainability issues, limiting market reactions to ESG disclosures. This aligns with Bamel et al. (2025), who find an overall negative ESG-financial performance relationship in developing countries, and Naeem et al. (2022), who note stronger ESG effects in developed markets due to superior regulation, market pressure, and investor awareness. In sum, while ESG holds potential to improve financial outcomes, its impact remains statistically insignificant among Indonesian energy firms highlighting that ESG effectiveness is heavily contingent on national market development, investor sophistication, and regulatory frameworks.



The Effect of ESG Disclosure on Operational Performance

Table reveals that ESG disclosure has no significant or negative partial effect on operational performance (LNCOGS) for Indonesian energy companies. Hence, the findings do not support H3, which predicts a positive relationship. This contrasts with Buallay (2020), who found ESG practices reduce operational costs via energy efficiency and supply chain management. The discrepancy may stem from Indonesia's developing market context, where adopting ESG measures such as renewable energy or green technologies initially increases operational costs due to high capital investment needs. This finding is consistent with Friede et al. (2015), who stress that ESG's operational benefits are long-term, emerging only after firms adapt to new technologies, reduce fossil fuel dependency, and realign business processes with global sustainability standards. Therefore, this study contributes by demonstrating that, within Indonesia's developing market context, ESG disclosure does not yet translate into improved operational performance for energy firms. It underscores that ESG must be viewed as a long-term strategic investment, whose benefits materialize only after technological adaptation, regulatory maturity, and heightened market awareness.

The Effect of ESG Disclosure on Market Performance

Based on Table, ESG disclosure shows no significant or negative partial effect on market performance (LNMKP) for Indonesian energy firms. Thus, the results fail to support H4, which anticipates a positive relationship. This implies that ESG transparency has not yet become a decisive factor in shaping market valuation. The findings reflect Indonesia's capital market orientation toward conventional financial metrics, particularly in the energy sector, where non-financial disclosures like ESG remain secondary to investors' decision-making (Sari & Prihandini, 2025). This aligns with Abbasi et al. (2025), who observe that investors in developing markets tend to prioritize short-term financial returns over sustainability considerations. Contrary to Bamel et al. (2025) who report a generally positive ESG-market performance link in developing countries this inconsistency can be explained by institutional and regulatory differences. In Indonesia, ESG disclosure levels remain relatively low among energy firms, and there is insufficient regulatory pressure or investor demand to position ESG as a strategic tool for enhancing market value. Consequently, this study reinforces the notion that, for Indonesian energy firms, ESG is still perceived more as a compliance burden than a strategic asset for boosting market performance. Positive market impacts may emerge only with stronger regulatory support, rising investor awareness, and a more mature sustainability ecosystem.



CONCLUSION

The findings of this study indicate that ESG disclosure has no significant effect neither positive nor negative on accounting, financial, operational, or market performance of energy sector firms in Indonesia. This outcome can be attributed to several contextual factors: ESG integration is still perceived primarily as a cost-intensive investment rather than a strategic asset, which reduces short-term operational efficiency and effectiveness; regulatory support from the government remains limited; and investor awareness of sustainable investment practices in Indonesia is still relatively low.

SUGGESTIONS

Given these limitations, future research is recommended to extend the observation period to capture longer-term effects, which would provide clearer and more accurate insights into the relationship between ESG disclosure and corporate performance.

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