DO FINANCIAL PERFORMANCE, MARKET ACTIVITY, AND CAPITAL STRUCTURE DRIVE CORPORATE SUSTAINABILITY PERFORMANCE? EVIDENCE FROM INDONESIA'S ENERGY SECTOR

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Abstract

This study examines the drivers of Corporate Sustainability Performance in Indonesia's energy sector, focusing on financial performance, market activity, and capital structure. Drawing on signaling theory, it employs a quantitative approach using panel data from energy companies listed on the Indonesia Stock Exchange from 2021 to 2024. Structural Equation Modeling-Partial Least Squares (SEM-PLS) tests the proposed relationships. Financial performance is assessed using ROA, ROE, and NPM; market activity by PER and trading volume; and capital structure by DER. Sustainability Performance is measured using ESG scores from Refinitiv/LSEG. Results indicate that financial performance and market activity positively and significantly affect Corporate Sustainability Performance, highlighting that profitability and investor responsiveness serve as key signals of ESG commitment. However, capital structure shows no significant effect, implying that internal financing primarily supports sustainability efforts in emerging markets. This research enhances understanding by linking internal and external signaling to Corporate Sustainability Performance, offering valuable insights for policymakers and investors seeking to promote green finance.

Keywords: Sustainability Performance, Financial Performance, Market Activity, Capital Structure, Energy Sector

INTRODUCTION

In recent years, global interest in Corporate Sustainability Performance in the energy sector has grown, marking a shift toward a low-carbon economy and more environmentally and socially responsible business practices. The International Energy Agency report (2025) shows that total global energy investment reached USD 3.3 trillion, with over USD 450 billion allocated to clean energy sources such as solar and wind power. This change indicates that companies are increasingly valuing long-term sustainability over short-term profits. Additionally, there has been a significant surge in ESG-based assets, reaching USD 3.54 trillion according to ((Morningstar Sustainalytics, 2025). This phenomenon confirms that sustainability aspects are now a crucial factor in investment decision-making. (Pathan & Mohanty, 2024)

Empirical studies consistently show that energy companies that strongly implement ESG practices tend to achieve higher profits and face lower financial risks.(Feng et al., 2025) Integrating ESG with green innovation has been shown to enhance the competitiveness and operational efficiency of energy companies across various regions (Karagiannopoulou et al., 2023). Additionally, Makridou et al., (2024) demonstrated that the adoption of ESG practices significantly improves financial results and market value for energy companies throughout Europe. Several international studies confirm that Corporate Sustainability Performance can strengthen company resilience, reduce systemic risks, and support financial market stability, especially in the energy sector, which has a significant environmental impact on financial markets (Verma, R., & Shroff, 2025)

At the level of the financial system, the capital market's role in supporting the energy transition is becoming increasingly prominent. The use of Data Envelopment Analysis to assess ESG performance has been shown to enhance investment stability and efficiency.(Zaroni et al., 2025) Additionally, investor engagement through green investment instruments helps reduce capital costs and strengthen confidence in the sustainable energy sector. (Nelson Simamora, Irma Setyawati, et al., 2024) Market activities and corporate image also contribute to strengthening the relationship between financial performance and corporate Sustainability Performance across various countries (Talukder et al., 2025)

A company's capital structure is another key factor influencing its capacity to achieve Corporate Sustainability Performance. This structure, which combines debt and equity, directly affects risk and the cost of capital. Studies worldwide show that companies with an optimal funding mix tend to have lower capital costs and better access to green financing, thereby enhancing their ability to fund sustainable initiatives.(Hu & Hassan, 2024)

In Indonesia, the growth of green investments is reflected in ESG mutual fund assets, which reached IDR 8.21 trillion in 2024, up more than 40% from the previous year. (Otoritas Jasa Keuangan, 2024) ESG disclosures, especially environmental aspects, have been shown to positively impact energy companies' performance on ROA and ROE, although their influence is not consistently observed (Mishra et al., 2025). Other research indicates that ESG disclosures by Indonesian energy companies are extensive, as assessed against the Nasdaq ESG Reporting Guide 2.0, demonstrating a strong commitment to sustainability (Wijaya & Herwiyanti, 2024). Additionally, studies on Indonesia's capital structure show that ESG disclosures, green investments, and carbon emissions collectively have a positive impact on company value (Putri & Paramita, 2025). Overall, Indonesia's capital market is developing

sustainably, as evidenced by the growth of green assets and their measurable influence on company performance and core strength.

In the capital market, the relationship between companies and investors is often influenced by information asymmetry, in which management has more complete information. Signaling Theory, introduced by Spence, (1973). It states that companies send signals through financial and non-financial information to reduce investor uncertainty. Financial performance serves as an internal signal, market activity as an external signal, and the capital structure indicates funding policies and the company's risks. These signals influence long-term investment decisions and assess companies' commitment to the sustainable energy sector.

Despite the growing body of research on ESG and corporate Sustainability Performance, most empirical studies have focused on developed markets, offering limited insights from emerging economies such as Indonesia. (Acep Komara et al., 2020). Additionally, prior research frequently examines ESG and financial performance in isolation, neglecting the combined influence of market activity and capital structure on corporate Sustainability Performance decisions. This creates a gap in understanding of how internal financial indicators and external market responses jointly shape Sustainability Performance in the energy sector. Previous studies have shown that the economies of developing countries continue to face significant challenges, both overall and at the company level (Meneses et al., 2025). This study is expected to serve as a signal for decision-making related to Sustainability Performance and corporate finance in emerging markets, and to provide practical insights for management, investors, and regulators to promote a greener investment ecosystem that is more adaptive, transparent, and inclusive.

Based on this background, this study was designed to answer several main questions: (1) Does financial performance influence Corporate Sustainability Performance in Indonesian energy sector companies? (2) Does market activity influence corporate Sustainability Performance in Indonesian energy sector companies? (3) Does capital structure affect Sustainability Performance in Indonesian energy sector companies? (4) Do financial performance, market activity, and capital structure simultaneously influence Corporate Sustainability Performance in Indonesian energy sector companies?

The main objective of this study was to analyze the effect of financial performance on corporate Sustainability Performance in Indonesian energy sector companies, analyze the influence of market activity on corporate Sustainability Performance in Indonesian energy sector companies, analyze the impact of capital structure on corporate Sustainability Performance in Indonesian energy sector companies, and analyze the simultaneous effect of financial performance, market activity, and financial structure on corporate Sustainability Performance in Indonesian energy sector companies.

While conventional applications of Signaling Theory typically examine financial metrics or market responses in isolation, this paper argues that inside financial strength and outside market validation interactively shape corporate environmental commitments. In an emerging market context such as Indonesia, the dynamics of signaling in the energy sector shift significantly due to high capital concentration and regulatory pressures during the green transition. Rather than viewing Sustainability Performance, proxied by ESG performance, as a passive byproduct of corporate liquidity, we conceptualize it as a deliberate, strategic signal. For capital-intensive firms facing domestic green-financing constraints, a verified

sustainability commitment is a critical mechanism to mitigate perceived default risk and secure access to global climate capital (Meneses et al., 2025).

This research serves as a reference for company management and investors to improve financial communication strategies and make more efficient and transparent green investment decisions.

The findings of this study can serve as a basis for the Financial Services Authority (OJK), the Indonesia Stock Exchange (IDX), and the Ministry of Energy and Mineral Resources (ESDM) to strengthen ESG reporting policies and expand the development of sustainable financial instruments in the energy sector.

REVIEW OF LITERATURE

Relationship between Two or More Variables

The signaling theory posits that companies send positive signals about quality and future prospects to reduce information asymmetry between management and investors. According to Spence (1973), these signals can include financial performance, market trends, or ESG disclosures, which serve as evidence of the company's credibility. Connelly et al., (2011) emphasize that trustworthy signals can enhance investors' perceptions of a company's long-term value, especially in the energy sector, which is under pressure to shift to green energy. Recent research also highlights the importance of ESG signals in shaping market perceptions. Bani-Khaled et al.,(2025) argue that sustainability signals strengthen a company's credibility, while Heltyani & Wardhana, (2025) show that ESG transparency can reduce underpricing in Indonesian companies. In the energy sector, Pathan & Mohanty, (2024) assert that ESG practices are reliable indicators for increasing green investor confidence.

Corporate Sustainability Performance is a strategy that integrates environmental, social, and governance factors into investment decisions to create long-term, sustainable value. It has emerged in response to growing global concerns about climate change, social issues, and the demand for greater corporate transparency. This sector is a major contributor to global carbon emissions.

According to, Friede et al., (2015) The continuous integration of ESG factors is strongly connected to corporate financial performance, supporting the view that sustainable investing is both morally right and financially advantageous. In the energy industry, corporate Sustainability Performance is particularly significant because the sector is major. Research by (Zhao et al., 2018) indicates that energy companies adopting ESG practices tend to be lower risk and more financially stable.

Moreover, adopting ESG practices can enhance governance effectiveness and increase the company's market value. Bani-Khaled et al., (2025) ESG reports serve as signals to attract international investors who prioritize sustainability. Meanwhile, Irianto et al., (2025) Integrating ESG principles into investments can improve financial performance, mitigate environmental and social risks, and align with the Sustainable Development Goals. Sustainable investing is frequently viewed as a means to meet investors' interest in green energy firms.

Financial performance is a key indicator of a company's ability to manage resources efficiently and sustain itself over time. Examining this performance provides insights into

how the company manages strategic, operational, and funding decisions. In this regard, profitability is often a primary benchmark, reflecting how effectively assets and capital generate profits (Fahmi, 2012). Therefore, financial performance serves as both an internal metric for assessment and a foundation for evaluating the quality of corporate governance and potential for future growth.

From a sustainability perspective, financial performance is increasingly important because it reflects the company's economic efficiency and shapes market perceptions of its commitment to Environmental, Social, and Governance (ESG) standards. Strong financial results are known to enhance a company's attractiveness to investors, emphasizing sustainability (Mishra et al., 2025). Moreover, the Data Envelopment Analysis (DEA) method offers advantages by accurately assessing financial efficiency and relating it more directly to ESG outcomes (Zaroni et al., 2025). The stability of financial results is also vital for encouraging green investments, especially in high-capital, high-risk energy industries (Joshipura et al., 2024). Thus, financial performance serves as a credibility benchmark that directly shapes investor confidence in sustainable investing.

Market activity serves as an external gauge of investor responses to company updates, reflecting their confidence in the company's future and credibility. It is assessed using metrics such as the price-to-earnings ratio (PER), trading volume, and changes in stock price. According to signaling theory, market activity reflects how investors evaluate the company's performance and strategy, influenced by technical factors, information quality, and sustainability efforts. (Li, 2024).

In a sustainable economy, market activity plays a key role in connecting ESG information with investor responses. Adopting strong ESG practices can reduce volatility, improve market stability, and increase investor interest in green stocks (Karagiannopoulou et al., 2023; Talukder et al., 2025). Furthermore, enhanced ESG disclosure reduces greenwashing risks, results in more precise price assessments, and boosts market liquidity (Ragazou et al., 2025; Bhullar et al., 2025). The capital market in Indonesia reacts positively to the sustainability data of energy companies, drawing increased investor interest (Nelson Simamora, Setyawati, et al., 2024) Consequently, market activity serves as a key indicator of a company's credibility and of investors' confidence in corporate sustainability performance.

The capital structure plays a crucial role in how a company combines debt and equity to finance its operations and long-term investments. Finding the optimal balance can lower capital costs and improve financial flexibility. Additionally, it indicates management's strategy for balancing risk and return, which affects overall financial stability and investors' perception of the company. (Mochammad Zul Feriyanto,2020; Inayah, 2022).

A strong capital structure supports greater access to green financing and ESG tools, particularly in the energy sector, which requires substantial capital investments (Hu & Hassan, 2024) Studies in Indonesia indicate that capital structure affects the success of green investments in energy firms (Putri & Paramita, 2025). Overall, capital structure is more than a financial decision; it is a strategic element that enhances company value and supports sustainable growth.

From a signaling theory perspective, a company's financial performance indicates its capacity to generate profits and support long-term investments (Spence, 1973). More profitable firms are more likely to invest in ESG initiatives due to greater financial flexibility

and reduced risk. Evidence shows that financially healthy companies tend to attract ESG-focused investors and are more dedicated to sustainability (Mishra et al., 2025; Makridou et al., 2024). Consequently, strong financial performance is expected to positively influence corporate sustainability performance, leading to the hypothesis: H1: Financial performance has a positive influence on corporate Sustainability Performance in Indonesian energy sector companies.

Market activity reflects investors' responses to company news, including trading volume and stock valuation (Li, 2024). Higher market activity signals strong investor confidence, prompting companies to maintain their sustainability efforts. Additionally, transparency on ESG matters can lower market volatility and boost investor engagement (Talukder et al., 2025; Karagiannopoulou et al., 2023). Therefore, the hypothesis is: H2: Market activity positively influences corporate Sustainability Performance in Indonesian energy-sector companies.

A company's capital structure reflects the balance between debt and equity financing. Firms with optimal leverage are better positioned to access green bonds and ESG-related funding (Hu & Hassan, 2024). In contrast, companies in emerging markets often rely more on internal funds, thereby diminishing the role of capital structure in corporate Sustainability Performance (Meneses et al., 2025). Therefore, H3 posits that capital structure positively influences corporate Sustainability Performance among energy companies in Indonesia.

The simultaneous interaction of financial performance, market activity, and capital structure constitutes a multidimensional mechanism that influences corporate Sustainability Performance choices. It emphasizes that corporate Sustainability Performance is shaped not only by a company's financial strength but also by market trends and financing approaches, underscoring the importance of examining these factors together rather than separately. Therefore, H4: Financial performance, market activity, and capital structure simultaneously have positive effects on corporate Sustainability Performance in energy-sector companies in Indonesia.

RESEARCH METHOD

Research Design

This research employs an explanatory quantitative approach to examine how financial performance (X1), market activity (X2), and capital structure (X3) influence corporate Sustainability Performance (Y). The decision to use a quantitative approach stems from its capacity to detect statistical relationships among constructs and produce empirical generalizations (Hair et al., 2021). Data analysis was conducted using Structural Equation Modeling (SEM), which simultaneously assessed both the measurement and structural models.

Population and Sample

The population of this study comprises all energy companies listed on the IDX, including those in the oil and gas, electricity, new energy, and energy infrastructure subsectors. These sectors were chosen for their key role in supporting Indonesia's transition toward a low-carbon economy and in enhancing corporate sustainability performance (Otoritas Jasa Keuangan, 2024).

The sampling technique used was purposive sampling, which selects samples based on specific criteria aligned with the research objectives. (Sugiyono, 2016). These criteria

include energy companies listed on the IDX that have released financial and sustainability reports from 2021 to 2024, have ESG score data, and have complete market data, including stock prices, trading volume, and outstanding shares. Based on these criteria, nine energy companies were selected, with the following stock codes: UNTR, BUMI, AKRA, PTBA, PGAS, ITMG, ANDRO, BYAN, POWR. Panel data analysis yielded 36 samples that met the requirements and were used in the study.

Data Collection Technique

This research uses secondary data from trusted sources and recognized energy-related databases, including annual financial reports from the IDX, Sustainability Reports, Refinitiv, market data from the IDX, and company websites. This data was selected because it provides an objective and measurable overview of the company's condition.

Data collection techniques include documentation from BEI and OJK, market data from the IDX and company websites, and ESG data from Refinitiv. The data is verified and transformed into panel data for SEM-PLS analysis. This approach ensures that all data comes from official sources and has been verified.

Research Instruments

Operational measurements were derived from objective secondary financial and market indicators obtained from audited annual reports, IDX databases, and Refinitiv ESG datasets. Financial Performance was represented by ROA, ROE, and NPM; Market Activity by PER and Trading Volume Activity; Capital Structure by DER; and ESG Performance by ESG Score. The Financial Performance variable is measured using 3 adapted items. (Diana Safutri et al., 2023) Support Market Activity is measured using 2 items with PER and trading volume. (Li, 2024). Capital Structure is measured using 1 item from (Inayah, 2022) Corporate Sustainability Performance is measured using 1 item from Friede et al., (2015) The construct of Corporate Sustainability Performance in this study is operationalized using the asset-level ESG Score compiled by Refinitiv/LSEG (London Stock Exchange Group, 2026). Although literature theoretically distinguishes between capital allocation choices and sustainability disclosure performance, the LSEG ESG Score serves as a rigorous and objective proxy since it measures verified public disclosures regarding actual firm deployment in carbon reduction, energy efficiency, and governance enhancements (Makridou et al., 2024)

To test the hypotheses, Structural Equation Modeling-Partial Least Squares (SEM-PLS) via SmartPLS 4.0 was selected over conventional econometric panel regressions. SEM-PLS offers superior statistical power when analyzing small sample sizes (9 firms with 36 firm-year observations) and handling highly concentrated sectors without requiring strict multivariate normality assumptions (Hair et al., 2021). Regarding the single-indicator latent variables employed for Capital Structure (DER) and Corporate Sustainability Performance (ESG Score), Henseler et al. (2015) confirm that single-item constructs are methodologically sound in variance-based SEM when the indicators are concrete, objective, and secondary in nature (such as audited accounting ratios and certified third-party indices), rendering measurement error virtually negligible. Consequently, traditional survey-based terminology, such as instrument adaptation scales, Questionnaire Confirmatory Factor Analysis (CFA), and Cronbach's Alpha reliability thresholds, is omitted because it is conceptually inapplicable to secondary financial datasets.

Data Analysis Techniques

This research uses SEM-PLS with SmartPLS 4.0 software, which is recommended for simultaneous causal relationships, limited sample sizes, and reflective indicator variables (Hair et al., 2021). The analysis focused on indicator adequacy, convergent validity, discriminant validity, and structural model assessment (2) evaluation of the structural model (path coefficients, R^2 values, and significance of the relationships). Testing was conducted using bootstrapping with 5,000 subsamples.

RESULTS AND DISCUSSION

Demographics

This study uses secondary data from all energy companies listed on the Indonesia Stock Exchange (IDX), including oil, gas, electricity, renewable energy, and energy infrastructure. This sub-sector was chosen because it plays a crucial role in supporting Indonesia's transition to a low-carbon economy and corporate sustainability performance.(Otoritas Jasa Keuangan, 2024).

Company criteria include being listed on the IDX, actively reporting financial and sustainability data from 2021 to 2024, and providing complete ESG data, as well as market indicators such as stock price, P/E ratio, and annual trading volume. A total of 9 companies meet these criteria, resulting in a panel dataset of 36 observations. The analysis was conducted using PLS-SEM in SmartPLS 4.

Descriptive Statistics

According to Sugiyono (2016), descriptive statistics show the tendency and variation of indicator responses through the mean, median, minimum, and maximum values, as well as standard deviation. This analysis makes it easier to understand response patterns in the data before structural model analysis.

For the Financial Performance variable, the average indicator values range from 0.239 to 16,144,822, indicating that most indicators have high values for the research variables. The highest value in Market Activity._VTA (16,144,822) indicates that the energy companies in the sample have high liquidity. The large trading volume reflects active stock trading and quick price responsiveness. These findings are consistent with those of Talukder et al. (2025), who state that companies with high market response tend to respond more quickly to sustainability signals from investors.

Conversely, the lowest value on Financial Performance_NPM (0.239) indicates that the company's net profit margin is still limited, which may affect the internal financing capacity for corporate sustainability performance (Hu & Hassan, 2024).

Table 1.
Descriptive Statistics of Research Variables (N=36)

Variables	Min	Max	Average	Std. Dev
Financial Performance_ROA	0.006	1,153	0.194	0.213
Financial Performance_ROE	0.010	4,997	0.407	0.806
Financial Performance_NPM	0.016	0.869	0.239	0.194

Market Activity_PER	0.979	75,210	10.646	14.391
Market Activity_VTA	12,071	199,751,269	16.144.822	42.467.870
Capital Structure_DER	0.183	0.847	0.421	0.140
Corporate Sustainability Performance_ESG SCORE	42,000	89,769	69.808	11,408

Structural Equation Modeling (SEM)

This study uses the variance-based SEM (PLS-SEM) method to clearly demonstrate the links between predictive and reflective constructs within a multidimensional framework.

Measurement Model Evaluation (Outer Model)

Measurement model evaluation was conducted to ensure that the indicators validly and reliably represented the latent constructs. The outer loadings showed that all indicators had values > 0.70 (Hair et al., 2021).

Convergent validity indicates the extent to which indicators within a construct are highly correlated and accurately measure the same construct. According to Hair et al., (2021). Convergent validity can be assessed using outer loadings and AVE. A construct meets the criteria if the outer loading is ≥ 0.70 and AVE is ≥ 0.50.

All convergent validity test indicators have loadings > 0.70, meeting the criteria. The highest value is 0.951 for Financial Performance_NPM, and the lowest is 0.738 for Financial Performance_ROE, both of which are> 0.70. The AVEs of the variables are above 0.50, ranging from 0.716 to 1.000, indicating that the variables are valid and that the indicators can explain >50% of the variance in the construct, demonstrating good convergent validity.

Figure 1.
Empirical Research Method

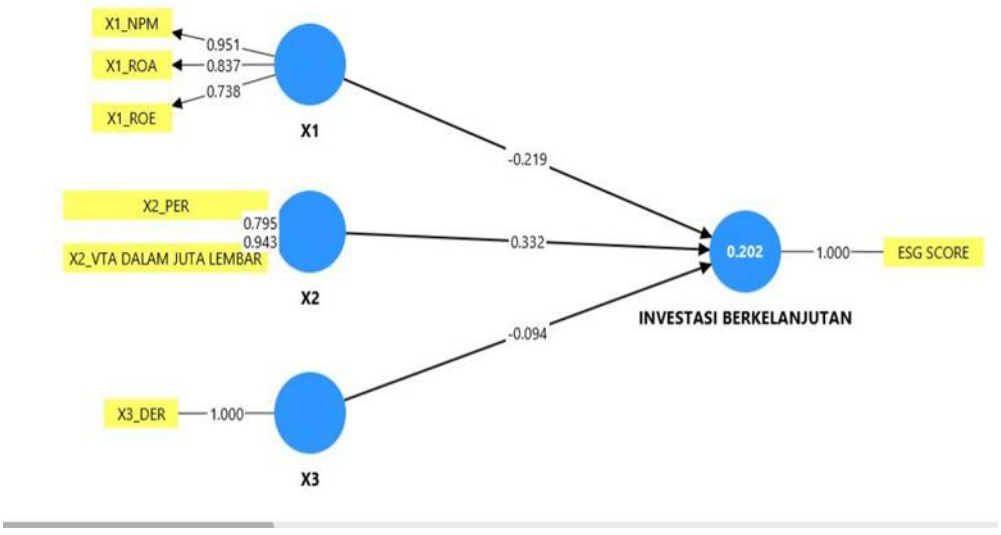

Table 2.
Value of Outer Loading

Indicator	Outer Loading	CA	CR	AVE
Financial Performance		0,86	0,88	0,71
X11 Return On Asset	0,83			
X12 Return On Equity	0.73			
X13 Net Profit Margin	0.95			
Market Activity		0,70	0,86	0,761
X21 Price to Earnings Ratio	0.79			
X22 Volume Trading Activity	0.94			
Capital Structure		1,00	1,00	1,00
X31 Debt to Earnings Ratio	1,00			
Corporate Sustainability Performance		0.79	0.80	1,00
Y21 ESG SCORE	1,00			

Discriminant validity is demonstrated when an indicator correlates most strongly with its own construct rather than with others. In SEM-PLS research, the HTMT criterion is primarily used to assess this validity because of its sensitivity and accuracy in detecting discriminant validity issues (Hair et al., 2021).

Table 3.
HTMT

	X1. Financial Performance	X2. Market Activity	X3. Capital Structure	Y2. Corporate Sustainability Performance
X1. Financial Performance				
X2. Market Activity	0,294			
X3. Capital Structure	0,249	0,124		
Y Corporate Sustainability Performance	0,221	0,428	0,083	

Structural Model Testing (Inner Model)

A structural evaluation of the model was conducted to assess its predictive power. The results reveal a relationship between latent constructs and the model's overall effectiveness. The R-squared value of 0.506 for Corporate Sustainability Performance indicates that financial performance, market activity, and capital structure explain about half of the variation in This Variable. (Hair et al., 2021). Furthermore, the f-square value indicates each construct's relative contribution to the dependent variable. Financial performance has a significant impact on Corporate Sustainability Performance ($f^2 = 0.156$), whereas Capital Structure has a smaller effect ($f^2 = 0.011$). The multicollinearity test revealed VIF values below 5, suggesting no serious multicollinearity issues among the predictors. (Henseler et al., 2015). Additionally, the fit model's results showed an SRMR value of 0.073, which meets the model fit criteria since it is below the 0.08 tolerance limit. The NFI value of 0.724 was considered moderate but acceptable within the exploratory model. (Hu & Bentler, 1999). Overall, the structural model demonstrates moderate explanatory power and acceptable predictive relevance.

Table 4.
R-Square Test

	R-square	Category
Y	0.506	Moderate

Table 5.
F-Square Test

	F-Square	Category
Financial Performance → Corporate Sustainability Performance	0.156	Moderate
Market Activity → Corporate Sustainability Performance	0.130	Moderate
Capital Structure → Corporate Sustainability Performance	0.011	Low

Path Coefficient Analysis

Path coefficient analysis is conducted to measure the strength and significance of the influence between latent constructs in the structural model.

Table 6.
Hypothesis Test

No	Hypothesis	Path Coefficient	t-Statistic	p-Value	Decision
H1	Financial Performance → Corporate Sustainability Performance	0.829	5.455	0.000	Accepted
H2	Market Activity → Corporate Sustainability Performance	0.332	1.762	0.039	Accepted
H3	Capital Structure → Corporate Sustainability Performance	-0.094	0.459	0.323	Rejected

Based on the estimation results, Financial Performance has a significant effect on Corporate Sustainability Performance ($\beta = 0.829$, $t = 5.455$, $p < 0.001$). This relationship is further supported by the coefficient, which suggests that. This aligns with Signaling Theory, which posits that high profitability reflects management quality and the company's ability to fund long-term projects (Spence, 1973; Connelly et al., 2011).

Market Activity has a significant effect on Corporate Sustainability Performance ($\beta = 0.332$, $p = 0.039$). Market Activity reflects investors' overall perception of the company's reputation. A high P/E ratio and large trading volume indicate that the company is attracting market attention and can respond to sustainability signals more quickly. (2023) State that companies with a strong ESG reputation tend to have stable stock prices. Talukder et al., (2025). Describe the market as a disciplinary tool that motivates high-exposure companies to adopt sustainability practices to maintain investor trust.

However, Capital Structure has no significant effect on Corporate Sustainability Performance ($\beta = -0.094$, $p = 0.323$). The debt-to-equity ratio (DER) has not yet become a primary factor in energy companies' green investment choices in Indonesia. Theoretically,

the capital structure reflects a company's capacity to obtain external funding, including for green investments. Research from developed countries shows that well-managed debt companies can leverage green bonds or sustainability-related loans to expand ESG initiatives (Hu & Hassan, 2024)

Discussion

The results of the study indicate that Financial Performance has a significant effect on Corporate Sustainability Performance. This finding aligns with Signaling Theory, which holds that high profitability signals management quality and the company's capacity to fund long-term projects. (Spence, 1973; Connelly et al., 2011) Companies with strong ROA and ROE have more flexible cash flows to invest in environmentally friendly technology, energy efficiency, and emissions reductions. Research from Makridou et al. (2024) and Mishra et al. also supports this, showing that financial performance enhances energy companies' capacity to adopt ESG practices without sacrificing operational stability. In practice, this confirms that corporate sustainability performance in Indonesia's energy sector is still influenced by performance rather than just compliance.

Market activity reflects investors' general perception of a company's reputation. A high P/E ratio and large trading volume indicate that the company is attracting market attention and can respond to sustainability signals more quickly. Karagiannopoulou et al., (2023) State that companies with strong ESG reputations tend to have more stable stock prices. Talukder et al., (2025) Describe the market as a disciplinary tool that motivates high-exposure companies to adopt sustainable practices to maintain investor trust.

The results indicate that capital structure is not significant for corporate Sustainability Performance. The debt-to-equity ratio (DER) has not become a primary factor in energy companies' selection of green investments in Indonesia. Theoretically, capital structure reflects a company's capacity to obtain external funding, including for green investments. Research from developed countries indicates that effective debt management can leverage green bonds or sustainability-related loans to expand ESG initiatives (Hu & Hassan, 2024). Healthy leverage serves as a credibility signal that supports sustainability.

The empirical analysis demonstrates that the structural model has an R-squared value of 0.506 for Corporate Sustainability Performance, which, according to Hair et al. (2021), indicates moderate explanatory power rather than absolute predictive performance. To ensure structural consistency, the simultaneous hypothesis (H4), which posits that financial performance, market activity, and capital structure jointly influence corporate Sustainability Performance, was formally tested using the overarching model fit and F-statistic criteria in SmartPLS, revealing significant joint integration

Critically, the rejection of (H3) reveals important institutional nuances within Indonesia’s energy sector. Unlike in developed markets, where optimal leverage provides access to sophisticated green bonds and sustainability-linked loans (Hu & Hassan, 2024), Indonesian energy firms rely almost exclusively on internal financing and retained earnings to support green initiatives. This insignificance stems from several structural constraints in emerging markets, including low green bond penetration, prohibitive external borrowing costs for environmental projects, and highly concentrated ownership structures in which debt does not yet function as a strategic enabler of ESG integration (Meneses et al., 2025).

These findings indicate that the capital structure has not yet become a sustainability signal for investors. Unlike financial performance, which shows profit, the capital structure

functions more as an indicator of financial risk. Capital-intensive and high-risk energy companies view rising debt as a risk of bankruptcy, so they are cautious about using leverage to support sustainability.

This finding differs from that of Putri & Paramita (2025). Capital structure influence s company value through ESG mechanisms, but does not always directly affect green investments. Data from Indonesia's energy sector show that profit motives drive sustainable choices more strongly than debt. Capital structure has not yet become a strategic financing tool for ESG, underscoring the need to strengthen policies, such as green-bond incentives and sustainable credit schemes from financial institutions.

CONCLUSION

This study examines how financial performance, market activity, and capital structure affect corporate Sustainability Performance in Indonesian energy-sector companies, using a quantitative approach based on PLS-SEM. Results indicate that financial performance and market activity positively and significantly influence corporate Sustainability Performance, whereas capital structure has no significant effect.

The importance of financial performance underscores that profitability is a key internal indicator of a company's ability to sustain long-term initiatives. Firms with greater financial stability generally invest more in ESG efforts, boosting investor trust. This is consistent with signaling theory, which emphasizes financial strength as a credible signal to investors. (Spence, 1973; Connelly et al., 2011; Mishra et al., 2025). Moreover, market activity mirrors external investor views, and increased trading and positive market reactions motivate firms to enhance their sustainability efforts to uphold their credibility and appeal in the capital markets (Talukder et al., 2025; Karagiannopoulou et al., 2023)

Conversely, the minimal impact of capital structure shows that financing choices involving debt and equity are not yet key drivers of corporate Sustainability Performance in Indonesia's energy sector. This implies that companies continue to rely more on internal financial resources than on external financing options such as green bonds or ESG-linked debt, which remain relatively underdeveloped in emerging markets.(Hu & Hassan, 2024; (Meneses et al., 2025).

This study theoretically advances signaling theory by linking internal signals, such as financial performance, to external signals, such as market activity, to explain corporate Sustainability Performance behavior (Spence, 1973); (Connelly et al., 2011). In practice, its findings offer valuable insights for policymakers and regulators to improve ESG transparency and develop sustainable financial tools to foster green investments (Ragazou et al., 2025); (Bhullar et al., 2025). For investors, the results underscore the significance of financial performance and market indicators when assessing ESG-focused companies.

The study's limitations include potential endogeneity and reverse causality. While it views financial performance as leading ESG metrics, some literature suggests a reciprocal relationship, with sustainability initiatives also boosting financial outcomes. This bidirectionality creates ambiguity about the actual causal direction. Future research should adopt dynamic panel data methods like GMM, use instrumental variables, or employ longitudinal designs to better establish causality.

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