THE EFFECT OF GREEN ACCOUNTING IMPLEMENTATION, CARBON EMISSION DISCLOSURE, AND SUSTAINABILITY REPORT DISCLOSURE ON FIRM VALUE

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Abstract

This study investigates the impact of green accounting implementation, carbon emission disclosure, and sustainability report disclosure on firm value among energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The research is grounded in stakeholder, legitimacy, and agency theories, which suggest that companies practicing transparency in environmental and sustainability reporting can positively influence their perceived value. Using quantitative methods and Partial Least Squares (PLS) analysis, this study examines how these disclosures contribute to a firm's market value as perceived by investors, especially in a sector significantly contributing to carbon emissions in Indonesia. The findings reveal that while green accounting practices and sustainability report disclosures positively affect firm value by enhancing transparency and credibility, carbon emission disclosures show inconsistent results in influencing firm value.

Keywords: Green Accounting, Carbon Emission Disclosure, Sustainability Report, Firm Value

INTRODUCTION

In recent decades, the world has seen a significant increase in climate change and environmental degradation issues. Human activities have contributed to rapid warming of the atmosphere, oceans, and land, with widespread and accelerated changes. The Intergovernmental Panel on Climate Change (IPCC, 2023) highlights that global temperatures have increased more than anticipated, with certain climate system aspects undergoing unprecedented shifts for centuries or even millennia. The World Meteorological Organization (WMO, 2024) predicts a high likelihood that global temperatures will set new records within the next five years, driven by rising greenhouse gas concentrations and El Niño events. This underscores the urgent need for stronger global efforts to combat climate change and reduce its impact on health, food security, water management, and the environment (UN News, 2023).

In Indonesia, the climate change issue has become a focal concern, particularly given that the country is one of the world's largest carbon emitters, primarily due to land use changes and deforestation (World Bank, 2023). In response, the Indonesian government enacted Presidential Regulation No. 98/2021, establishing a carbon economic value framework to meet the country's Nationally Determined Contribution (NDC) targets under the Paris Agreement. Additionally, the OJK (Financial Services Authority) mandates public companies to publish sustainability reports to enhance transparency and accountability (CNN Indonesia, 2023). These regulations reflect Indonesia's commitment to sustainable growth and responsible environmental practices.

For investors, corporate sustainability factors like carbon emissions, green accounting, and sustainability reporting have become increasingly relevant due to growing environmental concerns and social activism (Noor & Ginting, 2022). The adoption of green accounting—accounting for environmental costs associated with business operations—has been shown to influence corporate value positively, though some studies show mixed results (A. D. Lestari & Khomsiyah, 2023). Furthermore, carbon emission disclosure is seen as a crucial measure of corporate governance, potentially enhancing corporate value (Cahyani & Gunawan, 2022). Likewise, sustainability reports, which detail financial and non-financial

performance, can build public trust and boost corporate value, although their impact has also been debated in various studies (Dwi et al., 2020; Rizki et al., 2019)

This research focuses on the energy sector in Indonesia—a major carbon emitter—to examine the effects of green accounting practices, carbon emission disclosure, and sustainability reporting on corporate value. Given inconsistent findings in prior studies, this study will provide insights into the effectiveness of environmental policies in the energy sector and how companies can enhance their transparency and accountability on social and environmental fronts.

REVIEW OF LITERATURE

Green Accounting

Green accounting, also referred to as environmental accounting, integrates environmental costs into financial statements, reflecting a company's dedication to sustainable practices. According to Bell and Lehman (1999), green accounting includes recording, evaluating, and disclosing costs associated with environmental protection activities, thus helping companies manage environmental impact in financial terms. Lako (2018) emphasizes the role of green accounting in fostering sustainability by including social, environmental, and economic factors, which are essential for achieving a holistic view of a company's performance.

Carbon Emission Disclosure

The disclosure of carbon emissions is a critical step toward corporate environmental responsibility, as it addresses the global urgency of reducing greenhouse gases. Emission disclosures reveal the amount of greenhouse gases emitted and the measures taken by companies to minimize their environmental footprint. According to Choi et al. (2013), carbon emissions disclosure falls into three scopes: direct emissions from company-owned sources (Scope 1), indirect emissions from electricity usage (Scope 2), and other indirect emissions associated with the company’s supply chain (Scope 3).

Sustainability Report

Sustainability reporting encompasses financial and non-financial information about a company’s environmental, social, and governance (ESG) practices. The Global Reporting

Initiative (GRI) standards serve as a common framework for these disclosures, helping companies communicate their environmental and social impact (Martani et al., 2016). According to Adams et al. (2022), sustainability reporting is not only about transparency but also serves as a tool for companies to align their activities with global sustainability goals, such as the United Nations Sustainable Development Goals (SDGs).

RESEARCH METHOD

This research adopts a quantitative method using secondary data from annual and sustainability reports of energy companies listed on the BEI from 2018-2023. A sample of 16 companies was selected using purposive sampling. The data used is a type of secondary data obtained from the company's annual report and company sustainability report. This research analysis technique uses Partial Least Squares (PLS).

RESULTS AND DISCUSSION

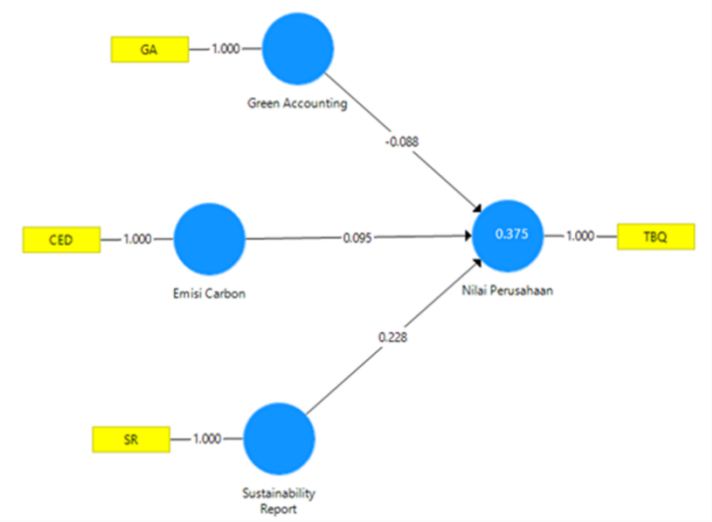

Figure 1
Measurement Model Scheme (Outer Model)
Source: Secondary Data Processed, 2024

Convergent validity assesses the degree to which indicators of a construct are strongly correlated, confirming they effectively measure the same underlying concept. Convergent

validity can be measured using Loading Factor and Average Variance Extracted (AVE) values to determine the alignment between latent variables and their observed indicators.

Table 1
Loading Factor Value

Indicator	Laten Variabel	Loading Factor	Description
GA	Green Accounting	1,000	Valid
CED	Carbon Emission Disclosure	1,000	Valid
SR	Sustainability Report Disclosure	1,000	Valid
TBQ	Firm Value	1,000	Valid

Source: Secondary Data Processed, 2024

Table 1 shows outer loading values for the variables green accounting, carbon emission disclosure, sustainability report disclosure, and firm value, all exceeding 0.7. This indicates that the indicators are robust and meet convergent validity.

Table 2
Average Variance Extracted

Variable	Average Variance Extracted (AVE)	Description
Green Accounting	1,000	Valid
Carbon Emission Disclosure	1,000	Valid
Sustainability Report Disclosure	1,000	Valid
Firm Value	1,000	Valid

Source: Secondary Data Processed, 2024

Based on Table 2, the Average Variance Extracted (AVE) values for the variables green accounting, carbon emission disclosure, sustainability report disclosure, and firm value are each greater than 0.50. This confirms that all instruments for these variables have satisfactory convergent validity. These results indicate that the variance of the indicators GA, CED, SR, and TBQ is well-explained by green accounting, carbon emission disclosure, sustainability report disclosure, and firm value.

Table 3
Collinearity Statistics Value (VIF)

	VIF	Description
CED	1,000	Collinearity Free
GA	1,000	Collinearity Free
SR	1,000	Collinearity Free
TBQ	1,000	Collinearity Free

Source: Secondary Data Processed, 2024

Table 3 shows that all variable indicators in this study have values < 5, indicating no strong correlation between independent variables and other variable indicators. This confirms that all variables in the study are free from multicollinearity issues.

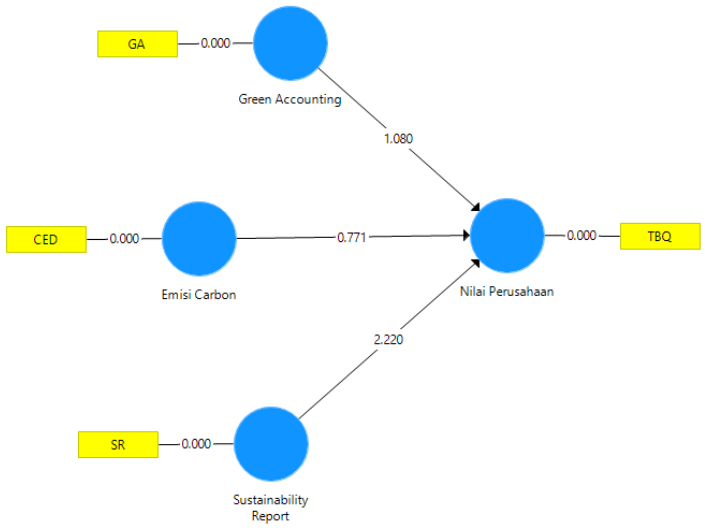

Figure 2
Structural Model Scheme (Inner Model)
Source: Secondary Data Processed, 2024

Table 4
R-Square Value ($R^{2)}$

	R Square
Firm Value	0,375

Source: Secondary Data Processed, 2024

Based on Table 4, the R^2 (R Square) value obtained for the firm value variable is 0.375, or 37.5%. This R^2 result, which lies between 0.25 and 0.50, indicates that the model is categorized as having a low explanatory power. An R^2 value of 37.5% suggests that the variations in the firm value variable can be explained by the variables of green accounting, carbon emission disclosure, and sustainability report disclosure.

Table 5
Hypothesis Test Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Carbon Emission -> Firm Value	0,095	0,103	0,123	0,771	0,441
Green Accounting -> Firm Value	-0,088	-0,087	0,081	1,080	0,281
Sustainability Report -> Firm Value	0,228	0,231	0,103	2,220	0,027

Source: Secondary Data Processed, 2024

H1 : Effect of Green Accounting Implementation on Firm Value

The test results show a P-value for the effect of green accounting implementation on firm value of 0.281 > 0.05, with a t-statistic of 1.080 < 1.96 and a path coefficient of -0.088. These results indicate that green accounting has a negative but not significant effect on firm value. Therefore, hypothesis 1 is rejected.

H2 : Effect of Carbon Emission Disclosure on Firm Value

The test results show a P-value for the effect of carbon emission disclosure on firm value of 0.441 > 0.05, with a t-statistic of 0.771 < 1.96 and a path coefficient of 0.095. These results indicate that carbon emission disclosure has a positive but not significant effect on firm value. Therefore, hypothesis 2 is rejected.

H3: Effect of Sustainability Report Disclosure on Firm Value

The test results show a P-value for the effect of sustainability report disclosure on firm value of 0.027 < 0.05, with a t-statistic of 2.20 > 1.96 and a path coefficient of 0.228. These results indicate that sustainability report disclosure has a positive and significant effect on firm value. Therefore, hypothesis 3 is accepted.

Effect of Green Accounting Implementation on Firm Value

The findings indicate that green accounting implementation has an insignificant negative impact on the firm value of energy companies listed on the Indonesia Stock Exchange, with a significance level of 0.281 > 0.05. This suggests that increased green accounting practices may reduce firm value due to higher operational costs, which can lower profits and potentially deter investors. This outcome contrasts with legitimacy theory, which

posits that green accounting enhances stakeholder trust and corporate legitimacy by supporting sustainable practices (Ekawati, 2023; Al Banjari, 2023; Lindawati et al., 2023; Gunawan & Berliyanda, 2024).

Investors, however, often prioritize profitability over environmental performance, as they perceive environmental management as an additional cost rather than an investment in sustainability. This suggests that green accounting in Indonesia is still low and has not fully adopted the comprehensive GRI standards. The absence of mandatory green accounting regulations also limits their adoption across companies.

Effect of Carbon Emission Disclosure on Firm Value

The findings indicate that carbon emission disclosures have a positive yet insignificant impact on firm value among energy companies on the Indonesia Stock Exchange, with a significance level of 0.441>0.05. While carbon disclosure aligns with the company's efforts to support government carbon control initiatives and builds transparency with the public, the relatively low quality and completeness of disclosure have yet to create a competitive advantage or sufficiently attract stakeholders. Investors may view carbon disclosures as a liability, associating environmental costs with reduced financial returns. This is consistent with studies by Gunawan & Berliyanda (2024), Ida Ayu Kade Pradnyawati & Desak Nyoman Sri Werastuti (2024), and Wenni Anggita et al. (2022), which also found no significant effect of carbon disclosure on firm value.

Additionally, the stakeholder theory underscores the importance of balancing stakeholder interests to ensure business sustainability, yet current investor priorities lean toward financial gains over environmental performance in assessing long-term investment potential.

Effect of Sustainability Report Disclosure on Firm Value

The results indicate that sustainability report disclosures have a significant positive impact on firm value among energy companies listed on the Indonesia Stock Exchange, with a significance level of 0,027 $\leq$ 0,05. This suggests that the more extensive the sustainability reporting, covering economic, environmental, and social aspects, the greater the positive perception among stakeholders, leading to increased trust and potentially higher productivity and sales.

Legitimacy theory supports that sustainability reports enhance a company's image, showcasing its alignment with societal norms and environmental responsibility, thereby increasing acceptance among the public. This aligns with research by Lestari & Khomsiyah (2023) and Dwi et al. (2020), which demonstrates that sustainability reporting fosters stakeholder confidence, signaling long-term stability and increasing firm value.

CONCLUSION

This study aimed to examine the effects of green accounting practices, carbon emission disclosure, and sustainability report disclosure on corporate value. The findings indicate that, while the disclosure of sustainability reports positively and significantly influences corporate value, green accounting practices and carbon emission disclosure do not show a significant impact. This suggests that stakeholders and investors may perceive the sustainability report as a more substantial indicator of corporate responsibility and credibility, leading to enhanced trust and company valuation.

The lack of significant influence from green accounting on corporate value could be due to increased operational costs associated with environmental efforts, which investors may view as a potential drawback impacting profitability. Similarly, carbon emission disclosures did not significantly affect corporate value, which may be attributed to investors' concerns about the costs involved in environmental management and skepticism about its direct financial benefits.

These insights underline the importance of sustainability reporting in enhancing corporate image and value, while also suggesting that green accounting practices and emission disclosures may not yet be sufficiently influential to sway investor perceptions in Indonesia's energy sector.

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