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Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics

Düsternbrooker Weg 120

24105 Kiel (Germany)

E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)

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Role Environmental Performance on Effect Financial Performance to Carbon Emission Disclosure

Rahmawati Rahmawati^{1*}, Doddy Setiawan¹, Y. Ani Ariyani¹, Kiswanto Kiswanto^{1,2}

¹Fakultas Ekonomi dan Bisnis, Universitas Sebelas Maret, Surakarta 57126, Indonesia, ²Fakultas Ekonomika dan Bisnis, Universitas Negeri Semarang, Semarang 50229, Indonesia. *Email: rahmaw2005@yahoo.com

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ABSTRACT

Disclosure of carbon emissions has become a global issue amidst the increasing world climate. This issue becomes a trading that can affect the company's performance supported by the company's environmental performance. This study aims to examine the role of environmental performance in the influence between the company's financial performance on the disclosure of carbon emissions. This research was conducted on Basic Industry and Chemical companies listed on the Indonesia Stock Exchange. The unit of analysis used in this study was 150 observation units. Data analysis uses multiple regression analysis. The results of the analysis show that first: Financial performance consisting of liquidity, profitability, leverage, and sales growth has a direct effect on the disclosure of carbon emissions. However, the return on equity ratio has no effect on the disclosure of carbon emissions. Second, the results show that the presence of environmental performance can not maximally encourage the disclosure of carbon emissions. Where the company can improve environmental performance if the company has better financial performance. This is indicated by the value of the direct effect of environmental performance has no effect on the disclosure of carbon emissions. However, this research is limited to basic and chemical companies, so future research can expand to companies that have a direct impact on the environment.

Keywords: Financial Performance, Corporate Governance, Carbon Emission Disclosure

JEL Classifications: L25, G34

1. INTRODUCTION

The issue of environmental balance is a very serious concern today. The Indonesian government has been very serious about zero emission. Various efforts have been made seriously by the Indonesian government to reduce carbon emissions caused by industry and the effects of development that has been carried out. However, this cannot go well if it is not followed by participation by the whole community, including large contributions by companies or industries. The role of industry is very important to participate in maintaining the balance of carbon emissions caused by company activities.

Therefore, the disclosure of carbon emissions will help stakeholders, such as shareholders and creditors, make decisions

regarding better investment prospects in the future. In addition, disclosure of carbon emissions will also help other stakeholders such as regulatory agencies, institutional investors and the public to improve carbon performance, develop carbon strategies and determine carbon prospects through better monitoring and regulation of carbon emissions. Improved carbon performance will have a direct impact on improving the company's financial performance (Siddique et al., 2021).

Previous research examines the factors that influence the disclosure of carbon emissions, including media exposure, business growth, company size, and leverage (Jannah and Muid, 2014). Irwhantoko and Basuki (2016) showed that company size, profitability, competition, growth, and the reputation of the public accounting firm used had no effect on carbon emission disclosure carbon

emission disclosure. Akhiroh and Kiswanto (2016), environmental performance, financial distress, profitability, managerial ownership, institutional ownership, proportion of independent commissioners, and audit committee as independent variables.

Matsumura et al. (2014) analysed the relationship between carbon emissions and firm value for (US) S&P 500 companies. The study found that the market penalises all companies for their carbon emissions because they do not disclose carbon emissions in detail. Saka and Oshika (2014) conducted a study in Japan that found a negative relationship between carbon emissions and equity market value, suggesting an economic motivation to limit emissions. Gallego-Álvarez et al. (2015) found a positive effect of carbon emission reduction on financial performance as measured by Return on Equity, but an insignificant impact on operational performance as measured by Return on Asset. In South Africa, Ganda and Milondzo (2018) provide support for the “win-win” argument that carbon reduction initiatives can effectively improve financial performance as indicated by the negative relationship between carbon emissions and profitability.

The debate over the results of the above research encourages researchers to contribute to the study of carbon emission disclosure in company performance. This study examines the role of environmental performance as measured by using the PROPER rating to assess environmental performance (Maulidiavitasari and Yanthi, 2021). The presence of the role of environmental performance is new in the context of disclosing carbon emissions, especially research on companies in Indonesia. So that the results of this study can contribute to the study of carbon emission disclosure.

2. LITERATURE REVIEW

2.1. Legitimacy Theory

Legitimacy theory focuses more on the interaction between companies and the public. Companies try to create harmony between the social values that are part of business operations and the standards of behaviour that already exist in the social system, which is part of the social system. If the system is aligned, then the legitimacy of the company's legitimacy is created (Dowling and Pfeffer, 1975). In the context of legitimacy, corporate companies are required to report environmental performance and environmental performance and social environmental identification of the social environment (Berthelot and Robert, 2011). Companies disclose carbon management in their annual reports, sustainability reports, and websites (Kılıç and Kuzey, 2018). Disclosure is considered a medium to restore, enhance, and maintain the legitimacy they have received. When legitimacy from society and community and stakeholders is gained, companies can continue to operate as business entities by applying the norms and values of the local community and surrounding environment.

2.2. Carbon Emission Disclosure

According to the United States Environmental Protection Agency (EPA), greenhouse gases are gases that can trap heat in the earth's atmosphere which causes the gas to capture solar heat reflected by the earth's surface and cannot escape from the atmosphere (Alfani

and Diyanty, 2020). According to Pratiwi (2018) carbon emissions can be defined as gases derived from combustion processes containing carbon that are released into the Earth's atmospheric layer. Carbon emissions reporting is a relatively new concept, the broader issue of environmental disclosure has been investigated in many different national contexts and over many years.

During 2005, out of 1,485 Australian companies there were only 139 companies that voluntarily disclosed carbon emissions information in both their financial statements and sustainability reports (Choi et al., 2013). Carbon emissions are a disclosure category covered by the Global Reporting Initiative (GRI) in Section 302 (Perkins et al., 2022). Previous carbon accounting studies found that the presence of carbon-related information reduces information asymmetry and increases corporate transparency (Tan et al., 2022). Companies will be perceived as socially irresponsible when their operations produce high carbon emissions without effective reduction policies (Siddique et al., 2021). According to Ufere et al. (2016) carbon emissions in developing countries have continued to increase in recent years.

The percentage of carbon emissions in developing countries in 1990 was 33% and increased to 40% in 1997. And when the Kyoto Protocol international climate change mitigation agreement was agreed, the level of carbon emissions in developing countries increased to 55% of the total global carbon today. From the above we can assume that future carbon emissions will continue to increase as carbon emissions from developing countries rise to around 70% of global emissions, with the accompanying climate catastrophe implications. Companies may decide to ensure information is disclosed to provide more reliable carbon disclosures (Hahn et al., 2015).

2.3. Environmental Performance

According to Pratiwi (2018) when the company will disclose carbon emissions when the company's performance is in good condition. Vice versa, when the company's environmental performance is poor the company is reluctant to disclose carbon emissions. The existence of legitimacy theory requires all companies to participate in preserving the environment by disclosing carbon emissions. Companies that perform good environmental performance tend to be proactive in making voluntary disclosures to investors and stakeholders to gain legitimacy (Dewayani and Ratnadi, 2021).

According to Saptiwi (2019) companies can provide assurance to the public by providing good environmental performance to show that the company has contributed and helped reduce the impact of climate change and comply with existing regulations to reduce global warming. Companies with low environmental performance will not focus on disclosing carbon emissions, in contrast to companies that have good environmental performance will focus on voluntary disclosure, namely disclosure of carbon emissions. The disclosure of environmental performance information can benefit the company because it can increase company value (Septriyawati and Anisah, 2019).

2.4. Financial Performance

Environmental performance shows how the company's responsibility in maintaining the environment around its business

operations. If the company also complies with the regulations in maintaining the environmental conditions around the place of operation, it will form a good social relationship between the company and the environment. The company's level of compliance with the environment can be seen from its environmental performance in the form of ranking results by an institution that has a direct relationship with the environment. If the company's ranking results are high, it means that the company has high compliance in protecting the environment. Vice versa, if the company's compliance rating is poor, it shows that the company's compliance level is low. A higher level of compliance rating encourages companies to disclose carbon emissions (Rohmah and Nazir, 2022).

Based on legitimacy theory which states that companies disclose environmental responsibility to test the legitimacy of their companies. High company performance can encourage companies to publicise environmental activities and disclosure of carbon emissions. This is to show the public that the company's activities follow the values and norms that exist in society (Aini and Rahayu, 2022). According to research conducted by Hidayah (2019) profitable companies will provide sufficient resources for financing in the disclosure of carbon emissions. Vice versa, companies that are less profitable, cause companies to place less focus on disclosing carbon emissions because companies are more focused on increasing corporate profits and will provide limitations on disclosing carbon information (Luo et al., 2013).

2.5. Hypotesis Development

2.5.1. *Effect of environmental performance to carbon emission disclosure*

Environmental performance is a result obtained from the measurement of the management system, related to controls on environmental aspects and also based on assessments made on environmental performance based on environmental policies, environmental goals and environmental targets (ISO 14001) (Rusmana and Purnaman, 2020). The company's environmental performance is part of the company's efforts to contribute to preserving the environment. Environmental performance is made by the Ministry of Environment in the form of a rating that shows the company's performance on the environment.

Research conducted by Saptiwi (2019) shows that environmental performance has a positive relationship with carbon emission disclosure. Companies that have low environmental performance will not disclose information to avoid negative exposure. Vice versa, companies that have high environmental performance will be increasingly encouraged to disclose information about company performance. Disclosure of information made by the company will increase the value of the company.

In line with legitimacy theory, there is social contact between companies and the environment in which they operate so that companies must understand the values and regulations that apply in society to gain legitimacy from the public. One of the efforts that companies can make is by creating a green environment that does not disturb the environment. The results of research conducted by Rinaldi et al. (2021) also show that environmental performance

has a positive effect on carbon emission disclosure. Companies that are more active will be encouraged to support government programmes and participate in helping to reduce environmental pollution by disclosing information voluntarily. The information disclosed is in the form of the level of carbon emission release, disclosure is intended as a form of corporate responsibility for the environment.

This is in line with research conducted by Probosari and Kawedar (2019) which shows that environmental performance has a positive effect on carbon emission disclosure. According to legitimacy theory, if the company's environmental performance is good, it will encourage the company to disclose carbon information which aims to gain public trust in the company and provide full support for the company.

Research conducted by Akhiroh and Kiswanto (2016) shows that environmental performance has a positive effect on carbon emission disclosure. To get recognition from society, companies must carry out their activities in accordance with applicable regulations in society. The company must align the company's activities with existing regulations to preserve the environment around the company running its business operations. This can be obtained by aligning the company's activities with the values and norms that exist in society. The better the environmental performance, the higher the company's legitimacy from society.

2.5.2. *Effect of financial performance to carbon emission disclosure*

Financial performance is a description of the company's performance in obtaining profits during a certain period. Higher financial performance will make it easier for companies to gain legitimacy from the community that the company has operated in compliance with existing regulations and is environmentally responsible (Kelvin, 2022). Good company performance in using and utilising company resources will have an impact on increasing company profitability. This increase in management performance will be trusted by the public that the company is trying to minimise the impact of environmental damage, one of which is from carbon emissions.

Through the company's financial performance, the company's financial condition will be illustrated, where financial information is needed by investors to find out the company's prospects in the future. The better the company's financial performance, the greater the opportunity for the company to disclose carbon emissions. Vice versa, if the company's financial performance decreases, the disclosure of carbon emissions will also decrease. Because to disclose carbon emissions requires a large cost. So that only companies that have good and healthy financial conditions will be able to disclose carbon emissions (Rohmah and Nazir, 2022).

Disclosure of carbon information by the company will have an impact on increasing social trust from stakeholders, especially consumers, especially in the use of products that care about the environment. Thus, the company's financial performance will increase due to disclosing carbon emissions such as achieving increased company profitability and will motivate investors to invest in shares (Kelvin, 2022).

2.5.3. Effect of firm size to carbon emission disclosure

The resources owned by the company show how big the size of the company is. Large companies usually have abundant resources that the company can maximise in its operational activities (Saptiwi, 2019). These results are in line with research conducted by Hapsari and Prasetyo (2020) that company size has a positive effect on carbon emission disclosure. The number of activities carried out by the company also shows how large the size of the company is. All of the company's operational activities are often directly related to the environment. Companies are also required to preserve the environment in addition to carrying out their operational activities. The larger the size of the company, the greater the demands and pressures received from the public. Disclosure of environmental performance by the company is the answer to the pressure and criticism received by the company from the public. Companies that have a large size scale will usually disclose information not only to internal parties but also to external parties and have the potential to disclose carbon emissions compared to small companies.

Large companies will usually disclose carbon emission information more extensively to form harmony with the norms of behaviour that exist in the social system of society as a form of manifestation of corporate legitimacy. Large companies will usually receive more influence and activity from society than small companies. This will make shareholders pay attention to every detail of the reports published by the company in disclosing information about the environmental activities carried out. The larger the size of a company, the greater the information disclosed, making it more likely to practice carbon emission disclosure.

According to legitimacy theory, large-sized companies have high pressure from the public to disclose non-financial data to maintain the social contract that allows companies to access public resources (Desai, 2022). Large companies are more visible and are constantly scrutinised by investors, governments, media, and the general public which forces them to disclose additional information that complements mandatory disclosures. Furthermore, large firms have sufficient resources that allow managers to make voluntary disclosures compared to small firms.

This is in line with research conducted by Probosari and Kawedar (2019) which states that firm size has a positive effect on carbon emission disclosure. Companies with large sizes have abundant resources that are used to make voluntary disclosures, namely disclosure of carbon emissions. In contrast to companies that have a small size, the resources owned will be used to meet the needs of the supply first compared to disclosure needs. In addition, companies that have a large size tend to get judgement from the public, so they will make greater disclosures to reduce criticism by the public.

Research conducted by Hapsari and Prasetyo (2020) also shows the results that firm size has a positive effect on carbon emission disclosure. The larger the size of the company, the greater the amount of ownership of the company's assets. The bigger the company, the greater the political pressure the company will get. Because large companies tend to be the centre of attention regarding social responsibility and compliance with regulations.

2.5.4. Liquidity level moderates the effect of environmental performance on carbon emission disclosure

Liquidity ratio is a ratio that describes the company's ability to finance all of its operational activities and pay its current liabilities with current assets without passing the maturity period (Rahim, 2015). The ratio of ownership of the company's current assets must be greater than the short-term liabilities that are due immediately. The higher the level of liquidity, the better the company's position in the eyes of creditors. Because it is likely that the company can pay its obligations on time. The company's financial condition greatly influences investors to invest in the company. If investors are interested in investing in the company, it will have an impact on increasing the company's share price. A high level of liquidity does not always provide benefits for the company. A liquidity level that is too high has the opportunity to create idle funds that can actually be used to invest in projects that benefit the company.

Based on legitimacy theory, the level of liquidity can influence corporate environmental and social responsibility decisions. Companies have an obligation to fulfil comprehensive information needs to long-term creditors. Disclosure of social and environmental responsibility is information that can fulfil the rights of creditors. One of the disclosures of social and environmental responsibility is carbon emission disclosure. When the level of liquidity owned by the company is high. Companies will tend to carry out environmental and social responsibility to build the company's image. Companies try to show that they can pay their debts. The company will show that they can survive.

A high level of liquidity indicates that the company's performance is considered good because the company is considered capable of financing all its debts. When the company can pay all its obligations without a deficit in the company, it shows that the company has good environmental performance. So that it will encourage companies to carry out carbon emission disclosure. The disclosure of social and environmental responsibility can provide wider information for the public. It can be concluded that the level of liquidity can moderate the effect of environmental performance on carbon emission disclosure.

3. RESEARCH DESIGN

This research was conducted on Basic Industry and Chemical companies listed on the Indonesia Stock Exchange. The unit of analysis was carried out on all Basic Industry and Chemical companies listed on the Indonesia Stock Exchange, with the number found during the period 2017-2021 as many as 150 units of analysis. The variables of this study consist of independent variables (Financial Performance: ROE, Liquidity, ROA, Leverage, and Sales Growth), Dependent Variables namely Carbon Emission Disclosure, and Intervening Financial Performance variables. Furthermore, the operational definition of variables is presented in the following table 1.

The research data were analysed using Multiple Regression Analysis using the following mathematical equation:

Equation 1

$$CED: a + \beta_1ROE + \beta_2Liq + \beta_3ROA + \beta_4Lev + \beta_5SG + e$$

Equation 2

$$CED: a + \beta_1ROE + \beta_2Liq + \beta_3ROA + \beta_4Lev + \beta_5SG + \beta_6ROE*ENVP + \beta_7Liq*ENVP + \beta_8ROA*ENVP + \beta_9Lev*ENVP + \beta_{10}SG*ENVP + \beta_{11}ENVP + e$$

Keterangan

ROE: Return on equity

Liq: Liquidity

ROA: Return on asset

Lev: Leverage

SG: Sales growth

CED: Carbon emissions disclosure

ENVP: Environmental performance

a: Konstanta

β_1 - β_{11} : Koefisien regresi

e: Standar error

4. RESULTS

4.1. Descriptive Statistics

Table 2 shows the description of each research variable. The research unit of analysis is 150 units of analysis, where the ROE variable has a minimum value of -4.113; a maximum of 1.085; and on average the companies in Indonesia that sampled the study had an ROE value of 0.063. The Liquidity variable has a minimum value of -0.791; maximum 4.524; and on average, companies in Indonesia that are sampled in the study have a Liquidity value of 1.401. The ROA variable has a minimum value of -0.784; maximum 1.484; and on average the companies in Indonesia that sampled the study had an ROA value of 0.102. The Leverage

variable has a minimum value of -0.197; maximum 0.674; and on average the companies in Indonesia that sampled the study had a Leverage value of 0.243. The Sales Growth variable has a minimum value of -1.563; maximum 9,677; and on average, companies in Indonesia that are sampled in the study have a Sales Growth value of 1.185. The Environmental Performance variable has a minimum value of 3,000; a maximum of 5,000; and on average, companies in Indonesia that are sampled in the study have a Sales Growth value of 3.466. The Carbon Emission Disclosure variable has a minimum value of 0.056; a maximum of 0.667; and on average, companies in Indonesia that are sampled in the study have a Sales Growth value of 0.332.

The Table 3 above shows the results of multiple regression analysis tests for two research models, namely models without moderating variables and hypothesis testing using moderating variables. The calculated F value of the first model is 69.154 with a significance value of 0.000, while the adjusted R square value is 0.696. For the second model, the calculated F value is 58.936, the significance value is 0.000 with an adjusted R square value of 0.700. Based on these results, it is known that the presence of environmental performance variables is a variable that can encourage companies in Indonesia to disclose carbon emissions, where the adjusted R Square value has increased despite the small increase. The results of testing the first model show that the variables of Likuditas, ROA, Leverage, Sales Growth, and Environmental Performance affect Carbon Emission Disclosure. While the ROE variable has no effect on Carbon Emission Disclosure. The highest coefficient of influence is owned by leverage, which is 0.163. The test results of the second model show that the variables of liquidity, ROA, leverage, sales growth, and environmental performance affect the carbon emission disclosure. While ROE and environmental performance variables have no effect on Carbon Emission Disclosure. The highest coefficient of influence is owned by leverage which is 0.164.

Table 1: Operational definition of research variables

No	Variable	Definition	Measurement
1.	Carbon emission disclosure (CED)	Disclosure of carbon emission information	CED = (Number of items disclosed/Total disclosure items in the CED) X 100% (Aini et al., 2022)
2.	Environmental performance	The amount of environment-based information disclosed by the company.	PROPER rating to assess environmental performance (Maulidiavitasari and Yanthi, 2021).
3	ROE	Comparison of profit after tax divided by total equity	ROE=profit after tax/total of equity (Kelvin, 2022)
4	Liquidity ratio	The level of the company's ability to pay	Current Assets/Current Liabilities (Haryoko et al., 2020).
5	ROA	Comparison of profit after tax with total assets	ROA=Net Profit/Total Assets (Hermawan et al., 2018)
6	Leverage	Comparison of total debt to total assets	Leverage describes the relationship between a company's liabilities and equity (Widianto and Sari, 2020)
7	Sales growth	Sales growth in year t with year t-1	Company sales growth, measured as the change in sales divided by sales at the beginning of the period (Makan dan Kabra, 2021)

Table 2: Descriptif statistic

Variable	N	Min	Max	Mean	Std. Dev
Return on equity	150	-4.113	1.085	0.063	0.408
Liquidity	150	-0.791	4.524	1.401	1.046
Return on asset	150	-0.784	1.484	0.102	0.237
Leverage	150	-0.197	0.674	0.243	0.138
Sales growth	150	-1.563	9.677	1.185	1.089
Environmental performance	150	3.000	5.000	3.466	0.563
Carbon emission disclosure	150	0.056	0.667	0.332	0.131

Table 3: Research hypothesis test

Variable	No environmental performance				With environmental performance			
	Coeff	Std Error	t Stat	P-value	Coeff	Std Error	t Stat	P-value
Intercept	0.159	0.013	12.349	0.000	0.096	0.038	2.511	0.013
ROE	0.010	0.015	0.677	0.500	0.010	0.014	0.716	0.475
LIQ	0.053	0.007	7.394	0.000	0.050	0.007	6.920	0.000
ROA	0.108	0.027	3.989	0.000	0.113	0.027	4.179	0.000
LEV	0.163	0.049	3.327	0.001	0.164	0.049	3.369	0.001
SGRO	0.040	0.007	6.107	0.000	0.041	0.007	6.272	0.000
ENVP					0.019	0.011	1.736	0.085
	Adjusted R square: 0.696				Adjusted R square: 0.700			
	F Anova: 69.154				F Anova: 58.936			
	Sig. F: 0.000				Sig. F: 0.000			

Table 4: Model test results on large and small companies

Variable	Large company				Small company			
	Coeff	Std Error	t Stat	P-value	Coeff	Std Error	t Stat	P-value
Intercept	0.104	0.050	2.082	0.040	0.274	0.075	3.663	0.001
ROE	0.010	0.014	0.694	0.490	-0.020	0.075	-0.261	0.795
LIQ	0.057	0.010	5.978	0.000	0.005	0.014	0.390	0.699
ROA	0.033	0.052	0.640	0.524	0.202	0.036	5.566	0.000
LEV	0.325	0.069	4.727	0.000	0.045	0.061	0.725	0.472
SGRO	0.028	0.007	3.903	0.000	0.101	0.016	6.449	0.000
ENVP	0.010	0.014	0.693	0.490	-0.026	0.021	-1.215	0.231
	Adjusted R square: 0.639				Adjusted R square: 0.840			
	F Anova: 29.564				F Anova: 45.736			
	Sig. F: 0.000				Sig. F: 0.000			

5. DISCUSSION

The results showed that the variables of Likuditas, ROA, Leverage, Sales Growth, and Environmental Performance affect Carbon Emission Disclosure. However, the ROE variable has no effect on carbon emission disclosure either interacted or not interacted with the environmental performance variable. On the other hand, the results also show that the environmental performance variable is not able to be its own independent variable without interacting with other variables. This means that the independent variable can only be an intervening variable of financial performance on carbon emission disclosure. The results of this study are in line with the research of (Rohmah and Nazir, 2022) which states that the higher level of compliance rating encourages companies to disclose carbon emissions. Companies that perform good environmental performance tend to be proactive in making voluntary disclosures to investors and stakeholders to gain legitimacy (Dewayani and Ratnadi, 2021).

The results of the study showing that ROA affects carbon emission disclosure are in line with the statement that companies with high profitability tend to finance carbon emission prevention and reporting measures, due to the availability of resources to support these activities (Mawardi et al., 2023; Ratmono et al., 2021). This is because the higher the profitability of the company, the higher the corporate responsibility, so that the company is considered to have more ability to implement policies related to reducing its carbon emissions (Ratmono et al., 2021). This is in line with Choi et al. (2013) who state that companies with a solid financial position can pay staff and incur additional costs required to disclose carbon emissions information to counter external pressures and demands.

Companies with high profits are required to be able to implement the necessary measures to reduce their carbon emissions.

Leverage is a term used to describe the percentage of a company's assets that are financed by debt (Ambarwati and Prakoso, 2022). Leverage is obtained from the ratio between total debt and total assets owned by the company (Datt et al., 2019). Companies that have high leverage will try to reduce disclosures that can worsen the company's image (Agung Ulupui et al., 2020). Companies will also tend to focus on fulfilling their debt obligations rather than disclosing carbon emissions which will incur greater costs for the company (Firdaus and Wandira, 2022). According to Agung Ulupui et al. (2020) the company's ability to make non-financial disclosures will be reduced if the company is in a high leverage condition. A higher ratio creates a higher risk of financial distress. Choi et al. (2013) and (Liao et al., 2014) found that the higher the risk of financial distress, the lower the tendency of companies to disclose and carry out sustainable activities.

The results showed that sales growth affects the disclosure of corporate carbon emissions in Indonesia. This is in accordance with legitimacy theory, where companies are required to convince the public that their activities and performance have a positive impact on the growth of the company and society. Eljido-Ten (2007) states that companies have the ability to influence not only society in general, but also with existing stakeholders. The company must be able to manage all its needs properly, including ensuring that the company is responsible for the surrounding community and environment when the company's growth rate is high. The company will utilise resources by focusing on improving performance and development in the economic sector

(Irwhantoko and Basuki, 2016). This is because the company focuses on getting financial benefits when the company grows. Prado-Lorenzo et al., (2009) say that companies that have higher growth opportunities prioritise economic goals over considering environmental sustainability. Making a profit is the main purpose of a company running.

Environmental performance shows its influence on the disclosure of carbon emissions in Indonesian companies. This is in accordance with Legitimacy theory which states that companies try to create harmony between social values that are part of business operations and standards of behaviour that already exist in the social system, which is part of the social system. If the system is aligned, then the legitimacy of the company is created (Dowling and Pfeffer, 1975). However, if it all does not go well, it will have a negative impact on the environment. Jannah and Muid (2014) said that company activities have a negative impact on climate change because these activities can damage the environment. These results are in accordance with the results of research by (Dawkins and Fraas, 2011; Jannah and Muid, 2014; Prafitri and Zulaikha, 2016), which state that environmental performance has a positive effect on disclosure of carbon emissions.

However, the results of testing environmental performance when interacted with financial performance variables show results that do not significantly affect the disclosure of carbon emissions. The results of this study are in line with (Agung Ulupui et al., 2020; Pratiwi et al., 2021; Ulfa and Ermaya, 2019) that environmental performance has no effect on disclosure of carbon emissions. An increase in the PROPER rating can motivate companies to disclose carbon emissions in their companies. The PROPER rating indirectly represents the company's commitment in anticipating the reduction of climate change problems. PROPER is one of the measurements for companies that have performed environmental performance through the colour rating used in PROPER. Environmental performance is proof that the company has taken care of the environment around the company. This is in line with legitimacy theory where companies, when carrying out company activities, must also protect the environment around the company so that the surrounding community does not feel disturbed by the company's activities.

While ROE does not show its influence on the disclosure of carbon emissions in Indonesian companies. This shows that Indonesian companies are not affected by the amount of ROE ratio in disclosing carbon emissions. Research by Rakhiemah and Agustia (2009) and Pujiasih et al. (2013) revealed that environmental performance has no effect on financial performance. Another study Ganda and Milondzo (2018) highlighted that carbon performance pays and that as the company's growth rate increases, the relationship with financial performance (ROE, ROS, ROI, and MVA) will increase.

6. ADDITIONAL ANALYSIS

Furthermore, this study tries to provide additional analysis in the form of analysis of differences in disclosure of large and small

companies. The unit of analysis obtained is grouped into two sample groups, namely large companies and small companies. The following are the results of the analysis of the research model differentiated between large companies and small companies.

Table 4 shows the results of testing the research model between large and small companies. The results of the analysis of the company show that ROE, ROA, ENVP do not affect the disclosure of carbon emissions. This means that the disclosure of carbon emissions of large companies in Indonesia is not influenced by the ratio of ROE, ROA and ENVP. This means that the level of debt, the amount of assets, and the environmental performance of the company do not affect the company's efforts in disclosing carbon emissions. The same thing also happens to small companies, where ROE, LIQ, LEV, ENVP do not affect the disclosure of carbon emissions. Therefore, it can be concluded that when differentiated between large and small companies in disclosing carbon emissions in Indonesia have the same behaviour.

7. CONCLUSION

The results showed that Likuiditas, ROA, Leverage, Sales Growth, and Environmental Performance affect Carbon Emission Disclosure. While ROE and environmental performance variables have no effect on Carbon Emission Disclosure. In addition, the presence of environmental performance as an intervening variable has a good contribution to the disclosure of corporate carbon emissions in Indonesia. However, environmental performance is not able to stand alone as a variable in influencing the level of carbon emission disclosure. Environmental performance must be supported by the presence of good financial performance (Liquidity, ROA, Leverage, Sales Growth). Furthermore, additional analysis can also conclude that there is no difference in behaviour between large and small companies in disclosing carbon emissions. Where large and small companies in disclosing carbon emissions are only influenced by financial performance, especially liquidity, leverage, and sales growth, while ROE, ROA, and ENVP are unable to influence the disclosure of large and small companies in Indonesia. So in general it can be concluded that companies in Indonesia focus more on aspects of liquidity, leverage, and sales growth in disclosing carbon emissions.

Next, this research has research limitations. Among them, the samples used are Basic Industry and Chemical companies. Future research can add companies that have a direct impact on the environment, such as mining companies. In addition, additional analysis in this study is only grouped based on large and small companies. Future research can differentiate the level of disclosure of carbon emissions so that it will show detailed efforts to disclose carbon emissions based on the items of disclosure of carbon emissions that should be.

REFERENCES

Agung Ulupui, I.G.K., Maruhawa, D., Purwohedhi, U., Kiswanto, K. (2020), Carbon emission disclosure, media exposure, environmental

- performance, characteristics of companies: Evidence from non financial sectors in Indonesia. *Journal of Accounting and Auditing: Research and Practice*, 2020, 628159.
- Aini, K.A., Rahayu, R.A. (2022), Love of money, financial literacy, locus of control dan gender terhadap pengelolaan keuangan pribadi pelaku UMKM. *Jurnal Ilmiah Akuntansi Kesatuan*, 10(3), 433-442.
- Aini, K.N., Murtiningsih, R., Baroroh, N., Jati, K.W. (2022), The Effect of Financial Slack, Institutional Ownership, Media Exposure on Carbon Emission Disclosure with Solvability Ratio as a Moderating Variable. In: *Proceedings of the 2nd International Conference of Strategic Issues on Economics, Business and, Education (ICoSIEBE 2021)*. Vol. 204. p1-6.
- Akhiroh, T., Kiswanto, K. (2016), The determinant of carbon emission disclosures. *Accounting Analysis Journal*, 5(4), 326-336.
- Alfani, G.A., Diyanty, V. (2020), Determinants of carbon emission disclosure. *The Journal of Economics, Business, and Accountancy Ventura*, 22(3), 333-346.
- Ambarwati, S., Prakoso, R. (2022), The effect of leverage and good corporate governance on sustainability report disclosure. *International Journal of Science and Society*, 4(4), 60-74.
- Berthelot, S., Robert, A.M. (2011), Climate change disclosures: An examination of Canadian oil and gas firms. *Issues in Social and Environmental Accounting*, 5(1/2), 106-123.
- Choi, B.B., Lee, D., Psaros, J. (2013), An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, 25, 58-79.
- Datt, R.R., Luo, L., Tang, Q. (2019), Corporate voluntary carbon disclosure strategy and carbon performance in the USA. *Accounting Research Journal*, 32(3), 417-435.
- Dawkins, C., Fraas, J.W. (2011), Coming clean: The impact of environmental performance and visibility on corporate climate change disclosure. *Journal of Business Ethics*, 100(2), 303-322.
- Desai, R. (2022), Determinants of corporate carbon disclosure: A step towards sustainability reporting. *Borsa Istanbul Review*, 22(5), 886-896.
- Dewayani, N.P.E., Ratnadi, N.M.D. (2021), Pengaruh kinerja lingkungan, ukuran perusahaan, profitabilitas dan pengungkapan emisi karbon. *E-Jurnal Akuntansi*, 31(4), 836-850.
- Dowling, J., Pfeffer, J. (1975), Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, 18(1), 122-136.
- Elijido-Ten, E. (2007), Applying stakeholder theory to analyze corporate environmental performance: Evidence from Australian listed companies. *Asian Review of Accounting*, 15(2), 164-184.
- Firdaus, A.Y., Wandira, P.A. (2022), Diplomasi lingkungan hidup Indonesia: Isu mitigasi perubahan iklim. *Jurnal Penelitian Pendidikan Indonesia*, 8, 540-545.
- Gallego-Álvarez, I., Segura, L., Martínez-Ferrero, J. (2015), Carbon emission reduction: The impact on the financial and operational performance of international companies. *Journal of Cleaner Production*, 103, 149-159.
- Ganda, F., Milondzo, K.S. (2018), The impact of carbon emissions on corporate financial performance: Evidence from the South African firms. *Sustainability*, 10(7), 2398.
- Hahn, T., Pinkse, J., Preuss, L., Figge, F. (2015), Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 127, 297-316.
- Hapsari, C.A., Prasetyo, A.B. (2020), Analyze factors that affect carbon emission disclosure (case study in non-financial firms listed on Indonesia stock exchange in 2014-2016). *Accounting Analysis Journal*, 9(2), 74-80.
- Haryoko, U.B., Albab, M.U., Pratama, A. (2020), Analisis rasio likuiditas dan rasio profitabilitas sebagai alat ukur kinerja keuangan pada Pt. Pelat Timah Nusantara, Tbk. *Jurnal Ilmiah Feasible*, 2(1), 71.
- Hermawan, A., Aisyah, I.S., Gunardi, A., Putri, W.Y. (2018), Going green: Determinants of carbon emission disclosure in manufacturing companies in Indonesia. *International Journal of Energy Economics and Policy*, 8(1), 55-61.
- Irwhantoko, I., Basuki. (2016), Carbon emission disclosure: Study on Indonesian manufacturing companies. *Jurnal Akuntansi Dan Keuangan*, 18(2), 92-104.
- Jannah, R., Muid, D. (2014), Analisis Faktor-faktor yang mempengaruhi carbon emission disclosure pada Perusahaan di Indonesia (Studi Empiris pada Perusahaan yang Terdaftar di Bursa Efek Indonesia periode 2010-2012). *Diponegoro Journal of Accounting*, 3(2), 1000-1010.
- Kelvin, C., Pasoloran, O., and Randa, F. (2019). Mekanisme Pengungkapan Emisi Karbon dan Reaksi Investor. *Jurnal Ilmiah Akuntansi Dan Bisnis*, 14(2), 155-168.
- Kılıç, M., Kuzey, C. (2018), The effect of corporate governance on carbon emission disclosures: Evidence from Turkey. *International Journal of Climate Change Strategies and Management*, 11(1), 35-53.
- Liao, L., Luo, L., Tang, Q. (2014), Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *Forthcoming: British Accounting Review*, 47, 409-424.
- Luo, X., Zhang, J., Duan, W. (2013), Social media and firm equity value. *Information Systems Research*, 24(1), 146-163.
- Matsumura, E.M., Prakash, R., Vera-Munoz, S.C. (2014), Firm-value effects of carbon emissions and carbon disclosures. *The Accounting Review*, 89(2), 695-724.
- Maulidiavitasari, J., Yanthi, M.D. (2021), Pengaruh kinerja lingkungan terhadap carbon emission disclosure dengan dewan komisaris independen sebagai variabel moderasi. *Akuntabilitas*, 15(1), 1-18.
- Mawardi, M.I., Winanti, W.S., Sudinda, T.W., Amru, K., Saraswati, A.A., Sachoemar, S. I., Arifin, Z., Alimin, A. (2023), Analysis of net-zero emission index for several areas in Indonesia using individual carbon footprint and land use covered. *IOP Conference Series: Earth and Environmental Science*, 1201(1), 12058.
- Perkins, G.D., Ji, C., Connolly, B.A., Couper, K., Lall, R., Baillie, J.K., Bradley, J.M., Dark, P., Dave, C., De Soya, A. (2022), Effect of noninvasive respiratory strategies on intubation or mortality among patients with acute hypoxemic respiratory failure and COVID-19: The RECOVERY-RS randomized clinical trial. *Jama*, 327(6), 546-558.
- Prado-Lorenzo, J., Rodríguez-Domínguez, L., Gallego-Álvarez, I., García-Sánchez, I. (2009), Factors influencing the disclosure of greenhouse gas emissions in companies world-wide. *Management Decision*, 47(7), 1133-1157.
- Prafitri, A., Zulaiikha, Z. (2016), Analisis pengungkapan emisi gas rumah kaca. *Jurnal Akuntansi Dan Auditing*, 13(2), 155-175.
- Pratiwi, D.N. (2018), Implementasi carbon emission disclosure di Indonesia. *Jurnal Ilmiah Akuntansi Dan Bisnis*, 13(2), 101-112.
- Pratiwi, L., Maharani, B., Sayekti, Y. (2021), Determinants of carbon emission disclosure: An empirical study on Indonesian manufacturing companies. *The Indonesian Accounting Review*, 11(2), 197-207.
- Probosari, D.C., Kawedar, W. (2019), Analisis faktor-faktor yang mempengaruhi carbon emission disclosure dan reaksi saham. *Diponegoro Journal of Accounting*, 8(3), 1-16.
- Pujiasih, I.A., Aji, S.D., Huda, C. (2013), Perbedaan model pembelajaran di (direct instruction) melalui metode mind mapping dan metode konvensional terhadap kemampuan berpikir kreatif dan prestasi belajar fika siswa smp wahid hasyim malang. *Erudio Journal of Educational Innovation*, 1(2), 40-46.
- Rahim, M.A.A. (2015), Pengaruh Kinerja Likuiditas, Kualitas Aktiva, Sensitivitas Pasar, Efisiensi, dan Profitabilitas Terhadap Capital Adequacy Ratio Pada Bank Umum Swasta Nasional Devisa. Indonesia: Stie Perbanas Surabaya.

- Ratmono, D., Darsono, D., Selviana, S. (2021), Effect of carbon performance, company characteristics and environmental performance on carbon emission disclosure: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, 11(1), 101-109.
- Rinaldi, M., Caterino, M., Fera, M., Manco, P., Macchiaroli, R. (2021), Technology selection in green supply chains-the effects of additive and traditional manufacturing. *Journal of Cleaner Production*, 282, 124554.
- Rohmah, D.F.N., Nazir, N. (2022), Pengaruh kinerja keuangan, kinerja lingkungan, sistem manajemen lingkungan, kepemilikan manajerial dan reputasi kap terhadap carbon emission disclosure. *Jurnal Ekonomi Trisakti*, 2(2), 749-762.
- Rusmana, O., Purnaman, S.M.N. (2020), Pengaruh pengungkapan emisi karbon dan kinerja lingkungan terhadap nilai perusahaan. *Jurnal Ekonomi, Bisnis, Dan Akuntansi*, 22(1), 42-52.
- Saka, C., Oshika, T. (2014), Disclosure effects, carbon emissions and corporate value. *Sustainability Accounting, Management and Policy Journal*, 5(1), 22-45.
- Saptiwi, N.W.T. (2019), Pengungkapan emisi karbon: Menguji peranan tipe industri, kinerja lingkungan, karakteristik perusahaan dan komite audit. *Jurnal Akuntansi Bisnis*, 17(3), 1-4.
- Septriyawati, S., Anisah, N. (2019), Pengaruh Media Exposure, Ukuran Perusahaan, Profitabilitas dan Leverage Terhadap Pengungkapan Emisi Karbon pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2014-2018. *Seminar Nasional Ekonomi and Bisnis Dewanatara*. p103-114.
- Siddique, A., Khan, M.A., Khan, Z. (2021), The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research*, 7(2), 182-194.
- Tan, R.R., Aviso, K.B., Foo, D.C.Y., Migo-Sumagang, M.V., Nair, P.N.S.B., Short, M. (2022), Computing optimal carbon dioxide removal portfolios. *Nature Computational Science*, 2(8), 465-466.
- Ufere, K.J., Uche, A.G., Alias, B.B. (2016), Social determinants of voluntary carbon information disclosure in the real estate sector of Malaysia. *Studia Ubb Negotia*, 61(3), 69-83.
- Ulfa, F.N.A., Ermaya, H.N.L. (2019), Effect of exposure media, environmental performance and industrial type on carbon emission disclosure. *Jurnal Ilmiah Akuntansi Universitas Pamulang*, 7(2), 149.
- Widianto, I., Sari, D.P. (2020), The Effect of environmental performance, leverage and company size towards carbon emission disclosure on rated proper company in 2015-2018. *Journal of Accounting, Entrepreneurship and Financial Technology*, 1(2), 97-118.