Enhancing Corporate Value Through Sustainability: The Role of Carbon Emission Disclosure, Green Accounting, and Environmental Performance in the Basic Materials Sector

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ABSTRACT
This study aims to analyze the effect of Carbon Emission Disclosure (CED), Green Accounting, and Environmental Performance on firm value, with a focus on Basic Materials sector companies listed on the Indonesia Stock Exchange during the period 2021-2023. The method used is a quantitative approach with multiple linear regression analysis, and data processing is carried out using SPSS version 26. The results showed that the three independent variables CED, Green Accounting, and Environmental Performance have a positive and significant effect on firm value. CED reflects the company's transparency in environmental issues, Green Accounting shows the company's responsibility in recording and reporting environmental costs, while Environmental Performance strengthens stakeholder trust. These findings confirm that the integration of environmental aspects in corporate strategy and reporting can increase firm value, especially in sectors with high emission intensity. The novelty of this study lies in its focus on the Basic Materials sector, which is still rarely studied in the context of environmental disclosure, as well as the approach that combines three environmental variables simultaneously. The results suggest that environmental responsibility is an important strategy in creating long-term value and sustainable competitiveness.
Keywords: Carbon Emission Disclosure; Environmental Performance; Firm Value; Green Accounting

INTRODUCTION

Global warming has become a significant environmental challenge in the modern era, with widespread impacts such as extreme climate change, ecosystem imbalance, and threats to the sustainability of human life (Anggita et al., 2022). One of the main causes of global warming is industrial activities that produce large amounts of carbon emissions (Maharani & Handayani, 2020). These high levels of emissions reflect that many companies have not yet fully implemented sustainability principles in their business operations (Anggita et al., 2022).

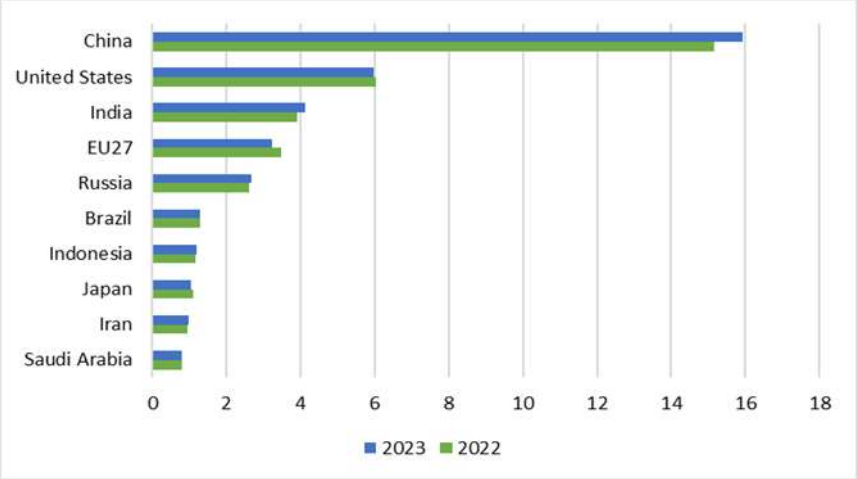

Figure 1. The World's Largest Greenhouse Gas Emitting Countries in 2022-2023

Compared to other countries, Indonesia was one of the world's largest greenhouse gas emitters in 2023. Indonesia ranked seventh globally and also first in Southeast Asia, emitting 1.2 billion Gt CO2e. This figure increased from the previous year's 1.15 billion Gt CO2e. As part of its commitment, Indonesia plans to reduce greenhouse gas emissions by 29% by 2030. This commitment is reflected in

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the Nationally Determined Contribution (NDC) submitted by Indonesia to the Paris Agreement as part of global efforts to address climate change.

In line with this national commitment, awareness of environmental issues has also begun to encourage companies to integrate sustainability aspects into their financial reporting (Sukmadilaga et al., 2023). This practice indicates a shift in companies' approach to environmental responsibility, leading to a more structured and documented approach. In modern business practices, corporate responsibility is no longer limited to the interests of owners and management, but also encompasses the interests of various stakeholders such as employees, customers, the community, and the surrounding environment (Dwicahyanti & Priyono, 2021). Improving environmental performance is a crucial element in ensuring transparency in the information provided to stakeholders (Anggita et al., 2022). Awareness of environmental issues is particularly relevant for industries with environmental impacts.

The basic materials industry is a significant contributor to carbon dioxide (CO_2) emissions, primarily through activities in subsectors such as cement, metals, chemicals, and mining. While this sector plays a vital role in providing raw materials for various industries, its ecological impacts are significant, ranging from waste pollution to forest destruction due to uncontrolled mining exploitation. Therefore, implementing sustainability principles is crucial to minimize these negative impacts (Fahiratunnisa & Darmawati, 2024). One of the most prominent subsectors is the cement industry, which contributes more than 7% of global greenhouse gas emissions (Tkachenko et al., 2023). These emissions primarily come from the combustion and calcination processes in kilns during clinker production. High market demand for cement, driven by accelerated infrastructure development such as toll roads, high-rise buildings, and bridges (Maha et al., 2022), has led to an increase in production that is in line with the surge in carbon emissions. With the continued increase in production activity, the volume of CO_2 emissions produced is also increasing, making emission control a major challenge in Indonesia's efforts to achieve its emission reduction targets (Rohmana & Sari, 2024).

The Indonesian cement industry faces significant challenges in reducing carbon dioxide (CO_2) emissions, a major contributor to greenhouse gases. One solution being implemented is the use of more environmentally friendly alternative raw materials and fuels, such as hazardous and toxic waste (B3) in the form of used lubricants, fly ash, and bottom ash. The utilization of this waste must meet environmental standards and be carried out by licensed parties in accordance with Ministerial Regulation No. 6 of 2021. Furthermore, these alternative materials must undergo laboratory testing to ensure compliance with Indonesian National Standards and TCLP procedures, to maintain product quality and regulatory compliance (Rohmana & Sari, 2024). This step not only supports emission reduction but also forms part of a circular economy strategy that encourages resource efficiency in industrial production processes.

On the other hand, the chemical industry also contributes significantly to environmental impacts, particularly in the Bengawan Solo River area. Waste from the textile, garment, and fisheries sectors is a major source of pollution, with microplastics found to average 31 particles per 100 liters of water in the upstream river (Yusron & Jaza, 2021). These microplastics, particularly fibers, not only pollute water but also absorb heavy metals, increasing their toxicity and endangering ecosystems and human health. Wang et al. (2022) added that microplastic pollution has spread to terrestrial environments such as agricultural lands, plantations, and industrial areas, expanding its impact on the environment. This situation highlights the need for stricter and more sustainable industrial waste management to prevent wider environmental damage. If not addressed promptly, this pollution has the potential to disrupt the food supply chain and exacerbate the environmental crisis in affected areas. This situation not only demands stricter industrial waste management but also emphasizes the importance of a transparent and integrated environmental reporting system as part of broader ecological impact mitigation efforts. In line with this urgency, this study aims to fill the gap in the literature regarding the influence of sustainability practices on firm value. While several studies have examined the influence of each variable on firm value, few studies have simultaneously examined Carbon Emission Disclosure, Green Accounting, and Environmental Performance as independent variables on firm value, particularly in the Basic Materials sector in Indonesia. Furthermore, secondary data-based approaches from the Indonesia Stock Exchange have not been comprehensively utilized. This study aims to analyze the influence of these three variables to provide a more comprehensive picture of the effectiveness of

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corporate sustainability strategies. The 2021–2023 timeframe was chosen because it reflects the latest trends in sustainability practices as well as significant changes in environmental regulations and policies. The selection of 2021 as the starting point was based on the effective implementation of POJK 51 of 2017, which requires companies in various sectors, including the basic materials sector, to prepare sustainability reports. Although this regulation was implemented in 2020, the majority of companies only began implementing it consistently in 2021.

LITERATUR REVIEW

Carbon Emission Disclosure

Carbon Emission Disclosure (CED) can be disclosed at three levels: 1) adequate disclosure, which includes only the minimum items required by the standard; 2) reasonable disclosure, which includes the minimum items plus other relevant information; and 3) full disclosure, which includes all relevant information as required by the standard (Hendriksen and Breda, 2001). Transparency in this reporting allows various stakeholders, including governments, financial institutions, and investors, to understand a company's commitment to maintaining environmental sustainability (Sebastian, 2022). One key approach supporting this transparency is green accounting, an accounting system that integrates environmental, social, and economic aspects into a company's financial statements (Deegan, 2013; Yusoff, 2018; Belesis et al., 2022). By implementing green accounting, companies can consider environmental factors in their economic decision-making, resulting in more holistic financial statements (Faisal et al., 2022; Imasuen et al., 2022).

Green Accounting

Green accounting is an approach that emphasizes recording and reporting the environmental impacts of business activities. Through this practice, companies can transparently identify, manage, and report negative environmental impacts while demonstrating their contribution to sustainability (Ningsi et al., 2024). Furthermore, green accounting encompasses the efficient use of natural resources and waste management to reduce environmental damage. Consequently, Environmental, Social, and Governance (ESG) reporting has become a key indicator for assessing a company's value and competitiveness globally (Luqyana, 2020). ESG reflects a company's commitment to sustainability, integrity, and social responsibility. A Mandiri Institute survey noted that 71% of public companies in Indonesia consider ESG a strategic priority, amid increasing pressure from consumers, investors, and regulators (www.pajak.com). With increasing awareness of the importance of responsible reporting, implementing green accounting serves as a foundation for companies to adopt ESG principles and demonstrate their environmental performance in tangible and measurable ways.

Environmental Performance

Environmental performance is also a key factor in maintaining reputation and building stakeholder trust (Hardiyansah & Agustini, 2021). This performance evaluation includes resource use, operational impacts on ecosystems, and waste management in accordance with applicable regulations. Companies with good environmental performance tend to have a positive image because they demonstrate a commitment to managing environmental impacts sustainably (Dwicahyanti & Priyono, 2021). Companies must also implement concrete strategies to reduce environmental impacts and maintain ecosystem sustainability. Objective evaluation of environmental performance requires an independent external party who can assess the effectiveness of a company's sustainability policies (Anggita, 2020).

Legitimacy Theory

Within the framework of Legitimacy Theory, companies are required to demonstrate compliance with prevailing social and environmental norms in an effort to maintain their existence and gain public acceptance (Ridzal et al., 2024). To meet this demand, many companies have begun preparing separate sustainability reports as a form of transparency and accountability to stakeholders. These reports serve as an important means of demonstrating that a company is not solely profit-oriented but also considers the social and ecological impacts of its operations. Hardiyanti and Sajiyo (2024) emphasize that to remain relevant and trusted, companies must be able to adapt to changing societal values and expectations, particularly regarding environmental performance and social responsibility.

Stakeholder Theory

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Stakeholder theory emphasizes the importance of building and maintaining strong relationships with various stakeholders involved in a company's activities. In this context, disclosing carbon emissions alone is not enough; companies need to demonstrate a concrete commitment to sustainability to create long-term value for both the environment and stakeholders (Behl et al., 2022). One strategy used to maintain these relationships is through ESG reporting, which encompasses environmental, social, and governance aspects (Hörisch et al., 2020). By considering these three aspects in decision-making, companies not only increase transparency but also strengthen their reputation and public trust. Comprehensive ESG disclosure, including information related to carbon emissions, is believed to positively contribute to increasing a company's value in the eyes of investors and the wider community (Khairunnisa & Widiastuty, 2023).

RESEARCH METHOD

The population used in this study was 75 companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period. The sample selection method used was purposive sampling, a technique for determining samples based on specific criteria or reasons consistent with the research objectives (Sugiyono, 2020). The criteria used to determine the sample in this study are as follows:

Table 1. Research Sample Criteria

No	Sample Criteria	Compliant Companies	Non-Compliant Companies
1	Basic materials sector companies listed on the Indonesia Stock Exchange (IDX) consecutively in the 2021-2023 period	85	(0)
2	Companies that published annual reports for the 2021-2023 period	75	(10)
3	Companies that published sustainability reports for the 2021-2023 period	61	(14)
4	Basic materials sector companies listed on the Indonesia Stock Exchange (IDX) and participating in PROPER consecutively in the 2021-2023 period	25	(36)
5	Companies that consistently and explicitly disclose carbon emissions in their annual reports and/or sustainability reports for the 2021-2023 period must include at least one disclosure item.	25	(0)
6	Companies that use green accounting practices are published in annual reports and financial reports.	25	(0)
Number of Research Samples that Meet the Criteria (n)		25	
Total Sample (n x 3-year research period)		75	

Source: Processed by Researchers (2025)

The table shows that 25 companies met the criteria and could be used as research samples. This was due to one company not publishing a sustainability report for the 2021-2023 period, and 59 companies not participating in PROPER consecutively from 2021 to 2023.

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The data in this study were collected using documentation techniques, which are part of a secondary data approach. In this context, data were obtained from public documents such as sustainability reports and company annual reports for the 2021-2023 period, which can be accessed through the Indonesia Stock Exchange (IDX) website and the official websites of each company. This data was used to assess research variables related to CED, green accounting, environmental performance, and company value.

Carbon Emission Disclosure (CED) is a form of corporate responsibility in responding to demands to reduce the environmental impact of its operational activities. This disclosure not only reflects concern for environmental issues but also contributes to building stakeholder trust, strengthening support, and increasing company value, especially for larger companies that tend to provide more comprehensive disclosures without increasing operational burdens (Hardiyansah et al., 2021). This variable was measured using a content analysis method based on a checklist developed by Choi et al. (2013), which refers to a questionnaire from the Carbon Disclosure Project (CDP). This checklist covers five main categories: climate change, greenhouse gas emissions, energy consumption, emission reductions and costs, and carbon emission accountability, which are broken down into 18 measurement items.

$$\textbf{Carbon Emission Disclosure Index} = \frac{Total\ Scores\ Obtained}{Amounts\ That\ Should\ Be\ Disclosed}$$

Green accounting is an accounting approach that integrates environmental aspects into a company's financial recording and reporting processes (Dura & Suharsono, 2022). The implementation of green accounting is measured using a content analysis approach with dummy variables, as developed by Lubis et al. (2023). This method assigns a score of 1 to a company if its annual report or sustainability report includes elements such as environmental costs, waste management, or investment in environmental development. Conversely, if these components are not included, the company is assigned a score of 0.

The level of environmental compliance of companies in Indonesia is assessed through a government-established rating system. One instrument used is the PROPER (Company Performance Rating Assessment Program), which assesses environmental management and efforts to improve sustainability standards (Hardiyansah et al., 2021). Assessment is based on color categories, with gold receiving the highest score of four, followed by green with a score of three, blue with a score of two, red with a score of one, and black with a score of zero. This scheme reflects the extent of a company's commitment to responsible environmental management.

Firm value is seen as a reflection of investors' perceptions of a company's success, which is generally associated with its stock price (Fajriah et al., 2022). A high stock price indicates a company's high value, reflecting good performance and a positive image among investors. In this study, firm value was measured using the Tobin's Q ratio, which is considered more effective in explaining various corporate activities. This method is used to analyze investment and diversification decisions, the relationship between ownership and performance, and various other factors such as financing policies, dividends, acquisitions, and compensation (Tobin, 1969). The following equation illustrates the measurement of Tobin's Q:

$$\text{Tobin's Q} = \frac{(Market\ Value\ of\ Equity + Market\ Va;ue\ Liability)}{Total\ Assets}$$

RESULTS AND DISCUSSION

A normality test is performed to evaluate whether the data on the dependent and independent variables in a regression model are normally distributed (Ghozali, 2021:29). Data are considered to meet the normality assumption if the significance value of the Kolmogorov-Smirnov test exceeds 0.05.

Table 1. Normality Test Kolmogrov-Smirnov

Uji Kolmogorov – Smirnov	Unstandardized Residual
Kolmogorov – Smirnov Value	0.200
Significance Standard	0.05

Source: Output SPSS (2025)

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Based on the results in Table 2, the normality test using the One-Sample Kolmogorov-Smirnov method showed a significance value of 0.200, which is greater than the 0.05 significance limit. Referring to the decision-making criteria, this value indicates that the data in this study are normally distributed.

The classical assumption test is a statistical requirement that must be met in multiple linear regression analysis. In this study, the classical assumption tests performed included multicollinearity, heteroscedasticity, and autocorrelation tests. The results of the classical assumption test can be explained as follows:

Table 2. Multicollinearity Test Results

Variabel	Collinearity Statistics	
	Tolerance	VIF
Carbon Emission Disclosure (X1)	0.816	1.226
Green Accounting (X2)	0.933	1.072
Environmental Performance (X3)	0.868	1.151

Source: Output SPSS (2025)

Based on Table 3, the results of the multicollinearity test indicate that all independent variables have tolerance values above 0.10 and Variance Inflation Factor (VIF) values below 10.00. Referring to the decision-making criteria, this indicates that there are no symptoms of multicollinearity in the regression model used.

Tabel 3. Heteroscedasticity Test Results – Glejser

Variable	Sig.
Carbon Emission Disclosure (X1)	0.340
Green Accounting (X2)	0.806
Environmental Performance (X3)	0.062

Source: Output SPSS (2025)

In this study, the heteroscedasticity test was conducted using the Glejser method. The decision-making criteria state that if the significance value is greater than 0.05, it can be concluded that there are no symptoms of heteroscedasticity in the model. Based on Table 4, the test results show that the significance value for variable X1 is 0.340, X2 is 0.806, and X3 is 0.062—all exceeding the 0.05 threshold. Thus, it can be concluded that the variables do not experience heteroscedasticity problems.

Table 4. Autocorrelation Test Results - Durbin Watson

Sig.	Upper (dL)	Lower (dU)	Durbin - Watson
0.05	1.5432	1.7092	1.915

Source: Output SPSS (2025)

Based on Table 5, the Durbin-Watson (DW) value obtained in this study is 1.915. With 3 independent variables (k) and 75 samples (n), the upper limit (DU) value at a 5% significance level is 1.7092. Based on the decision-making criteria, if the DW value is between DU and 4–DU, namely $1.7092 < 1.915 < 2.2908$, it can be concluded that the regression model does not indicate autocorrelation. This means that the residual data in the model are independent and uncorrelated.

Table 5. Multiple Linear Regression Test Results

Model	Unstandardized Coefficients	
	B	Std. Error
Constant	-0.793	0.324
Carbon Emission Disclosure (X1)	0.121	0.029
Green Accounting (X2)	0.606	0.162
Environmental Performance (X3)	0.217	0.089

Source: Output SPSS (2025)

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Based on Table 6, the results of the multiple linear regression analysis can be seen through the beta coefficient (β) value of each independent variable. Thus, the multiple linear regression equation in this study can be formulated as follows:

$$Y = (-0.793) + 0.121X_1 + 0.606X_2 + 0.217X_3)$$

The constant (α) of –0.793 indicates that when all independent variables, namely Carbon Emission Disclosure (X_1), Green Accounting (X_2), and Environmental Performance (X_3), are zero, the company value (Y) is estimated to be at –0.793. The regression coefficient of X_1 (Carbon Emission Disclosure) of 0.121 indicates that every one-unit increase in carbon emission disclosure will increase the company value by 0.121, assuming other variables remain constant. The regression coefficient of X_2 (Green Accounting) of 0.606 indicates that a one-unit increase in green accounting practices will increase the company value by 0.606, assuming other variables remain unchanged. The regression coefficient of X_3 (Environmental Performance) of 0.217 means that every one-unit increase in environmental performance will increase the company value by 0.217, assuming other variables remain constant.

Table 6. Results of the Determination Coefficient Test

Model	R	R Square	Adjusted R Square
1	0.756	0.572	0.443

Source: Output SPSS (2025)

Based on Table 7, the coefficient of determination (R^2) value obtained of 0.572 indicates that 57.2% of the variation in the dependent variable, namely company value, can be explained by the independent variables used in the regression model and the remainder, 42.8%, is explained by other variables outside the model that are not included in this study.

Table 7. Partial Statistical Test Results (t-test)

Model	Unstandardized Coefficients		
	B	T	Significance
Constant	-0.793	-2.452	0.017
Carbon Emission Disclosure (X1)	0.121	4.124	0.000
Green Accounting (X2)	0.606	3.733	0.000
Environmental Performance (X3)	0.217	2.426	0.018

Source: Output SPSS (2025)

In the first hypothesis, the Carbon Emission Disclosure (X_1) variable showed a t-value of 4.124 with a significance level of 0.000. Because this significance value is less than α = 0.05, it can be concluded that Carbon Emission Disclosure has a significant effect on firm value. This indicates that the higher the level of carbon emissions disclosure by a company, the greater the reflected firm value.

In the second hypothesis, the Green Accounting (X_2) variable had a t-value of 3.733 with a significance level of 0.000. This value is also less than the significance limit of 0.05, thus concluding that Green Accounting has a significant effect on firm value. This means that the implementation of green accounting practices that reflect a company's environmental responsibility also increases investors' positive perceptions of the company's value.

In the third hypothesis, the Environmental Performance (X_3) variable showed a t-value of 2.426 with a significance level of 0.018, still less than 0.05. Therefore, Environmental Performance also has a significant effect on firm value. This shows that good environmental performance can increase stakeholder trust and strengthen the company's reputation in the market.

This study shows that Carbon Emission Disclosure (CED) significantly impacts the value of companies in the Basic Materials sector listed on the Indonesia Stock Exchange during the 2021–2023 period. This finding indicates that a company's level of transparency in disclosing carbon emissions is a key concern for investors, as it reflects the company's commitment to sustainability and environmental responsibility. The higher the level of carbon emissions disclosure, the greater investor confidence in the company's reputation and long-term prospects.

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This finding aligns with Legitimacy Theory, which states that companies focus not only on profit but also have a social responsibility to the community to maintain the continuity of their operations (Noor et al., 2022). In this context, companies need to demonstrate compliance with social norms and values, including those related to environmental protection. Disclosure of carbon emissions serves as a form of external accountability that reflects a company's commitment to environmental issues and can strengthen its social standing in the eyes of the public and regulators.

The results of this study align with those of Sari and Budiasih (2022) and Alfayerds and Setiawan (2021), which showed that carbon emission disclosure positively impacts company value because it creates a positive public image and increases investor appeal. However, these results differ from those of Gunawan and Berliyanda (2024) and Anggita et al. (2022), which found that carbon emission disclosure had no significant impact on company value. This difference is likely due to limited resources and capacity of companies in developing countries, as well as differences in investor perceptions of environmental information, influenced by industry sector and market awareness of sustainability issues.

The results of this study indicate that Green Accounting significantly impacts company value, particularly in the Basic Materials sector listed on the Indonesia Stock Exchange during the 2021–2023 period. The implementation of green accounting reflects a company's commitment to managing its environmental impact through transparent recording and reporting of environmental costs. This practice not only enhances corporate accountability but also strengthens investor confidence in the company's long-term prospects. The better the implementation of green accounting, the more positive the market's perception of sustainability and corporate social responsibility.

The implementation of green accounting aligns with Legitimacy Theory, which emphasizes the importance of corporate compliance with social values and norms to gain public acceptance. Environmental concern is one form of compliance deemed important by the public. Furthermore, Stakeholder Theory emphasizes the role of accountants in presenting information that is not only financial but also non-financial, such as environmental data (Zaitegi et al., 2022). This information influences stakeholder perceptions of corporate sustainability, where the accuracy and completeness of environmental reports are key to building trust with investors and other stakeholders.

These findings align with research conducted by Anggita et al. (2022) and Erlangga et al. (2021), who stated that green accounting contributes to quantitatively assessing the cost-effectiveness of environmental protection and strengthening the alignment of corporate values with prevailing social values. However, these results are inconsistent with the study by Dewi et al. (2023), who found that green accounting had no significant effect on corporate value. According to them, environmental costs are still perceived as a burden that reduces corporate profits. However, when viewed as a long-term investment, these costs can actually increase social legitimacy and positive assessments from the government and society.

The results of this study indicate that environmental performance has a positive and significant impact on company value in the Basic Materials sector listed on the Indonesia Stock Exchange during the 2021–2023 period. Companies that effectively manage their environmental impacts not only fulfill their social responsibilities but also increase their investment attractiveness in the eyes of stakeholders. Investors increasingly value companies with superior environmental performance because it reflects operational efficiency, sound risk management, and readiness to face increasingly stringent environmental regulations. Therefore, the higher the quality of a company's environmental performance, the greater the trust and market value it gains, ultimately strengthening the company's position in long-term business competition.

This finding aligns with research by Gunawan and Berliyanda (2024) and Khanifah et al. (2020), which states that good environmental performance can build stakeholder trust and positively impact company value. From a theoretical perspective, these results support Legitimacy Theory, which states that companies need to demonstrate compliance with social and environmental norms to gain public acceptance. In addition, Stakeholder Theory is also relevant, because it shows that attention to environmental issues is a form of corporate responsibility towards the interests of stakeholders, which in turn influences their perceptions and investment decisions.

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CONCLUSION

Based on the analysis of companies in the basic materials sector listed on the Indonesia Stock Exchange during the 2021-2023 period, it can be concluded that carbon emission disclosure, green accounting, and environmental performance have a positive influence on company value. The transparency of carbon emission disclosure, the implementation of effective environmental accounting practices, and strong environmental performance indicate that companies are not solely focused on financial returns but also consider sustainability aspects. This increases investor confidence in the company's long-term commitment and strengthens its competitive position in the market. Therefore, integrating environmental aspects into company strategy and reporting can be a strategic factor in creating long-term value and sustainable competitiveness.

While these findings provide a clear picture of the importance of environmental factors in shaping company value, this study has several limitations that require consideration. The study's limited focus on the basic materials sector makes the results incapable of generalizing to other industrial sectors, which may have different operational characteristics and environmental challenges. Furthermore, the three-year study period is insufficient to comprehensively capture long-term impacts, especially in the context of regulatory changes and evolving global market dynamics.

Therefore, for future research, it is recommended that the sector scope be expanded to gain a broader understanding of the influence of sustainability on corporate value across industries. A longer observation period is also important to capture long-term trends and market responses to the consistency of corporate environmental practices. By expanding the scope and time period, future research is expected to provide deeper insights into the strategic role of environmental factors in creating corporate value amidst increasing global pressure on sustainability issues.

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