ECO-EFFICIENCY, GREEN INNOVATION AND CARBON EMISSION DISCLOSURE ON COMPANY VALUE IN HIGH PROFILE INDUSTRIAL COMPANIES

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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh *eco-efficiency, green innovation* dan *carbon emission disclosure* terhadap nilai perusahaan pada perusahaan industri high profile yang terdaftar di Bursa Efek Indonesia tahun 2018-2022 Teknik pengambilan sampel dalam penelitian ini menggunakan purposive sampling. Teknik analisis yang digunakan dalam penelitian adalah analisis regresi linear berganda dengan analisis yang diuji yaitu asusmsi klasik yang meliputi uji normalitas, uji multikolinearitas, uji autokorelasi dan uji heteroskedastisitas. Untuk pengujian hipotesis terdiri dari analisis koefisien determinasi, uji parsial (t) dan uji simultan (f). Populasi penelitian yaitu perusahaan industri high profile periode 2018-2022 dengan jumlah sampel sebanyak 100 data. Hasil penelitin menunjukkan bahwa secara parsial *eco-efficiency* tidak berpengaruh terhadap nilai perusahaan, *green innovation* berpengaruh terhadap nilai perusahaan, *carbon emission disclosure* berpengaruh terhadap nilai perusahaan dan secara simultan *eco-efficiency, green innovation* dan *carbon emission disclosure* berpengaruh terhadap nilai perusahaan.
Kata kunci: eco efficiency, green innovation, carbon emission disclosure, nilai perusahaan
JEL Code: M41, O14, C12

Abstract

This study aims to determine the effect of eco-efficiency, green innovation, and carbon emission disclosure on company value in high-profile industrial companies listed on the Indonesia Stock Exchange in 2018-2022. The sampling technique used in this research was purposive sampling. The analytical technique used in the research is multiple linear regression analysis with the analysis tested, namely classical assumptions, which include normality tests, multicollinearity tests, autocorrelation tests, and heteroscedasticity tests. Hypothesis testing consists of analysis of the coefficient of determination, partial test (t), and simultaneous test (f). The research population is high-profile industrial companies for the 2018-2022, with a sample size of 110 data. The study results show that partially eco-efficiency does not affect company value, green innovation affects company value, carbon emissions disclosure affects company value, and simultaneously, eco-efficiency, green innovation, and carbon emissions disclosure affect company value.
Keywords: eco-efficiency, green innovation, carbon emission disclosure, company value.
JEL Code: M41, O14, C12

INTRODUCTION

In the era of globalization, global warming has become a phenomenon that threatens the balance of the earth because global temperatures continue to increase from year to year. This is caused by increased emissions of dangerous gases, which produce a greenhouse effect (Utina, 2019). Greenhouse gases arise due to the burning process of energy sources such as petroleum, coal, and natural gas. The impact is that heating cannot be transmitted to outer space but is reflected to the

earth's surface. The gas that has the most significant influence in this case is carbon dioxide (Mulyani, 2021).

Ignorance of the environmental consequences of industrial activities creates rapid industrial growth and increasing pollution levels resulting from production processes. This causes air pollution and creates significantly dangerous levels of water pollution. Apart from achieving profits, leading companies must assume responsibility for the environment and sustainability to achieve the triple bottom line principle (Damas et al., 2021). High-profile companies, including those in the mining, agribusiness, chemical industry, food and beverage products, aviation, and communications sectors, often have large workforces. Therefore, high-profile companies tend to compile corporate sustainability reports actively. The triple bottom line concept includes three crucial elements: economic prosperity, environmental quality, and social justice. In other words, assessing the value of a company does not only focus on economic aspects but also considers social and environmental dimensions. These three elements are the basis for building a sustainable business (Latifah, 2020).

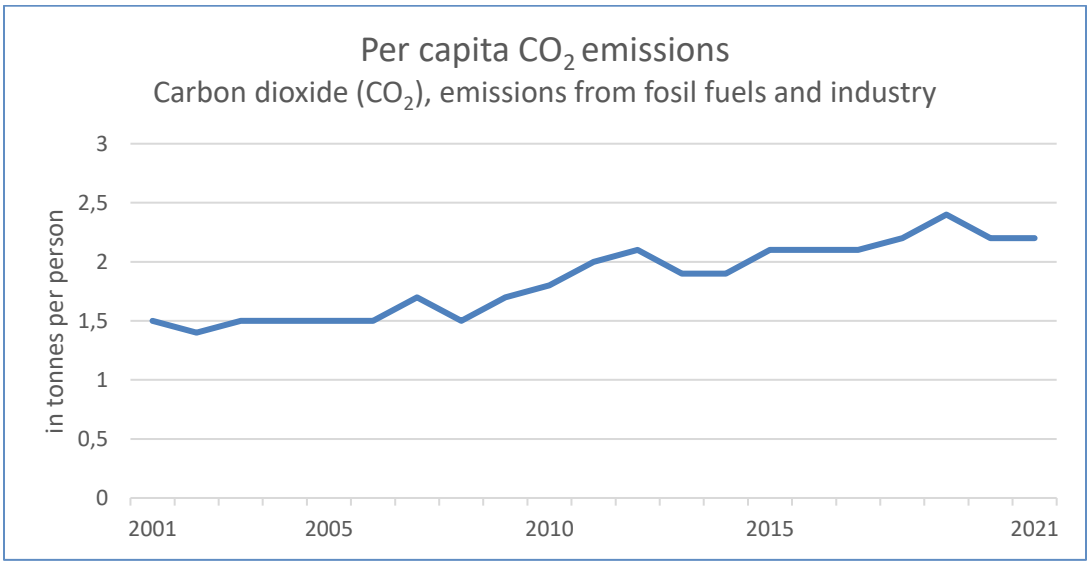


Figure 1. Indonesia's CO2 emissions per capita 2001-2021
Source: https://ourworldindata.org/

As seen in Figure 1, entering the 21st century, Indonesia's CO2 emission level per capita increased until its peak in 2019 at 2.4 t. This increase comes from increased consumption of fossil fuels, gas use, and coal use (Ritchie & Roser, 2022). The emergence of adverse effects from company operations has increased public awareness. The information revealed regarding environmental impacts will be a consideration for investors in making investment decisions (Trisyanto, 2023). Company value can be influenced by the logical consequences of investors' decisions, where company value reflects the actual value of assets when the company is sold or the company's share price (Agustia et al., 2019). When share prices increase, the company's value will also increase, and profits for shareholders will increase (Maharani, 2022).

Corporate social responsibility becomes crucial when companies strive to implement green innovation to reduce their negative environmental impact (Ramadhani et al., 2022). Green theory can be implemented by implementing sustainable company strategies to image positive environmental performance. This aims to increase company value and attract investors to invest in companies with an excellent reputation for environmental performance. In addition, regulators are essential in determining tolerance limits for the amount of carbon emissions produced and enforcing compliance with environmental regulations (Khairiyani et al., 2019).

Eco-efficiency, green innovation, and carbon emission disclosure of high-profile companies in 2018-2022 have increased yearly. However, the company's value experienced a decrease during the

2018-2020 period, increasing again in 2022. This incident contradicts the theory that improving environmental performance should positively impact company value (Apriandi & Hexana Sri Lastanti, 2023). Research (Yuliandhari et al., 2023) states that eco-efficiency, green innovation, and carbon emission disclosure influence company value, while research (Apriandi & Hexana Sri Lastanti, 2023) states that eco-efficiency, green innovation, and carbon emission disclosure do not affect company value. This shows a gap from previous research.

There has been much research on the influence of an excellent environmental management system using two different sources: content analysis. Hence, it needs to be reviewed using one equivalent source, namely sustainability reports and using high-profile industrial companies as research objects. This was done as a novelty from previous research. This research aims to empirically prove the company's efforts to deal with the problem of global warming by implementing sustainable practices such as Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure on Company Value in high-profile companies listed on the Indonesia Stock Exchange 2018-2022, as well as how investors look at environmental aspects in making investment decisions.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Green Theory

Green Theory was first put forward by Goodin in 1992. Green Theory is a theory that emerged as a response to the phenomenon of the global environmental crisis at the international level. Within the Green Theory framework, the environment is considered a critical aspect that is the primary basis for thinking (Tsalatsa, 2019). The environmental crisis is triggered by various human behaviors and activities, where ecocentrism is the primary basis of the Green Theory (Agraria et al., 2020). Ecocentrism is a view that focuses on the environment or ecology (Bourdeau, 2019). Green theory criticizes industrialization and rapid economic growth as factors causing environmental damage (Sulasmi et al., n.d.). Companies are one of the parties that play a significant role in continuing to exploit natural resources. Companies consumption of energy and natural resources has resulted in environmental degradation. Carbon emissions produced by companies during the production process are released into the atmosphere, causing global warming and depletion of the ozone layer. As a result, this contributes to disasters due to climate change (Dyer, 2020).

In line with green theory, the aim of conveying corporate social responsibility through sustainability reports is to provide an overview of the social responsibility actions the company has carried out during a period (Hana et al., 2023). On this basis, green theory can motivate company management to disclose information regarding the carbon pollution produced (Widyadhana, 2022). Besides, green theory encourages companies to innovate to reduce adverse environmental effects (Ramadhani et al., 2022). Green theory can be implemented by implementing eco-efficiency in companies, reflecting an excellent environmental performance image and increasing company value (Zhang & Xu, 2022). The relationship between green theory and company value is that investors will believe in the company's ability to maintain sustainability and how companies can see opportunities from environmental performance; improving a company's environmental performance will increase investor interest, and company value will also increase (Husnaini & Tjahjadi, 2021).

Eco-Efficiency

Eco-efficiency is a management philosophy that encourages business activities to achieve economic benefits while improving environmental quality so that companies can be more responsible for the resulting ecological impacts (Damas et al., 2021). Eco-efficiency is one of the significant benchmarks in evaluating environmental performance. Companies that place environmental performance as a priority in their production processes are expected to be able to manage resources with efficiency, wisdom, and sustainability for every resource and energy used (Satrio & Kunto, 2020). Assessed based on the company's involvement in the ISO 14001 certification program, information

regarding this participation can be found in the company's annual report or sustainability report and other sources. This measurement uses a dummy variable, where companies that implement eco-efficiency practices are given a value of 1, while companies that do not implement them are given a value of 0 (Zen & Sofie, 2023).

Green Innovation

Green innovation refers to production processes, systems, or techniques that undergo modifications to reduce the negative impact on the environment that a company may produce (Yanti et al., 2023). Several indicators will assess whether a company has implemented green innovation (Hermawan et al., 2018). The results of this content analysis will be measured in the form of ratios, with indicators consisting of (1) Use of new technology in the production process to reduce energy, water, and waste consumption, (2) Use of more environmentally friendly materials in products (for example, materials that do not cause pollution or is dangerous), (3) Use of environmentally friendly product packaging (such as recyclable paper and plastic), and (4) Ability to recycle or recondition components or materials in the production process (Apriandi & Lastanti, 2023).

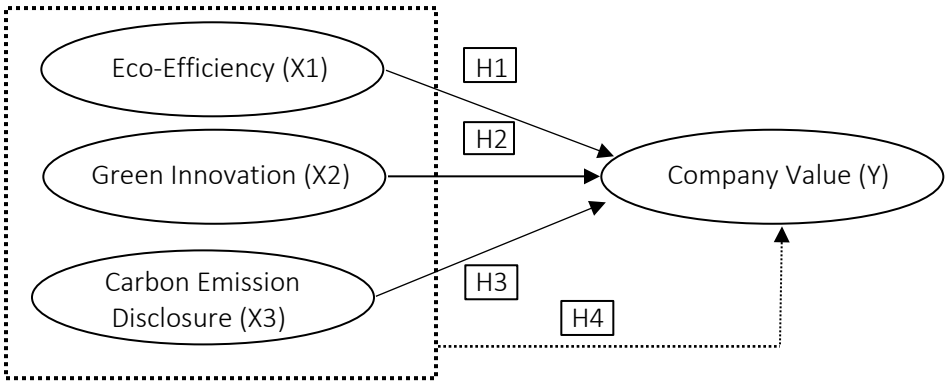
Carbon Emission Disclosure

Carbon emission disclosure is a company's action to record, acknowledge, disclose, measure, and present information about the amount of carbon emissions produced by the company (Damas et al., 2021). Carbon emissions are the quantity of carbon gas produced and released into the atmosphere due to various human activities, especially in company operations (Almaeda et al., 2023). Every year, the amount of carbon emissions produced continues to increase. Because companies make a significant contribution to increasing carbon emissions, they must also play an active role in efforts to reduce them. Disclosure of carbon emissions will provide a positive image for the company, and investors will feel the company's sustainability and be more interested in investing (Asyari & Hernawati, 2023). The carbon emissions disclosure index has five categories with a total of 18 elements, given a score of 1 for each disclosed element and a score of 0 for not disclosed elements. The scores are added and divided by the total elements disclosed to get the resulting ratio (Bahriansyah & Lestari Ginting, 2022)

Company Value

Company achievement can be measured through company value, which can be seen from elements in financial reports such as the number of shares outstanding and the level of assets and liabilities owned by the company (Yuliandhari et al., 2023). Company value is investors' perception of how successful the company is, which is closely related to its share price (Rohaeni et al., 2019). High company value reflects good performance. Company value can provide maximum prosperity for shareholders if the share price increases. The higher the company's share price, the greater the prosperity of shareholders (Damayanthi, 2019). The interpretation of company value can also be conveyed as the sales value of a company, measured through Tobin's Q ratio. This ratio compares the market value of shares by multiplying the number of shares outstanding by the closing price, which can be found via Yahoo Finance. This ratio also involves the total book value of assets and liabilities recorded in the financial statements (Kurnia et al., 2021).

In academic research, it is a paradigm or framework of thought derived into a research model. The value of a company does not only focus on economic aspects but also considers social and environmental dimensions by implementing sustainable practices such as Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure. Therefore, the framework for this research is as follows:



Frame 2. Framework of Thought

Based on the research framework that has been presented, the hypotheses proposed in this research can be detailed as follows:

The Effect of Eco-Efficiency on Company Value

The Eco-Efficiency concept design is used to manage company production, control environmental pollution, improve company performance, and increase the company's market value (Atiningsih et al., 2023). Suppose companies can adopt and apply the Eco-Efficiency concept. In that case, this will increase company value and cause companies to use resources more efficiently in their production processes (Zen & Sofie, 2023). Based on previous research, conflicting results were obtained regarding the impact of eco-efficiency on company value. The research results state that eco-efficiency has a positive and significant effect on company value (Zha et al., 2020), while others (Yamasaki et al., 2021)say that eco-efficiency on company value has a significant negative impact. So, from the explanation above, it can be concluded that the first hypothesis in this research is as follows:

H_1: Eco-Efficiency influences Company Value.

The Effect of Green Innovation on Company Value

Green innovation prioritizes innovation that provides economic benefits and creates competitive advantages while reducing environmental impacts (Husnaini & Tjahjadi, 2021). Companies that implement green innovation will carry out a recycling process where valueless waste can be reused, increase profits, and improve environmental performance. The better a company's environmental performance means, the higher the company's value, so many investors are interested in the company (Tonay & Murwaningsari, 2022). Investors will consider a company to be sustainable because its business processes are accepted by society (Yuliandhari et al., 2023). A study conducted (Zhang & Xu, 2022) shows that green innovation positively impacts company value. Furthermore, research (Yao et al., 2019) shows that green innovation harms company value. So from the explanation above, it can be concluded that the second hypothesis in this research is as follows:

H_2: Green Innovation Influences Company Value

The Effect of Carbon Emission Disclosure on Company Value

The relationship between carbon emission disclosure and company value guarantees increased company value (Yuliandhari et al., 2023). Carbon emission disclosure is the voluntary disclosure, recording, and presentation of carbon emissions produced by a company (Almaeda et al., 2023). To avoid a bad image, lawsuits, and adverse market reactions, companies try to disclose their CO2 emissions. Some investors are attracted to companies that demonstrate environmental responsibility. Disclosure of environmental performance has a positive value for the company and ultimately affects company value (Hardiyansah et al., 2021). Research conducted by (Desai et al., 2022) revealed a positive influence between carbon emission disclosure and company value. However, research (Kurnia

et al., 2020) shows that carbon emission disruption significantly negatively affects company value. So from the explanation above, it can be concluded that the third hypothesis of this research is as follows:
H_3: Carbon Emission Disclosure Affects Company Value

The Influence of Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure on Company Value

Companies implementing an internationally harmonized environmental management system can improve their corporate reputation and be seen as more sustainable. Disclosure of environmental performance is also considered to make the company's efforts acceptable to societal norms (Satrio & Kunto, 2020). According to green theory, the better a company's environmental performance, the more attractive it is to investors and the higher its value (Widyadhana, 2022). Research (Yuliandhari et al., 2023) states that eco-efficiency, green innovation, and carbon emission disclosure influence company value, while research (Apriandi & Lastanti, 2023) states that eco-efficiency, green innovation, and carbon emission disclosure do not affect company value. So from the explanation above, it can be concluded that the fourth hypothesis of this research is as follows:
H4: Eco-efficiency, Green Innovation, and Carbon Emission Disclosure influence The value of the company

RESEARCH METHODS

The method used in this research is a quantitative approach. The data used is secondary data. The population used in this research are high-profile companies, including oil and other mining companies, the chemical industry, aviation, agribusiness, food and beverage products, media, and communications listed on the Indonesia Stock Exchange (BEI) for the 2018-2022 period during the year of observation. The total population in this sector is 157 companies, with a suitable number of samples taken in this research of 20 companies for five years, resulting in 100 observation data. The sampling method used was purposive sampling with criteria, high profile industrial companies registered on the IDX, publishing sustainability reports consecutively during 2018-2022, and not experiencing loss. The data collection is from sustainability reports and annual financial reports taken and audited for 2018-2022, respectively. The variables used are Eco-Efficiency (X1), Green Innovation (X2), Carbon Emission Disclosure (X3), and Company Value (Y). Observation data is processed using Statistical Product and Service Solution (SPSS).

RESULTS AND DISCUSSION

Research Result

Descriptive Statistical Test

Table 2. Descriptive Statistical Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Eco-Efficiency	100	0,00	1,00	0,9200	0,27266
Green Innovation	100	0,25	1,00	0,6325	0,21158
Carbon Emission Disclosure	100	0,11	,89	0,5313	0,20337
Nilai Perusahaan	100	0,12	17,68	1,6742	2,93668
Valid N (listwise)	100				

From Table 2, the descriptive statistical test results above show the minimum Eco-Efficiency value, namely 0,00, and the maximum value, namely 1,00, while the average Eco-Efficiency is 0,92, which means that out of 100 data observed, there are 92% of observation data that have ISO 14001 certification, and a standard deviation of 0,27266. The minimum Green Innovation value is 0,25, which occurs at PT. Integra Indocabinet, Tbk, and PT. Wijaya Karya, Tbk, and a maximum of 1,00 occur at PT. Unilever Indonesia, Tbk. The average Green Innovation is 0,6325, and the standard deviation is 0,21158. The minimum value of Carbon Emission Disclosure is 0,11, which occurs at PT. Indika Energy,

Tbk, 2018, had a maximum value of 0,89 at PT. Bumi Resources, Tbk in 2022, while the average Carbon Emission Disclosure is 0,5313 and the standard deviation is 0,20337. The minimum value of Company Value is 0,12, which occurs at PT. PP London Sumatra, Tbk in 2022, and the maximum value of 17,68 occurred at PT. Unilever Indonesia, Tbk in 2018, while the average Company Value was 1,6742 and the standard deviation was 2,93668.

Classic Assumption Test

Normality Test

Table 3. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		100
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,49137227
Most Extreme Differences	Absolute	,062
	Positive	,055
	Negative	-,062
Test Statistic		,062
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Table 3 shows the normality test results for this research data, with a significance result of 0,200 > 0,05. This means the sample data in this study is usually distributed because the normality assumption can be met if the significance value is > 0,05.

Multicollinearity Test

Table 4. Multicollinearity Test Results

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-,909	,887		-1,025	,308		
	Eco-Efficiency	1,175	,774	,109	1,517	,133	,941	1,063
	Green Innovation	10,874	1,143	,783	9,509	,003	,717	1,395
	Carbon Emission Disclosure	-10,118	1,202	-,701	-8,420	,005	,703	1,423

a. Dependent Variable: Nilai Perusahaan

Table 4 shows the results of the multicollinearity test where Eco-Efficiency's variance inflation factor (VIF) value is 1,063, Green Innovation is 1,395, and Carbon Emission Disclosure 1,423 is between the values 1-10. The tolerance value for Eco-efficacy is 0,941; for green innovation, it is 0,717; for carbon emission disclosure, it is 0,703; and the tolerance value is > 0,01. So, it can be concluded that the multiple linear regression analysis in this study is free from multicollinearity tests because the

assumption is that data free of multicollinearity is those with a VIF value < 10 and a tolerance number > 0,1.

Heteroscedasticity Test

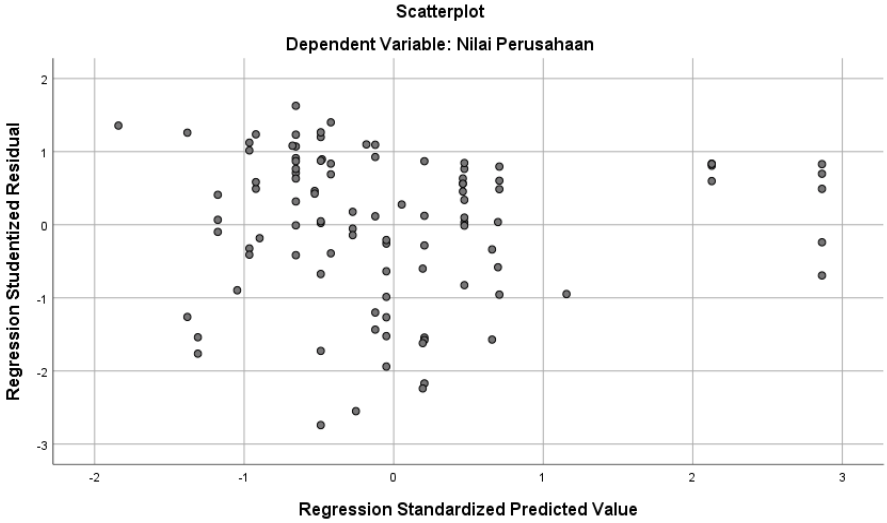


Figure 3. Heteroscedasticity Test Results

Figure 3 shows the results of the heteroscedasticity test. The points on the graph do not create a particular pattern, such as widening, then narrowing, and spreading above and below the number 0. Therefore, it can be assumed that the data in this study does not contain heteroscedasticity.

Autocorrelation Test

Table 5. Autocorrelation Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,730[a]	,533	,518	2,03794	1,988

a. Predictors: (Constant), Carbon Emission Disclosure, Eco-Efficiency, Green Innovation

b. Dependent Variable: Nilai Perusahaan

Table 5 shows the results of the autocorrelation test, which obtained a DW value of 1,988. Next, this value will be compared with the table value at 5% significance with the formula (k; N), the number of independent variables or k = 3 while the number of samples or N = 100, so (k; N) = (3;100) the dL and dU values obtained are 1,613 and 1,736. So, the decision to make whether there is autocorrelation is DU < DW < 4–DU or 1,736 < 1,988 < 2,387. From this formula, it can be concluded that there is no autocorrelation because the DW value is greater than the DU value and less than (4-DU).

Hypothesis testing

Multiple Linear Regression Analysis Test

Table 6. Multiple Linear Regression Analysis Test Results

Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-,909	,887		-1,025	,308

	Eco-Efficiency	1,175	,774	,109	1,517	,133
	Green Innovation	10,874	1,143	,783	9,509	,003
	Carbon Emission Disclosure	-10,118	1,202	-,701	-8,420	,005

a. Dependent Variable: Nilai Perusahaan

Table 6 shows the results of multiple linear regression analysis tests obtained by the multiple regression equation model as follows:

$$Y = -0,909 + 1,175X1 + 10,874X2 + -10,118X3$$

Based on the multiple linear regression equation above, it can be interpreted as follows: (1) The constant coefficient of -0,909 shows a negative value. If one variable increases Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure with the assumption that the other variables are constant, then at that time, the Company Value will decrease by 0,909. (2) The Eco-Efficiency variable has a regression coefficient of 1,175, showing a positive value. If every increase in one Eco-Efficiency variable is assumed that the other variables are constant, then at that time, the Company Value will increase by 1,175. (3) The Green Innovation variable has a regression coefficient 10,874, showing a positive value. If every increase in one Green Innovation variable assumes that the other variables are constant, then the Company Value will increase by 10,874. (4) The Carbon Emission Disclosure variable has a regression coefficient of -10,118, showing a negative value. If every increase in one Carbon Emission Disclosure variable assumes that the other variables remain constant, then the Company Value will decrease by -10,118.

Coefficient of Determination Test (R2)

Table 7. Coefficient of Determination Test Results (R2)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,730[a]	,533	,518	2,03794	1,988

a. Predictors: (Constant), Carbon Emission Disclosure, Eco-Efficiency, Green Innovation

b. Dependent Variable: Nilai Perusahaan

Table 7 shows that the coefficient of determination test (R2) obtained that the Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure variables contributed 51,8% to Company Value, while other variables influenced the remaining 48,2%.

T Test (Partial)

Table 8. T Test Results (Partial)

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,909	,887		-1,025	,308
	Eco-Efficiency	1,175	,774	,109	1,517	,133
	Green Innovation	10,874	1,143	,783	9,509	,003
	Carbon Emission Disclosure	-10,118	1,202	-,701	-8,420	,005

a. Dependent Variable: Nilai Perusahaan

Table 8 shows the partial test results for the Eco-Efficiency variable, obtaining a T-count value of 1,517 < T-table 1,660 and a significance level of 0,133 > 0,05. So H_0 is accepted, and H1 is rejected.

Thus, it can be concluded that Eco-Efficiency does not affect Company Value. Then, the results of testing the Green Innovation variable obtained a T-count value of 9,509 > T-table 1,660 and a significance level of 0,003 < 0,05. So H_0 is rejected, and H2 is accepted. Thus, it can be concluded that Green Innovation positively affects Company Value. Meanwhile, the results of testing the Carbon Emission Disclosure variable obtained a T-count value of -8,420 > T-table 1,660 and a significance level of 0,005 < 0,05. So H_0 is rejected, and H3 is accepted. Thus, it can be concluded that Carbon Emission Disclosure harms Company Value.

F Test (Simultaneous)

Table 9. F Test Results (Simultaneous)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	455,078	3	151,693	36,524	,005[b]
	Residual	398,705	96	4,153		
	Total	853,784	99			

a. Dependent Variable: Nilai Perusahaan

b. Predictors: (Constant), Carbon Emission Disclosure, Eco-Efficiency, Green Innovation

Table 9 shows the results of the simultaneous test (F-Test), which obtained an F-calculation value of 36,524. There are also F-table values at the significant level and degrees of freedom df1 (variable-1) = 2 and df2 (n-k-1) = 100-3-1 = 96, so the F-table is F(2;96) = 3,091. The F-calculated value with the F-table is then compared to obtain a value of 36.524 > 3,091 or the F-calculated value > F-table. The significant value is 0,005 <0,05. So H_0 is rejected, and H4 is accepted. Thus, it can be concluded that Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure influence Company Value.

DISCUSSION

The Effect of Eco-efficiency on Company Value

The results of the partial test that has been carried out show that the T-count value < T-table shows that eco-efficiency does not influence company value. This is because implementing eco-efficiency requires large expenditures, thereby reducing income, and the benefits of eco-efficiency are challenging to translate into profitability. Investors are not interested in an excellent environmental management system because even though environmental performance will last a long time, the process is not by the basics of a company, namely reducing expenses to increase profits (Ramadhani et al., 2022). According to green theory, corporate social responsibility becomes essential when a company produces eco-efficiency to reduce negative environmental impacts. However, it cannot be denied, that investors will look for opportunities for large returns from a company by looking at the expenses incurred and the income generated. The results of this research are in line with research conducted by (Yamasaki et al., 2021) which states that eco-efficiency does not have a direct influence on company value and is not in line with research (Zha et al., 2020) which states that eco-efficiency has an effect on company value.

The Effect of Green Innovation on Company Value

The results of the partial tests that have been carried out show that the T-count > T-table value is positive, this shows that green innovation has a positive influence on company value. Companies that implement green innovation will carry out a recycling process where valueless waste can be reused and increase profits and increase company value. There are many positive benefits to be gained from implementing green innovation, apart from being able to support the sustainability of company performance, it can also increase investor interest in the company's business strategy. According to green theory, investors will believe in implementing green innovation because the company has carried out its social responsibilities, so that it can maintain substainability and see opportunities from

environmental performance (Husnaini & Tjahjadi, 2021). The results of this research are in line with research conducted by (Zhang & Xu, 2022) which states that green innovation has a positive effect on company value, and is not in line with research (Xie et al., 2022) which states that green innovation has a negative effect on company value.

The Effect of Carbon Emission Disclosure on Company Value

The results of the partial test that have been carried out show that the T-count value > T-table has a negative value; this shows that carbon emission disclosure harms company value. Disclosure of carbon emissions as proof of environmental responsibility harms company value because investors view disclosure of carbon emissions as bad news and not a profitable opportunity. According to green theory, the purpose of communicating carbon emissions is to provide an overview of the social responsibility actions that have been carried out by the company to attract investors' attention to the company's sustainability, but investors feel that companies that disclose too much detail and breadth are feared to reduce the value of the company (Hana Diaz Amirah et al., 2023). This research is in line with research conducted (Kurnia et al., 2020) which states that carbon emission disclosure harms company value, and is not in line with research (Desai et al., 2022) which states that carbon emission disclosure has a positive effect on company value.

The Influence of Eco-Efficiency, Green Innovation, and Carbon Emission Disclosure on Company Value

The results of the simultaneous tests carried out showed that the F-count > F-table value, and the research results showed that eco-efficiency, green innovation, and carbon emission disclosure simultaneously influenced company value. The company's efforts to implement eco-efficiency by implementing a more efficient production process will reduce the company's negative impacts, thereby making the company more sustainable and increasing company value (Yao et al, 2019). The company's efforts to produce environmentally friendly products by implementing green innovation will be considered as the company's responsibility towards the environment, this will increase investor confidence and company value (Xie et al., 2022). Carbon emission disclosure fulfills the company's responsibility towards the environment and will be perceived as good news by investors (Hardiyansah et al., 2021). Disclosure of environmental performance is also considered to make the company's efforts acceptable to societal norms (Zen & Sofie, 2023). According to green theory, the better a company's environmental performance, the more investors will pay attention to it and its value will increase (Deswanto & Siregar, 2018). The results of this research are in line with research (Yuliandhari et al., 2023a) which states that eco-efficiency, green innovation and carbon emission disclosure simultaneously influence company value. And this is contrary to research (Apriandi & Hexana Sri Lastanti, 2023) which states that eco-efficiency, green innovation and carbon emission disclosure have no effect on company value.

CONCLUSION

This research was conducted to determine the effect of eco-efficiency, green innovation and carbon emission disclosure on company value in high profile industrial companies listed on the Indonesia Stock Exchange (BEI) in 2018-2022. Based on the test results and discussion, eco-efficiency cannot partially affect company value, implementing eco-efficiency requires large expenditures thereby reducing income, and the benefits of eco-efficiency are difficult to translate into profitability. Green innovation partially has a positive impact on company value, companies that implement green innovation will carry out a recycling process, where waste that has no economic value can be reused and add economic value and increase company value. Furthermore, carbon emission disclosure partially has a negative impact on company value, investor’s view carbon emission disclosure as bad news and not a profitable opportunity. Investors feel that companies that disclose too much detail and breadth can reduce the value of the company. Meanwhile, simultaneously eco-efficiency, green innovation and carbon emission disclosure have an impact on company value. Increasing a company's environmental performance can increase investor interest because improving environmental performance can improve the company's reputation and be seen as more sustainable, as a result

increasing company value.

SUGGESTION

In this research there are still many limitations, there are still many variables that have not been studied. It is hoped that future researchers can add other independent variables such as environmental responsibility, green intellectual capital and use companies from various sectors, as well as extend the observation period with the aim of obtaining a larger sample and creating a wider variety of conditions.

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