

## THE EFFECT OF CARBON EMISSION DISCLOSURE, ENVIRONMENTAL COSTS, AND GOOD CORPORATE GOVERNANCE ON FIRM VALUE

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**Abstract:** This study aims to examine and analyze the effect of carbon emission disclosure, environmental costs, and good corporate governance on firm value in basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. The research employs a quantitative method using secondary data obtained from companies' annual reports and sustainability reports. The research sample was selected using a purposive sampling technique, resulting in 28 companies with a total of 84 observations. Data analysis was conducted using multiple linear regression with EViews 12 software. The results indicate that (1) carbon emission disclosure has no significant effect on firm value, (2) environmental costs have no significant effect on firm value, and (3) good corporate governance has a positive and significant effect on firm value.

**Keywords:** Carbon Emission Disclosure, Environmental Costs, Good Corporate Governance, Firm Value

## INTRODUCTION

### Introduction

Firm value is an important indicator that reflects investors' confidence in a company's prospects, reputation, and quality of management. A high firm value signals market confidence in management's ability to manage assets, risks, and future growth opportunities effectively (Aeni & Murwaningsari, 2023). Firm value also represents a company's condition and market position, which are reflected in stock price movements as a form of investor assessment (Abbas et al., 2020). An increase in firm value contributes to greater shareholder wealth and is therefore commonly used as an indicator of management success in utilizing corporate resources efficiently (Soleman et al., 2022).

In an increasingly competitive global environment, the achievement of firm value no longer depends solely on financial performance but also on a company's ability to respond to external factors related to business sustainability. Corporate management is no longer focused merely on maximizing profits but also on how corporate activities generate broader benefits for society and the environment (Apriandi et al., 2022).

Increased greenhouse gas emissions, which fuel global warming and climate change, are a result of increased industrial activity. Environmental issues such as carbon emissions and pollution are no longer local concerns but have become global issues due to their extensive impacts on human life and ecosystems (Rahmasari & Irwansyah, 2024). This condition indicates that the industrial sector's contribution to environmental degradation is increasingly significant and requires serious attention from various stakeholders. According to the Global Carbon Project (2023), Indonesia ranked seventh among countries with the highest carbon emissions worldwide in 2022, with total emissions reaching 737 MtCO<sub>2</sub>. As a developing

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country with a broad industrial base, Indonesia faces substantial challenges in balancing economic growth with environmental responsibility (Akib et al., 2025).

These circumstances have prompted the government to enact regulations governing the contribution of corporations to the reduction of greenhouse gas emissions. Law Number 16 of 2016, which ratified the Paris Agreement, demonstrates Indonesia's commitment to mitigating climate change. This commitment was subsequently implemented through Presidential Regulation Number 98 of 2021, which was updated by Presidential Regulation Number 110 of 2025, emphasizing that business actors are obligated to contribute to efforts to reduce greenhouse gas emissions. As part of this commitment, the Financial Accounting Standards Board (DSK IAI) of the Indonesian Institute of Accountants (IAI) has released PSPK 2 on climate-related disclosures and PSPK 1 on general requirements for sustainability-related financial disclosures, both of which will take effect on January 1, 2027. One form of corporate environmental responsibility is the disclosure of carbon emissions in sustainability reports. Such disclosures play a crucial role in reducing information asymmetry between management and investors, enabling investors to assess corporate risks more accurately (Aeni & Murwaningsari, 2023). Thus, carbon emission disclosure is not merely an administrative requirement but also a strategic tool for building trust and reputation among stakeholders.

Environmental information disclosure would be meaningless without being accompanied by financial accountability for the environmental impacts of corporate operations. Environmental costs refer to expenditures arising from operational activities that negatively affect environmental quality, as regulated in Government Regulation Number 47 of 2012 (Pasaribu et al., 2023). The low level of corporate awareness regarding environmental cost management is reflected in numerous environmental pollution cases in Indonesia. One notable case involved allegations of hazardous and toxic waste (B3) liquid disposal by PT Pabrik Kertas Tjiwi Kimia Tbk into the Porong River in Sidoarjo, which resulted in ecosystem damage and environmental degradation in the surrounding area (Realita.co, 2022). This case illustrates that corporate negligence in managing waste and environmental costs can generate serious adverse impacts on both society and the environment.

Environmental costs refer to all forms of sacrifices, both financial and non-financial, incurred by companies to maintain environmental stability (Taufiq, 2022). Environmental costs are used by companies for activities aimed at improving environmental performance and preventing more severe environmental damage (Zainab & Burhany, 2020). According to Hansen & Mowen (2007), these costs are divided into four categories, environmental prevention costs, environmental detection costs, environmental internal failure costs, and environmental external failure costs.

Environmental cost disclosure refers to the presentation of information regarding costs related to a company's environmental activities in corporate reports. However, in Indonesia, the disclosure of environmental costs remains voluntary, resulting in varying levels of transparency and corporate commitment in reporting their environmental responsibilities (Kinansih & Asrori, 2020). For shareholders who are concerned about a company's environmental performance, environmental costs can become one of the factors considered in making investment decisions (Saputri et al., 2023).

To ensure transparency and accountability in the reporting of environmental information, companies require effective governance mechanisms. One mechanism that plays an important role in encouraging transparency and strengthening corporate accountability is Good Corporate Governance (GCG). The Indonesian government requires the implementation of GCG in public companies, as stipulated in the Financial Services Authority Regulation Number 21/POJK.04/2015 concerning the Implementation of Corporate Governance Guidelines for Public Companies. The implementation of GCG aims to encourage improvements in company

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performance, which ultimately leads to an increase in firm value and provides benefits for stakeholders, employees, and the company as a whole (Shanti et al., 2021).

The effective implementation of GCG also reflects transparent and accountable corporate governance, thereby building trust from external parties, including investors (Shabrina et al., 2024). If this implementation is carried out in accordance with the applicable regulations, it will encourage positive investor responses to the company's performance. Investors tend to avoid companies that do not properly implement GCG. They believe that companies that apply GCG are better able to minimize risks and maximize the enhancement of firm value (Parwata & Anggara, 2022).

Previous studies have reported inconsistent results across variables. Research on carbon emission disclosure conducted by Nazwa & Fitri (2022), Aeni & Murwaningsari (2023), and Rahmasari & Irwansyah (2024) shows that carbon emission disclosure has a positive effect on firm value. In contrast, studies by Hadiwibowo et al. (2023) and Putri et al. (2024) find that carbon emission disclosure has a negative effect on firm value. These findings differ from those of Gunawan & Berliyanda (2024) and Yolifiandri et al. (2025), who conclude that carbon emission disclosure has no significant effect on firm value.

Studies examining environmental costs conducted by Setyaningrum & Mayangsari (2022), Renaldi & Anis (2023), and Akib et al. (2025) find that environmental costs have a positive effect on firm value. Conversely, Ahmad (2021) and Ahmad et al. (2024) report a negative effect of environmental costs on firm value. Different results are reported by Saputri et al. (2023) and Anggriani & Syaipudin (2025), who find that environmental costs do not significantly affect firm value.

Research on Good Corporate Governance (GCG) also demonstrates mixed findings. Studies by Fana & Prena (2021), Apriani & Khairani (2023), and Buren et al. (2023) show that good corporate governance has a positive effect on firm value. Meanwhile, Utami & Wulandari (2021) and Feviana & Supatmi (2021) find a negative effect of good corporate governance on firm value. In contrast, Ardiansyah et al. (2020) and Pradnyawati & Werastuti (2024) conclude that good corporate governance has no significant effect on firm value.

## Research purposes

The objectives to be achieved in this study are as follows:

1. To analyze the effect of carbon emission disclosure on firm value in basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period.
2. To analyze the effect of environmental costs on firm value in basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period.
3. To analyze the effect of Good Corporate Governance (GCG) on firm value in basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period.

## LITERATURE REVIEW

### Stakeholder Theory

Stakeholders include any individuals or groups that have the ability to influence the achievement of a company's objectives or are affected by the achievement of those objectives. Stakeholders are not limited to shareholders but also encompass other parties, both individuals and groups, who may have indirect relationships with corporate activities yet still contribute to the attainment of corporate goals (Fuadah & Hakimi, 2020). Stakeholder theory was first introduced by Freeman (1984) and further developed by Freeman (1999). This theory posits that companies are not entities that operate solely for their own interests but are required to create value and provide benefits for all stakeholders (Subroto & Endaryati, 2024). A fundamental principle of corporate management is the ability to account for performance in a

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transparent and fair manner. Therefore, companies must be managed properly, measurably, and with an orientation toward corporate objectives while simultaneously considering the rights and interests of shareholders and other stakeholders (Liong, 2022). Carbon emission disclosure provides insight into the extent to which a company demonstrates its commitment to sustainability and the ecological impacts of its operations (Lee et al., 2021). Meanwhile, environmental costs reflect a company's financial responsibility for the negative environmental impacts arising from its operational activities (Zainab & Burhany, 2020).

### **Agency Theory**

Agency theory was introduced by Alchian and Demsetz in 1972 and later further developed by Jensen and Meckling in 1976. Agency theory describes a contractual relationship in which one party (the principal) delegates authority to another party (the agent) to perform actions on behalf of the principal (Subroto & Endaryati, 2024). This theory explains the separation of roles between company owners and managers, which leads to differing objectives between the two parties (Silaban & Suryani, 2020). Conflicts of interest arise because each party seeks to maximize personal benefits without always considering the interests of the other party (Afnilia & Astuti, 2023). When both parties attempt to maximize their own interests, it creates the assumption that agents will not always act in accordance with the principals' objectives (Parwata & Anggara, 2022). Agency theory provides a theoretical foundation for explaining the role of Good Corporate Governance (GCG) in minimizing conflicts of interest between management and shareholders. The implementation of GCG aims to improve corporate performance, which in turn contributes to an increase in firm value (Shanti et al., 2021).

### **Firm Value**

Firm value is theoretically defined as the amount of money that an individual is willing to pay to acquire confidence in a company's current performance and its future prospects (Akib et al., 2025). Firm value reflects the company's performance, which is indicated by its stock price. Stock prices are formed through the mechanism of supply and demand in the capital market, representing public perceptions of how well the company performs (Ningrum, 2021). This study uses Tobin's Q ratio as a proxy for measuring firm value because, according to Okta et al. (2022), this ratio is considered to provide more comprehensive information about the company, as its formula incorporates liabilities as part of the basis for calculation.

### **Carbon Emission Disclosure**

Carbon emission disclosure is one form of environmental reporting included in supplementary reports in accordance with applicable laws and regulations (Rusmana & Purnaman, 2020). This disclosure contains information regarding a company's carbon performance, both historical and prospective, which is intended for internal and external stakeholders.

To assess the extent of carbon disclosure, in 2013 Bo Bae Choi, Doowon Lee, and Jim Psaros developed a checklist based on the information request form from the Carbon Disclosure Project (CDP). The carbon emission disclosure index consists of 18 (eighteen) items across 5 (five) disclosure categories, namely 2 (two) items on climate change information, 7 (seven) items on greenhouse gas information, 4 (four) items on energy consumption information, 3 (three) items on reduction and cost information, and 2 (two) items on carbon emission accounting (Afnilia & Astuti, 2023).

### **Environmental Cost**

Environmental cost are costs that arise due to a decline in environmental quality or the potential for such a decline. These costs are associated with activities related to the creation, detection, remediation, and prevention of environmental degradation (Hansen & Mowen, 2007). Environmental costs consist of both internal and external costs, encompassing all

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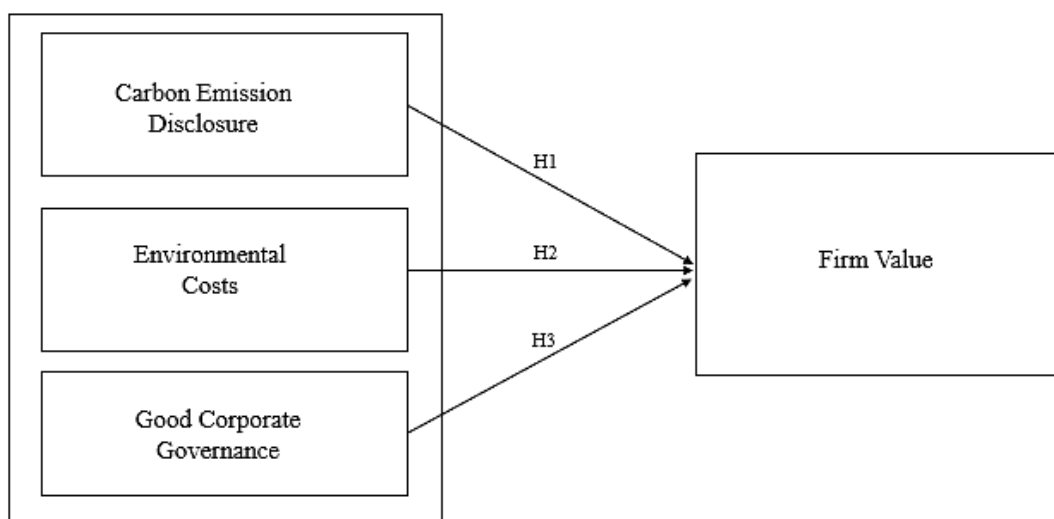
expenditures incurred as a result of environmental damage as well as efforts toward environmental protection (Taufiq, 2022). Environmental costs are measured by comparing total environmental costs to net income after tax, as they indicate the extent to which a company is able to manage its expenditures (Hapsoro & Adyaksana, 2020).

## Good Corporate Governance (GCG)

Good Corporate Governance (GCG) is a system used by the board to direct, control, and supervise the management of organizational resources in an efficient, effective, economical, and productive (E3P) manner, based on the principles of transparency, accountability, responsibility, independency, and fairness (TARIF), in order to achieve organizational objectives (Ardiansyah et al., 2020). The mechanisms of Good Corporate Governance consist of five main elements, namely managerial ownership, institutional ownership, board size, the proportion of independent commissioners, and the audit committee. These five elements function to reduce potential agency conflicts and to ensure that the company is managed in a transparent and accountable manner (Wati et al., 2024).

## RESEARCH METHODOLOGY

This study adopts a quantitative research approach grounded in positivist philosophy. The data utilized in this research are secondary data derived from the annual reports and sustainability reports of basic materials sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. The population of this research consists of 113 basic materials sector companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period. The sampling method applied in this study is purposive sampling. The sample selection was based on several criteria: (1) basic materials sector companies listed on the IDX throughout the 2022–2024 period; (2) companies in the basic materials sector that consistently published annual reports and sustainability reports during the 2022–2024 period; (3) companies that disclosed carbon emissions, indicated by the disclosure of at least one carbon emission item, during the 2022–2024 period; (4) companies that reported environmental costs during the 2022–2024 period; and (5) companies that provided complete information on good corporate governance, including managerial ownership, institutional ownership, the board of directors, independent commissioners, and the audit committee, in their annual reports for the 2022–2024 period. Based on these criteria, 28 companies fulfilled the sampling requirements and were selected as the research sample. Therefore, the final sample comprises 28 firms observed over three years, yielding a total of 84 firm-year observations.



**Figure 1**  
**Research Framework**

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According to the study conducted by Rahmasari & Irwansyah (2024), carbon emission disclosure has a significant effect on firm value. Corporate transparency in disclosing carbon emissions reflects openness toward environmental issues, which can provide a positive signal to stakeholders. This transparency enhances trust and fosters positive perceptions of a company's social and environmental responsibility, thereby contributing to an improvement in firm value and corporate reputation in the eyes of stakeholders. Similar findings are reported by Nazwa & Fitri (2022) as well as Aeni & Murwaningsari (2023), who demonstrate that carbon emission disclosure not only facilitates companies in gaining stakeholder support but also leads to an increase in firm value. The motivation to disclose carbon emissions is also driven by various parties, including the public, business actors, and government authorities, who demand that companies respond to environmental sustainability threats arising from extreme climate change. Based on previous research, this study formulates the first hypothesis as follows:

H1: Carbon Emission Disclosure has an effect on Firm Value.

Environmental costs have an impact on firm value, according to a study by Setyaningrum and Mayangsari (2022). In the long run, environmental expenditures are regarded as a form of investment, even though their benefits may not be immediately realized at the time the costs are incurred. The findings of Renaldi and Anis (2023) as well as Akib et al. (2025) also indicate that environmental costs significantly influence firm value. Efforts to improve environmental quality can help companies produce goods that are free from environmental damage, which ultimately contributes to profit maximization and an increase in firm value. Stakeholder Theory, which highlights the significance of stakeholders' responsibilities in business activities, is in line with these findings. Therefore, companies are required to fulfill stakeholders' interests, one of which is through the disclosure of environmental costs in sustainability reports or annual reports. Based on previous research, this study formulates the second hypothesis as follows:

H2: Environmental Costs have an effect on Firm Value.

According to research by Apriani and Khairani (2023), implementing Good Corporate Governance (GCG) is essential to boosting investor confidence in businesses. The adoption of GCG can reduce the cost of capital and encourage improvements in corporate business performance. Sound corporate governance serves as a positive signal to investors regarding management quality and corporate sustainability, which subsequently contributes to an increase in firm value. Consistent findings are reported by Fana and Prena (2021) as well as Buren et al. (2023), who state that Good Corporate Governance constitutes a fundamental pillar in building strong and long term oriented companies. Through the implementation of GCG, companies establish basic policies and codes of conduct that must be adhered to by all organizational members, particularly top management, as part of corporate ethical standards. Based on previous research, this study formulates the third hypothesis as follows:

H3: Good Corporate Governance has an effect on Firm Value.

## **RESULTS AND ANALYSIS**

### **Descriptive Statistics**

The results of the descriptive statistics in this study provide an overview of the independent variables, namely carbon emission disclosure (CED), environmental costs (EC), and good corporate governance (GCG), as well as the dependent variable, firm value (FV). The results of the descriptive statistical analysis are presented in Table 2 below.

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**Table 1**  
**Results of Descriptive Statistical Analysis**

Statistik	FV	CED	EC	GCG
Mean	1,078	0,739	0,082	8,802
Median	0,940	0,778	0,014	8,467
Maximum	3,729	0,944	3,518	12,374
Minimum	0,341	0,389	-1,135	5,709
Std. Dev.	0,532	0,136	0,433	1,573
Skewness	2,236	-1,040	6,125	0,398
Kurtosis	10,358	3,336	50,061	3,064
Jarque-Bera	259,489	15,543	8276,987	2,233
Probability	0,000	0,000	0,000	0,327
Sum	90,550	62,111	6,883	739,393
Sum Sq. Dev.	23,481	1,543	15,576	205,477
Observations	84	84	84	84

Based on Table 2, the firm value variable shows a maximum value of 3,729 and a minimum value of 0,341. These values indicate that firm value ranges from 0,341 to 3,729, with a median of 0,940. The mean firm value is 1,078, with a standard deviation of 0,532, indicating that the data are relatively homogeneous. The carbon emission disclosure variable has a maximum value of 0,944 and a minimum value of 0,389. This indicates that carbon emission disclosure ranges from 0,389 to 0,944, with a median of 0,778. The mean value of carbon emission disclosure is 0,739, with a standard deviation of 0,136, suggesting that the data are homogeneous. The environmental cost variable shows a maximum value of 3,518 and a minimum value of -1,135. These values indicate that environmental costs range from -1,135 to 3,518, with a median of 0,014. The mean environmental cost is 0,082, with a standard deviation of 0,433, indicating that the data are heterogeneous. The good corporate governance variable has a maximum value of 12,374 and a minimum value of 5,709. This indicates that good corporate governance ranges from 5,709 to 12,374, with a median of 8,467. The mean value of good corporate governance is 8,802, with a standard deviation of 1,573, indicating that the data are relatively homogeneous.

## Regression Model Estimation Tests

In estimating regression models in panel data research, three model approaches can be applied, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the most appropriate model for estimating panel data regression, three statistical tests can be conducted, namely the Chow test, the Hausman test, and the Lagrange Multiplier (LM) test (Basuki, 2021).

## Chow Test

**Table 2**  
**Results of the Chow Test**

Effect Test	Statistic	d.f.	Prob.
Cross-section F	15,567	(27,53)	0,000
Cross-section Chi-square	183,914	27	0,000

Based on the results in Table 3, the Chow test shows that the probability value of the cross-section chi-square is 0,000, which is below the 0,05 significance level. Consequently, it can be concluded that the Fixed Effect Model (FEM) is more suitable than the Common Effect Model (CEM).

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**Hausman Test**

**Table 3**  
**Results of the Hausman Test**

Effect Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1,864	3	0,601

Based on the results presented in Table 4, the Hausman test indicates that the probability value for the cross-section random effect is 0,601, which exceeds the 0,05 significance level. Therefore, it can be concluded that the Random Effect Model (REM) is more appropriate than the Fixed Effect Model (FEM).

**Lagrange Multiplier (LM) Test**

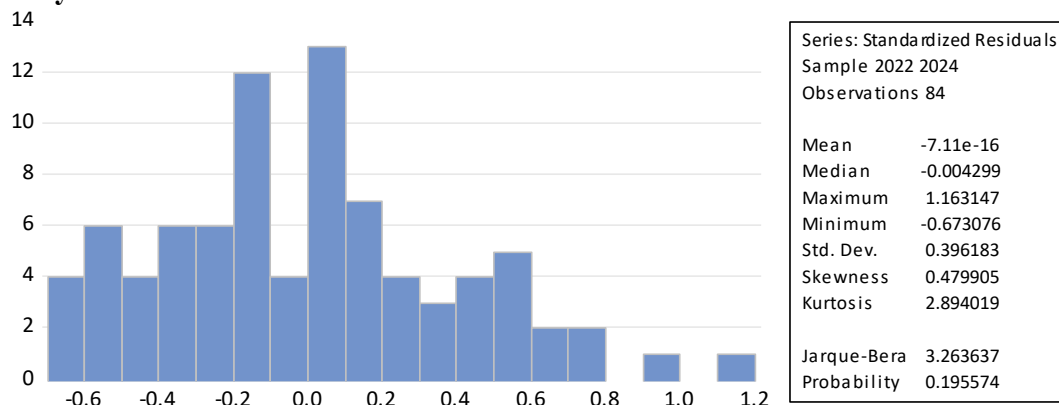
**Table 4**  
**Results of the Lagrange Multiplier (LM) Test**

	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	54,894 (0,000)	0,016 (0,901)	54,909 (0,000)

Based on the results presented in Table 5, the Lagrange Multiplier (LM) test shows that the probability value of the cross-section Breusch–Pagan statistic is 0,000, which is below the 0,05 significance level. This indicates that the Random Effect Model (REM) is more suitable than the Common Effect Model (CEM). Consequently, the Random Effect Model (REM) was selected as the final estimation model in this study.

**Classical Assumption Tests**

**Normality Test**



**Figure 2**

**Results of the Normality Test**

Based on the normality test results illustrated in Figure 1, the probability value obtained from the graph is 0,196, which exceeds the 0,05 significance level. This result indicates that the data used in this study are normally distributed and satisfy the normality assumption, thereby confirming that the regression model is appropriate for hypothesis testing.

**Multicollinearity Test**

**Table 5**  
**Results of the Multicollinearity Test**

	CED	EC	GCG
CED	1,000	-0,018	0,312
EC	-0,018	1,000	0,008
GCG	0,312	0,008	1,000

Based on the multicollinearity test results reported in Table 6, the correlation coefficients among the independent variables are below the threshold of 0,90. This finding indicates the absence of multicollinearity among the independent variables. Therefore, it can be concluded

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that the research model is free from multicollinearity problems and satisfies the multicollinearity assumption.

### Heteroskedasticity Test

Heteroskedasticity testing in this study was performed using the Glejser method. The results of the heteroskedasticity test are reported in the following table.

**Table 6**  
**Results of the Heteroskedasticity Test**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0,405	0,487	0,832	0,408
CED	0,199	0,121	1,639	0,105
EC	0,007	0,015	0,480	0,632
GCG	0,001	0,218	0,005	0,996

Based on the results presented in Table 7, the probability values for all independent variables exceed the 0,05 significance level. Accordingly, it can be concluded that the regression model is free from heteroskedasticity issues and satisfies the assumption of homoskedasticity.

### Hypothesis Testing

The hypothesis testing in this study comprises the t-test, F-test, and the coefficient of determination analysis. The following section presents the results of the t-test based on the Random Effect Model (REM) approach.

**Table 7**  
**Results of the t-Statistic Test**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2,222	0,774	-2,869	0,005
CED	-0,151	0,159	-0,951	0,345
EC	-0,028	0,019	-1,442	0,153
GCG	0,945	0,349	2,709	0,008

Based on the estimation results presented in Table 8, the regression equation of this study can be formulated as follows:

$$FV = -2,222 - 0,151 * CED - 0,028 * EC + 0,945 * GCG + e$$

Notes:

- NP = Firm Value
- CED = Carbon Emission Disclosure
- EC = Environmental Cost
- GCG = Good Corporate Governance
- e = error

**Table 8**  
**Results of the F-Statistic Test**

R-squared	0,105
Adjusted R-squared	0,071
S.E. of regression	0,162
F-statistic	3,112
Prob (F-statistic)	0,031

Based on the results presented in Table 9, the calculated F-statistic is 3,112, exceeding the critical F-table value of 2,719. In addition, the probability value of the F-statistic is 0,031, which is below the established significance level of 0,05 ( $0,031 < 0,05$ ). These results indicate that, when tested simultaneously, carbon emission disclosure, environmental costs, and good corporate governance have a statistically significant effect on firm value.

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Furthermore, Table 9 reports an adjusted R-squared value of 0,071, or 7,1%, suggesting that the independent variables included in this model, carbon emission disclosure, environmental costs, and good corporate governance, explain 7,1% of the variation in firm value. The remaining 92,9% of the variation is attributable to other factors not captured in the research model.

### The Effect of Carbon Emission Disclosure on Firm Value

Carbon emission disclosure (CED) has a probability value of 0,345 which is greater than 0,05 and a calculated  $t_{\text{value}}$  that is greater than  $-t_{\text{table}}$  ( $-0,951 > -1,990$ ). These results indicate that carbon emission disclosure does not have a significant effect on firm value. Therefore, **H1 is rejected**.

This finding suggests that information regarding carbon emissions has not yet become a factor that adds value for investors in evaluating companies. The practice of carbon emission disclosure in Indonesia remains inconsistent, and the level of transparency varies widely across firms. This condition makes it difficult for investors to objectively assess whether such disclosures genuinely reflect a company's commitment to sustainability or merely serve as a formality of reporting (Akib et al., 2025).

The insignificant effect of carbon emission disclosure on firm value is also related to the low level of investor literacy and awareness regarding carbon emission issues. Information related to carbon emissions is still relatively unfamiliar to many stakeholders in Indonesia and has not yet become a primary basis for investment decision-making. Investors in Indonesia tend to prioritize financial indicators that directly reflect profitability, such as earnings, cash flow, and capital gain opportunities. As a result, carbon emission data is often considered less relevant in evaluating business performance, particularly in the short term, and sustainability aspects have not yet become a determining factor in market valuation (Rangga & Kristanto, 2023).

Some companies disclose carbon emissions solely to fulfill regulatory requirements or legitimacy purposes rather than as part of a strong sustainability strategy. Such disclosures, which tend to be superficial and limited, fail to provide a strong positive signal to the market. The lack of socialization and management understanding regarding the urgency of environmental issues also contributes to the low quality of disclosure. Consequently, the limited depth of information fails to create a positive perception that could enhance firm value (Gunawan & Berliyanda, 2024).

From the stakeholder theory perspective, these findings reflect a gap between theoretical concepts and empirical conditions. Conceptually, companies that consider stakeholder interests, including environmental concerns, should gain social legitimacy that ultimately increases firm value. However, this study shows that environmental issues have not been fully reflected in the considerations of investors and key stakeholders. Although companies have allocated resources for sustainability activities and environmental reporting, the economic benefits are not yet perceived as substantial by the market. These findings are consistent with studies by Afnilia & Astuti (2023), Rangga & Kristanto (2023), Gunawan & Berliyanda (2024), and Yolifiandri et al. (2025), which conclude that carbon emission disclosure does not have a significant effect on firm value.

### The Effect of Environmental Costs on Firm Value

Environmental cost (EC) has a probability value of 0,153, which is greater than 0,05, and a calculated  $t_{\text{value}}$  that is greater than  $-t_{\text{table}}$  ( $-0,951 > -1,990$ ). This indicates that environmental costs do not have a significant effect on firm value. Therefore, **H2 is rejected**.

This finding suggests that corporate expenditures on environmental management activities have not yet become a primary consideration for investors in assessing a company's prospects. Investors in Indonesia still prioritize financial performance indicators such as revenue growth, earnings stability, and business expansion, which directly reflect profit

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potential, rather than cost allocations for environmental activities. Therefore, environmental costs are still viewed as non-financial activities that are not considered capable of strengthening firm performance in the short term (Akib et al., 2025).

The basic materials sector is closely associated with environmental issues, making environmental expenditures perceived as a normal consequence of operations rather than a competitive advantage that can enhance firm value. These expenditures are still understood as a form of responsibility arising from potential environmental damage, rather than as a strategic effort to improve corporate reputation or competitiveness (Ahmad et al., 2024). Not all companies allocate and report environmental costs separately and consistently. Although Presidential Regulation No. 47 of 2012 mandates social and environmental responsibility, its implementation and disclosure remain voluntary. As a result, the quality and comparability of environmental cost reporting across firms are not uniform. This inconsistency makes it difficult for investors to assess the effectiveness of such expenditures as a tool for enhancing firm value (Saputri et al., 2023).

Large environmental costs are also not perceived as value-adding factors, as some investors view them as expenses that reduce profits (Pradnyawati & Werastuti, 2024). For instance, environmental costs amounting to IDR 158,330,000,000 incurred by PT Aneka Tambang Tbk. in 2024 demonstrate that large expenditures are not automatically interpreted by the market as positive signals if they are not accompanied by improvements in financial performance. The effectiveness of environmental costs largely depends on the allocation proportion, where prevention and detection costs should be increased to minimize environmental failure costs that may burden the company.

From the stakeholder theory perspective, these findings indicate a discrepancy between theoretical expectations and empirical reality. Conceptually, environmental costs are expected to strengthen a company's legitimacy in the eyes of society, regulators, and other stakeholders, thereby enhancing firm value. However, in practice, reputational benefits have not been sufficient to offset the financial impact of high environmental costs. This condition suggests that stakeholder attention to environmental issues has not been fully reflected in market valuation mechanisms. Investors remain focused on operational efficiency and financial performance, leading to environmental cost allocation being perceived more as a burden than a strategic investment. These findings are consistent with studies by Saputri et al. (2023), Pradnyawati & Werastuti (2024), and Anggriani & Syaipudin (2025), which conclude that environmental costs do not have a significant effect on firm value.

### **The Effect of Good Corporate Governance on Firm Value**

Good Corporate Governance (GCG) has a probability value of 0,008, which is less than 0,05, and a calculated  $t_{\text{value}}$  that is greater than  $t_{\text{table}}$  yaitu  $2,709 > 1,990$ . This indicates that good corporate governance has a positive and significant effect on firm value. Therefore, H3 is accepted.

The implementation of stronger governance practices leads to an increase in firm value as perceived by the market. GCG is a system that ensures company management is conducted in a transparent, accountable, responsible, and fair manner. Strong governance practices guarantee shareholders' rights to obtain accurate and timely information. Open access to information builds investor confidence that the company is managed professionally and free from managerial practices that may harm external parties (Gusriandari et al., 2022).

Good Corporate Governance (GCG) also serves as a positive signal to the market. Effective governance practices, such as transparency, board effectiveness, the presence of an audit committee, and strong monitoring mechanisms, enhance investor confidence that managerial deviations can be minimized. The presence of effective governance reduces uncertainty and creates the perception that the company is capable of maintaining long-term

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performance. Market responses to this confidence are reflected in increased stock prices, which in turn contribute to higher firm value (Parwata & Anggara, 2022).

The positive effect can be explained through the role of various internal elements of GCG. High managerial ownership aligns management interests with those of shareholders, leading to decisions that focus on increasing firm value. Institutional ownership acts as a strong monitoring mechanism that can prevent managerial misconduct and enhance accountability (Purwaningrum & Haryati, 2022). Shareholders expect the board of directors to optimize company performance, and its presence generates positive responses from potential investors in the capital market (Purwaningsih & Fadli, 2022). Independent commissioners support objective oversight and ensure proper governance implementation (Parwata & Anggara, 2022). The audit committee contributes to improving the quality of financial reporting, internal control systems, and the reliability of corporate information, which are key considerations for investors in evaluating firm value (Yolifiandri et al., 2025).

Theoretically, these results are consistent with agency theory, which explains that governance mechanisms are necessary to align the interests of management and shareholders. Good Corporate Governance (GCG) reduces agency conflicts through stronger monitoring and control mechanisms, thereby preventing decisions that could harm the company. The reduction of such conflicts enhances company performance and ultimately has a positive impact on firm value (Fana & Prena, 2021).

These findings reinforce that Good Corporate Governance (GCG) is not merely implemented to comply with regulatory requirements but also serves as a crucial strategy for improving company performance and attracting investor confidence. This study is consistent with the findings of Fana & Prena (2021), Parwata & Anggara (2022), Apriani & Khairani (2023), and Buren et al. (2023), which demonstrate that GCG has a significant positive effect on firm value.

## **CONCLUSION**

Based on the results of the analysis and discussion conducted in this study, it can be concluded that carbon emission disclosure and environmental costs do not have a significant effect on firm value. This finding indicates that information related to carbon emission disclosure and environmental costs has not yet become a primary consideration for investors in assessing firm value. In contrast, good corporate governance has a positive and significant effect on firm value. The implementation of sound corporate governance practices enhances investor confidence, which in turn contributes to an increase in firm value.

For future research, it is recommended to focus on different industrial sectors and extend the observation period so that the collected data better reflect long-term conditions. Future studies may also consider incorporating additional variables, such as sustainability reporting disclosure, environmental performance, and green investment, as well as financial performance-related variables, including profitability and leverage, to provide a more comprehensive understanding of the determinants of firm value.

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