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Original Article

The Effect of Carbon Emission Disclosure and Environmental Performance on Financial Performance (Empirical Study of Energy, Basic Materials and Consumer Non-Cyclicals Sector Companies Listed on the Indonesian Stock Exchange in 2020-2022)

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Abstract: *This research aims to analyze the effect of carbon emissions disclosure and environmental performance on financial performance. The population of this research is energy, basic materials and consumer non-cyclical sector companies listed on the Indonesia Stock Exchange (BEI) in 2020-2022. The sampling method in this research used a purposive sampling method so that the samples obtained were 63 samples from 21 companies over a period of three years. Hypothesis testing was carried out using multiple linear regression tests and with SPSS Version 27 software tools. The research results showed that partial disclosure of carbon emissions had a positive and significant effect on financial performance, while environmental performance had no effect on financial performance. Simultaneously, disclosure of carbon emissions and environmental performance influences financial performance.*

Keywords: *Disclosure of Carbon Emissions, Environmental Performance, Financial Performance.*

I. INTRODUCTION

The increasingly rapid development of the global economy has given rise to increasingly fierce competition between companies, so companies' needs are becoming increasingly greater. In a competitive corporate environment, many companies must be able to manage their financial performance well and also manage the resources they have to operate more efficiently and effectively. Financial performance reflects how a company carries out its operations and achieves the results achieved through company operations. Companies that are able to generate stable profits and use their financial resources effectively will enjoy greater competitive advantages.

Environmental issues are increasingly becoming the focus of attention from various parties, including Indonesia's government, investors, and consumers. Currently, there is a lot of controversy in the industrial sector regarding excessive exploitation of nature, without being balanced with efforts to improve the environment or maintain natural balance, such as the impact of natural damage due to uncontrolled exploitation activities, as well as the negative impacts of waste and pollution which are detrimental to the surrounding environment (Pujiasih, 2013). Since 2002, the government has implemented a company environmental performance evaluation policy through the Company Performance Rating Assessment Program in Environmental Management (PROPER). Through PROPER, the public can assess companies based on their positive or negative reputation in environmental management.

Based on information contained on the official website of the Ministry of Environment and Forestry (www.menlhk.go.id), the number of companies participating in the PROPER program in 2022 has increased compared to the previous year. A total of 3,200 companies joined, showing an increase of 607 companies or 23% of the number of PROPER participants in the 2020-2021 period, which previously was 2,593 companies. Of the total 3,200 PROPER companies for the 2021-2022 period, 3,141 companies have been assessed, while 59 companies were not assessed for various reasons, such as involvement in law enforcement, not operating, or being suspended.

Within the scope of accounting science is a branch of science known as Social and Environmental Accounting. This branch of science emerged as a response to violations committed by companies related to environmental issues. Environmental violations on the part of a company can have a negative impact on the company's reputation and good image (Anggraeni, 2015). Therefore, social and environmental accounting focuses on developing accounting systems that enable companies to measure, report and monitor the environmental impact of their operations. One form of environmental disclosure that companies can carry out is carbon emissions disclosure. By disclosing carbon emissions, companies contribute to environmental transparency, helping stakeholders understand the environmental impact of their activities. Global warming is an issue that has long been of concern to the world and occurs as the average temperature on earth increases. One of the main causes of global warming is the increase in Green House Gases (GHG).

According to the Ministry of Investment and the Investment Coordinating Board (BKPM), in 2022, Indonesia will have the 8th highest contribution to carbon emissions in the world. On March 2 2023, the International Energy Agency (IEA) reported that carbon dioxide (CO2) emissions had increased significantly during 2022. Greenhouse gas emissions due to energy production rose 0.9 percent in 2022, reaching 36.8 gigatons and emissions of carbon dioxide from coal increased by 1.6%. Carbon dioxide is released when fossil fuels (natural gas, coal, or oil) are burned to power vehicles, planes, homes, and factories. When the gas enters the atmosphere, it traps heat, causing global warming(Arif, 2023).

Previous research conducted by Zahara (2022)shows that carbon emission disclosure positively affects financial performance. Meanwhile, the research results show Safutri et al. (2023)that carbon emission disclosure does not affect financial performance. Research conducted by Kinasih et al. (2022)shows that environmental performance positively affects financial performance. Strong financial performance will help build a positive reputation for the company, which in turn can increase its appeal in the community. There are research results conducted by Meiyana & Aisyah (2019)and Kaat & Sofian (2023)that environmental performance does not affect financial performance.
Previous research has shown mixed results in determining how much influence variables such as carbon emissions disclosure and environmental performance have on financial performance. Therefore, researchers are interested in conducting more in-depth research regarding the effect of carbon emissions disclosure and environmental performance on financial performance. This research aims to explore the impact and linkages between carbon emissions disclosure and environmental performance, taking into account differences in results from previous studies.

II. LITERATURE REVIEW

A) Stakeholder Theory

Stakeholder theory states that companies not only operate in their own interests but must also consider stakeholders' interests (Ghozali, 2007 in Bahri & Cahyani, 2016). *Stakeholder* theory emerged as a response to legal conditions that gave priority to the interests of shareholders while simultaneously ignoring the interests of suppliers, customers, employees, and the surrounding community. *Stakeholder* theory is an important basis for implementing Corporate Social Responsibility (CSR) because the information contained in CSR includes disclosures about corporate social responsibility that stakeholders and the surrounding community desire. The essence of corporate social responsibility disclosure is basically to provide the public with an overview ofhe social activities carried out by the company and their impact on the surrounding environment (Bahri & Cahyani, 2016).

B) Legitimacy Theory

Legitimacy theory is a company's efforts to continuously ensure that its operations are within the norms that apply in the society and environment in which the company operates, as well as to ensure that external parties accept the company's activities as legitimate and accepted (Deegan, 2004 in Bahri & Cahyani, 2016). Legitimacy theory originates from the concept of a social contract between companies and society, which can be explicit or implicit. In this framework, the sustainability and development of a company are determined by the benefits it can contribute to society through its performance (Ghozali & Chairi, 2007 in Wijayanti, 2016). Legitimacy theory states that the sustainability of an organization or company depends on the awareness held by the community. According to this view, businesses should ensure that their operations and output are deemed acceptable by the general public. In an effort to achieve this goal, companies use annual reports to reflect their commitment to environmental responsibility so that society will receive it favorably (Saputra, 2020).

C) Financial Performance

According to Fahmi (2014), financial performance is an effort to evaluate a company's compliance with correct and effective financial implementation principles. Financial performance is an assessment that determines the extent to which a company can manage and control its resources by adhering to good and appropriate financial principles. One of the parameters used as an indicator of financial performance is profitability. Profitability is the ability of a company to create profits in a certain period as a result of management policies, which include management of the company's liquidity, assets, and liabilities (Mastilah, 2016). Financial performance in this research is measured using ROA (Return on Assets) with the following formula (Brigham, 2010 in Meiyana, 2018):

$$\text{ROA}= \frac{\text{Laba Bersih}}{\text{Total Aset}}$$

D) Carbon Emission Disclosure

Carbon emission disclosure is an act of disclosure to evaluate the carbon emissions produced by a company and set targets for reducing carbon emissions (Cahya, 2017). Environmental disclosures have become important for companies around the world. By disclosing carbon emissions, companies can provide a more detailed picture of the environmental impact of their operational activities. This action provides a basis for more informed decision-making for the company and interested parties. In this research, carbon emission disclosure is measured by referring to a number of items taken from research conducted by Bae Choi et al. (2013), the *Carbon Disclosure Project* (CDP). The formula for calculating *Carbon Emission Disclosure* is as follows:

$$\text{CED} = \frac{\sum \text{di}}{\text{M}}$$

E) Environmental Performance

According to Suaidah et al. (2020), environmental performance is the performance of a company that cares about the surrounding environment. In an era of increasing environmental awareness, environmental performance has become important in determining a company's reputation and sustainability. Companies that can implement environmentally friendly business practices can meet regulatory demands and provide long-term benefits for the earth and the surrounding communities. Environmental performance assessment uses the Company Performance Rating Assessment Program in Environmental Management (PROPER) by giving scores and proxied rankings with numbers 1-5. The colors used to determine these five PROPER ratings are gold, green, blue, red, and black. It is given a score of 5 if you get a gold rank, a score of 4 if you get a green rank, a score of 3 if you get a blue rank, a score of 2 if you get a red rank, and a score of 1 if you get a black rank.

F) The Effect of Carbon Emission Disclosure on Financial Performance

Zahara (2022), in his research, found that the carbon emissions disclosure variable had a significant influence on increasing company performance. Similar findings were also revealed by Kelvin et al. (2017), who stated that carbon emissions disclosure had a significant positive influence on financial performance. Based on this description, the hypotheses that can be taken are:

H1: Disclosure of carbon emissions has a positive effect on financial performance

G) The Influence of Environmental Performance on Financial Performance

The results of research from Kinasih et al. (2022) state a positive and significant relationship between environmental performance and financial performance. Similar findings were also found in research by Siregar et al. (2022), where environmental performance had a positive and significant influence on company financial performance. Based on this description, the hypotheses that can be taken are:

H2: Environmental performance has a positive effect on financial performance

H) Conceptual Framework

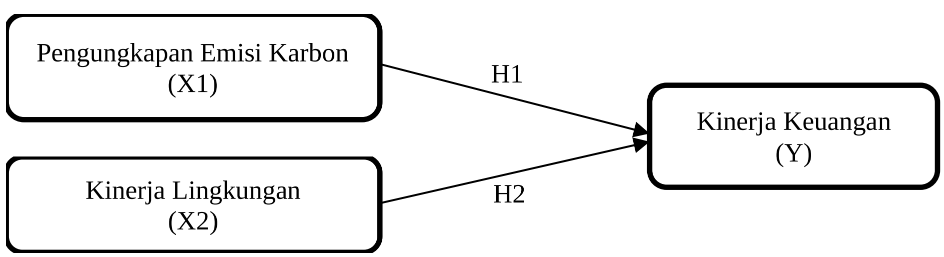

Figure 1: Conceptual Framework

I) Descriptive Statistical Test

Table 1: Statistical Test Results Descriptive

	N	Minimum	Maximum	Mean	Std. Deviation
Disclosure Carbon Emissions	63	.4444	.9444	.894180	.0827123
Environmental Performance	63	3	5	3.78	,832
Financial performance	63	-.0984	.4543	.088570	.0976772
Valid N (listwise)	63				

Source: *Secondary Data Processed (2024)*

Based on the table above, it can be seen that the carbon emissions disclosure variable (X1) has a minimum value of 0.4444, while the maximum value is 0.9444, and the mean value is 0.894180 with a standard deviation value of 0.0827123.

The environmental performance variable (X2) has a minimum value of 3, while the maximum value is 5, and the mean value is 3.78, with a standard deviation value of 0.832. The financial performance variable (Y) has a minimum value of -0.0984, while the maximum value is 0.4543, and the mean value is 0.088570, with a standard deviation value of 0.0976772.

J) Classic Assumption Test

Table 2: Normality Test Results

		Unstandardized Residuals
N		48
Normal Parameters [a, b]	Mean	.0000000
	Std. Deviation	.03874335
Most Extreme Differences	Absolute	,095
	Positive	,069
	Negative	-.095
Statistical Tests		,095
Asymp. Sig. (2- tailed) [c]		,200 [d]

Source: *Secondary Data Processed (2024)*

The Kolmogorov-Smirnov (KS) normality test, which was carried out for the first time, showed that the data was not normally distributed. In carrying out *boxplot outlier* testing on the initial data consisting of 63 data, 15 data were identified which had extreme data and had to be deleted, resulting in the remaining 48 data. Based on the normality test results above, using the *Kolmogorov-Smirnov test* has a normal distribution because the test results show that *Asymp. Sig (2-Tailed)* > 0.05 significance level, namely 0.200 > 0.05.

Table 3: Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	Disclosure Carbon Emissions	,999	1,001
	Environmental Performance	,999	1,001

Source: *Secondary Data Processed (2024)*

Based on the table above, it can be seen that disclosure of carbon emissions and environmental performance has a tolerance value > 0.10 and VIF < 10. Based on the test results, there is no multicollinearity.

Table 4: Heteroscedasticity Test Results

Model		F	Sig.
1	(Constant)	,077	,939
	Disclosure Carbon Emissions	,997	,324
	Environmental Performance	-1,748	,087

Source: *Secondary Data Processed (2024)*

Based on the results of the *Glejser test*, it can be seen that the significance value is > 0.05 for the carbon emission disclosure and environmental performance variables. Therefore, it can be concluded that there are no symptoms of heteroscedasticity in the linear regression model carried out.

Table 5 : Autocorrelation Test Results

Model	R	Durbin-Watson
1	.465 [a]	1,884

Source: *Secondary Data Processed (2024)*

Durbin-Watson test results, the calculated value is 1.884. After calculation, the *Durbin-Watson value* is between dU (1.6231) and 4 – dU (2.3769), namely dU < *Durbin-Watson* < 4 – dU. Therefore, it can be concluded that there is no indication of autocorrelation.

K) Multiple Linear Regression Analysis

Table 6 : Simultaneous Test Results (F Test)

Model		F	Sig.
1	Regression	6,200	.004 [b]
	Residual		
	Total		

Source: *Secondary Data Processed (2024)*

Based on the test results, the significant value f is 0.004 < 0.05, which means that Ha $_{is}$ accepted and H $_0$ is rejected. Thus, it can be seen that disclosure of carbon emissions and environmental performance simultaneously influences financial performance.

Table 7 : Coefficient Test Results Determination (R2)

Model	Adjusted R Square
1	,181

Source: *Secondary Data Processed (2024)*

Based on the results of the coefficient of determination test, it is known that the value of the *Adjusted R Square* is 0.181, which means that the dependent variable can be explained by the independent variable, namely 18.1%. This shows that 18.1% of financial performance is influenced by carbon emission disclosure variables and environmental performance. In comparison, the remaining 81.9% is influenced by other variables that are not known in this research.

Table 8 : Partial Test Results (T-Test)

Model		T	Sig.
1.	(Constant)	-1,527	.134
	Disclosure Carbon Emissions	2,888	,006
	Environmental Performance	-2,083	,043

Source: *Secondary Data Processed (2024)*

Based on the results of the t-statistical test, it can be seen that the disclosure variable has a significance value of t 0.006 < 0.05, which means that Ha1 is $_{accepted}$ and has an effect on financial performance. For the environmental performance variable, the significance value of t is 0.043 < 0.05, which means that H $_{a2}$ is accepted and has an effect on financial performance.

IV. CONCLUSION

Based on the results of the analysis and discussion carried out in the previous chapter, the following conclusions were obtained:

1. The carbon emission disclosure variable has a positive and significant effect on financial performance. This can be seen based on the tcount result of 2,888, and the significance value is 0.006 <0.05, so Ha $_{is}$ accepted, and H0 $_{is}$ rejected.
2. Environmental performance variables influence financial performance. This can be seen based on the tcount result of -2.083, and the significance value is 0.043 < 0.05, so Ha $_{is}$ accepted, and H0 $_{is}$ rejected.

V. REFERENCES

[1] Anggraeni , DY (2015). Disclosure Home Gas Emissions Glass, Environmental Performance, And Corporate Value. Journal Indonesian Accounting and Finance, 12 (2), 188–209. https://doi.org/10.21002/jaki.2015.11

[2] ARIF, A. (2023). Carbon Dioxide Emissions Reach Record Highest in 2022. Kompas. https://www.kompas.id/baca/humaniora/2023/03/02/emisi-carbon-dioxide-mencapai-rekor-tertinggi-pada-2022

[3] Bae Choi, B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. Pacific Accounting Review, 25 (1), 58–79. https://doi.org/10.1108/01140581311318968

[4] Bahri , S., & Cahyani , F.A. (2016). Effects of Environmental Performance Regarding Corporate Financial Performance with Corporate Social Responsibility Disclosure as Intervening Variables (Study _ Empirical on Manufacturing Companies Listed on the IDX). Journal Kadiri University Economics, 1 (2). https://doi.org/10.30737/ekonika.v1i2.11

[5] Cahya, BT (2017). Carbon emission disclosure: reviewed from media exposure, performance environment and characteristics company going public based Sharia in Indonesia. Journal Studies Islam, 4 (2), 170–188.

[6] Fahmi, I. (2014). Financial Performance Analysis. Alphabet.

[7] Kaat , A., & Sofian, S. (2023). Influence performance environment, costs environment, and corporate social responsibility on performance finance. Journal Scientific Student Accounting, 12 (1), 13–27. https://doi.org/10.33508/jima.v12i1.4758

[8] Kelvin, C., Daromes , FE, & Ng Suwandi . (2017). Disclosure emission carbon as mechanism enhancement performance For create mark company. Dynamics Accounting, Finance & Banking, 6 (1).

[9] Kinasih , S., Mas'ud , M., Abduh, M., Pramukti , A., & Muslim, M. (2022). Effect of Environmental Performance, Costs Environment and Disclosure of Corporate Social Responsibility on Financial Performance. Center of Economic Students Journal, 5 (3), 242–257. https://doi.org/10.56750/csej.v5i3.542

[10] Absolutely. (2016). Effects of Environmental Performance On the Financial Performance of Manufacturing Companies Listed on the BEI in 2011-2014. Maulana Malik Ibrahim State Islamic University Malang.

[11] Meiyana, A. (2018). Effect of Environmental Performance, Costs Environment, and Company Size on Financial Performance with Corporate Social Responsibility As Intervening Variables. Yogyakarta State University.

[12] Meiyana , A., & Aisyah , MN (2019). Effect of Environmental Performance, Costs Environment, and Company Size on Financial Performance with Corporate Social Responsibility as Intervening Variables. Nominal Research Barometer Accounting and Management, Volume VIII Number 1.

[13] Praise. (2013). Effects of Environmental Performance On Financial Performance With Corporate Social Responsibility (CSR) as Intervening Variables. Semarang State University.

[14] Safutri , D., Mukhzarudfa , M., & Tiswiyanti , W. (2023). Influence Disclosure Carbon Emissions, Corporate Governance and Financial Performance: Study in Indonesia. Journal Academy Accounting, 6 (2), 273–293. https://doi.org/10.22219/jaa.v6i2.25065

[15] Saputra , MFM (2020). Effects of Environmental Performance and Costs Environment On Financial Performance with Disclosure Environment as Intervening Variables. Journal Research Accountancy Tirtayasa, 05 (02).

[16] Siregar , FH, Syahyunan , & Miraza , Z. (2022). Environmental Performance, Cost Environment and Company Size on Financial Performance With Corporate Social Responsibility as Intervening Variables. Journal Economics, Management, Accounting, Digital Business And Entrepreneurship, 1 (2),

187–205.
[17] Suaidah , YM, Ayuprilia , C., Putri, K., Pgri , S., & Jombang , D. (2020). The Influence of Environmental Performance and Corporate Social Responsibility on Company Financial Performance. Journal Research Financial Accounting _ Dewantara, 3 (2). http://ejournal.stiedewantara.ac.id/index.php/JAD/issue/view/54
[18] Wijayanti , R. (2016). Influence Sustainability Report Disclosure of Company Financial Performance. http://hdl.handle.net/11617/7350
[19] Zahara, F. (2022). Environmental Performance Disclosure As Mechanism Performance Improvements for Creating Company Value. Owner, 6 (4). https://doi.org/10.33395/owner.v6i4.1086