

## The Effect Of Environmental Awareness, Carbon Performance, Carbon Volume, And Carbon Emission Disclosure On Firm Performance

Etty Murwaningsari<sup>1\*</sup>, Angelina Yuvita Todryyanti Mai<sup>2</sup>

<sup>1,2</sup>Trisakti University, Jakarta, Indonesia

Email: [023002204014@std.trisakti.ac.id](mailto:023002204014@std.trisakti.ac.id)

\*corresponding author e-mail: [etty.murwaningsari@trisakti.ac.id](mailto:etty.murwaningsari@trisakti.ac.id)

Article Info	Abstract
<p><b>Keywords:</b></p> <ul style="list-style-type: none"><li>○ Carbon Emission Disclosure</li><li>○ Environmental Awareness</li><li>○ Carbon Performance</li><li>○ Carbon Volume</li><li>○ Firm Performance</li></ul>	<p><b>Purpose</b> – This study seeks to investigate, through empirical analysis, how environmental awareness, carbon performance, carbon intensity, and disclosure of carbon emissions influence a firm's performance.</p> <p><b>Design/methodology/approach</b> – The study employs quantitative methods, employing purposive sampling techniques to select 182 companies within the sector of Consumer Non-Cyclicals listed on the Indonesia Stock Exchange between 2021 and 2022 as samples. Secondary data is obtained from annual reports and sustainability reports available on <a href="http://www.idx.com">www.idx.com</a> and respective company websites, are utilized for analysis. Analysis of panel data regression is carried out utilizing Eviews 12 Software.</p> <p><b>Findings</b> – The results of this study suggest that the disclosure of carbon emissions has a positive effect on firm performance. Conversely, findings indicate that variables such as environmental awareness, carbon performance, and carbon volume do not significantly affect firm performance.</p> <p><b>Research limitations/implications</b> – Based on the conclusions presented, researchers can offer recommendations to enhance the quality of future research. Suggestions include incorporating additional variables that may influence firm performance and advising companies to consider factors impacting their performance.</p>
<p><b>Article History</b></p> <p>Received: 08 – 06 – 2024 Revised: 20 – 06 – 2024 Published: 30 – 09 – 2024</p>  <p>Copyright: © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<a href="https://creativecommons.org/licenses/by-sa/4.0/">https://creativecommons.org/licenses/by-sa/4.0/</a>)</p>	

## INTRODUCTION

Increasingly tight business competition forces business people to improve their performance so that they can maintain the business and achieve the company's main goal, namely obtaining high profitability (Murniati & Sovita, 2021) and often ignore the consequences for the environment that arise from the company's activities (Rosaline & Wuryani, 2020). Companies should not focus on company implementation as measured by profits, but should also pay attention to the influence of activities carried out by the company on the environment. The background for conducting this research is because many natural disasters, climate shifts and environmental issues are the main and important focus at the moment. There are several extreme events that occurred in Indonesia, causing several problems in industry due to a lack of concern for the social environment. One of the cases related to air waste pollution in East Aceh in 2023 where residents in East Aceh experienced the impact of air waste pollution, which is thought to have come from a mining site in the oil and gas industry which is active around that location (Faisal et al., 2022).

The existence of problems related to the environment will also result in the emergence of awareness among companies to always care about the environment by carrying out various activities that can anticipate damage to the environment. This can ultimately improve company performance. Previous research related to the influence of environmental awareness on company performance carried out by (Tan, 2022), shows that environmental awareness has a positive impact on a company's performance. However, this is different from research conducted by (Nurfahmi & Anis, 2022), explaining that environmental awareness has no effect on a company's financial performance.

Topics related to environmental pollution are currently being widely discussed in the industrial world, namely changes in climate in each country. Where, the cause of climate change is the presence of greenhouse gases obtained from ongoing industrial activities. CO<sub>2</sub> emissions are one of the main causes of environmental pollution. Various conclusions are drawn from previous research regarding the impact of carbon performance on company performance. According to (Putri & Murtanto, 2023), the results show that carbon performance has no impact on a company's financial performance. However, there are differences in research by (Trinks & Mulder, 2020) showing the finding that carbon performance has a positive and significant impact on a company's financial performance.

In 2020, according to Global Carbon Project records, carbon emissions decreased by approximately 2.4 billion metric tons due to social restrictions during the Covid-19 outbreak (Project, 2020). Every company needs to play an active role in reducing carbon emissions, because companies are one of the producers of carbon emissions. Previous research that discussed the influence of carbon volume on a company's performance, carried out by (Adrati & Augustine, 2022), showed that carbon volume had a very negative effect on a company's performance. However, this research was very different from the research carried out by (Lee & Cho, 2021), explains that carbon emissions have a positive effect on a company's performance.

Efforts to reduce carbon emissions that have been implemented by companies as business entrepreneurs can be seen in the disclosure of carbon emissions. The number of reports can follow the questionnaire that has been prepared by the Carbon Disclosure Project (CDP). Various conclusions were drawn from previous research regarding the impact of disclosure of carbon emissions on a company's financial performance. According to (Khairunisa & Pohan, 2022), disclosure of carbon emissions will have an effect on the company's financial performance. However, different things were found in research (Adrati & Augustine, 2022), showing that the results of carbon emissions disclosure do not affect a company's performance.

## LITERATUR REVIEW

### Stakeholder Theory

In carrying out its business activities, companies must be responsible to interested parties, in this case not only to capital owners (shareholders) but to all stakeholders who have interests both internal and external to the company. The purpose of environmental disclosure, such as carbon emission disclosure, is to explain to stakeholders the activities carried out by operating companies and how they affect stakeholders. In research conducted by (Rahmanita & Ayu, Pengaruh Carbon Emission Disclosure Terhadap Nilai Perusahaan Dengan Kinerja Lingkungan Sebagai Variabel Moderasi, 2019) and based on the Kyoto protocol, a

company can disclose its carbon emissions in its sustainability report every year.

### **Legitimacy Theory**

Legitimacy theory focuses on the responsibility of entities to demonstrate that they carry out their operations in accordance with a framework and system that is appropriate to the societal environment in which they operate, whether binding or ethical in nature (Mahmud, 2019). Environmental awareness is no less important if a company wants to maintain the company's survival. Environmental awareness is something that is currently at the center of attention. By paying attention and focusing on environmental awareness, the company will be able to create a good corporate image and value in the eyes of stakeholders and also in the eyes of the public.

### **Signaling Theory**

Signal theory states that companies will provide signals in the form of information that can be accessed by stakeholders with the aim of increasing shareholder value (Avelyn & Syofya, 2023). Companies that disclose internal company information, especially disclosing company activities in their concern for the company environment, are able to provide positive signals to external parties, especially investors. The company's concern for the environment can be seen from the company's environmental awareness. Apart from that, the form of transparency and corporate responsibility can be seen from the disclosure of carbon emissions as an effort to reduce environmental damage resulting from the company's operational activities.

### **Firm performance**

Firm performance is defined by (Fahmi, 2012) as an analysis carried out to see the extent to which the company has implemented implementation rules properly and correctly. In order to be something useful, company performance needs to be measured so that it becomes the right basis for making decisions in a company. The measuring tool that can be used is the profitability ratio, which provides an overview of a business's ability to generate profits using assets or capital productively. Profitability ratios provide an idea for company management regarding how effective company management has been.

### **Environmental Awareness**

Environmental awareness is a person's deep understanding which is manifested in thoughts, attitudes and behavior that support environmental sustainability. Environmental awareness can be seen from a person's behavior and actions towards the environment (Chaerul & Artika, 2021). This environmental awareness itself can be seen within the company based on the company's actions that affect the environment. The actions taken by a company towards its environment can affect the value and image of the company.

### **Carbon Performance**

As explained by the Ministry of Environment and Forestry (KLHK), several types of dangerous gas emissions released by company and human activities from the earth into the atmosphere can cause a greenhouse effect in the atmosphere. These greenhouse emission gases are carbon dioxide (CO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen monoxide (NO), nitrogen dioxide

(NO<sub>2</sub>), methane gas (CHA), and chlorofluorocarbons (CFC). Apart from production activities, gas produced from the combustion process of fuel, oil, coal, and others is also a group of main polluting gases or referred to as carbon gas (Putri & Murtanto, 2023). According to the GRI 305 standard on emissions, GHG emissions are a major contributor to climate change and are regulated by the United Nations (UN) "Climate Change Framework Convention" and the UN "Kyoto Protocol".

### **Carbon Volume**

Carbon emissions are the process of carbon dioxide into the atmosphere that occurs naturally or is triggered by human activities, such as deforestation, electricity consumption, and manufacturing industrial activities. In this case, carbon emissions refer to the combustion of all compounds containing carbon, such as CO<sub>2</sub>, wood, and hydrocarbon fuels. In research (Afnilia & Astuti, 2023), states that the volume of carbon emissions released or caused by company activities is reported in the carbon emissions report which is voluntarily provided in the sustainability report in accordance with the GRI 305 standard regarding carbon emissions.

### **Carbon Emission Disclosure**

Disclosure of carbon emissions is disclosure to calculate the carbon emissions of an industry and determine targets for reducing carbon emissions. Industries are now required to report industrial operational activities in their premises. By making environmental disclosures, industry can increase its value and provide significant benefits to the environment and society, by reducing or eliminating negative impacts that may occur in the industry (Ulfa & Ermaya, 2019).

### **Firm Size**

The size of the company can be described based on the total amount of assets recorded by the company. The more assets the company has, the more flexible the management can manage and use company assets to increase the value of the company itself. Larger companies generally have better conditions.

### **Leverage**

Leverage is a financial ratio to estimate how much capital or debt a company uses to obtain and increase profits for a company or investment. Leverage is used to measure and provide an overview of how far a company uses debt to fund its business. Leverage can have a positive impact on a company if managed well.

### **The Effect of Environmental Awareness on Firm Performance**

The level of environmental awareness is no less important for companies. Having a level of environmental awareness will help companies to be more careful and careful in making every decision. Research conducted (Tan, 2022), shows that environmental awareness has a significant and positive influence on company performance, this strengthens stakeholder theory and signal theory where company performance can increase if management pays attention to its stakeholders, both primary stakeholders (investors and the public) and secondary stakeholders (NGOs), this positive signal will be accepted by investors as a

guide for investment decision making. Based on this description, the hypothesis formulated is:

$H_1$  = Environmental Awareness Has a Positive Influence on Firm Performance.

### **The Effect of Carbon Performance on Firm Performance**

(Ganda & Milondzo, 2018) suggests that in the short term, carbon performance has a positive and significant effect on firm performance as measured using ROA and Tobins' Q. (Yan & Zhou, 2022) examines the synergistic effect of carbon performance with technological innovation on company performance. operates in the energy sector in China. Research that measures carbon performance as the inverse of carbon intensity results in the conclusion that carbon performance has a positive effect on company performance. Based on this description, the hypothesis formulated is as follows:

$H_2$  = Carbon Performance has a Positive Influence on Firm Performance.

### **The Effect of Carbon Volume on Firm Performance**

Carbon emissions are a negative external factor. A high volume of carbon emissions indicates poor environmental performance, as a result, companies with high carbon emissions are increasingly responsible for minimizing negative externalities. Companies that fail to meet these social requirements can face adverse social consequences (Miah, Hasan, & Usman, 2021). Research conducted (Lee & Cho, 2021) explains that carbon emissions have a positive effect on company performance. Based on this description, the hypothesis formulated is:

$H_3$  = Carbon Volume Has a Positive Influence on Firm Performance.

### **The Effect of Carbon Emission Disclosure on Firm Performance**

Increasing public awareness of the issue of climate change has resulted in new pressure for companies to make environmental disclosures due to company operational activities. Disclosure of carbon emissions is a form of company responsibility to the surrounding environment. This disclosure will have a positive impact on firm performance. According to Rusli et al., (2019) disclosure of carbon emissions has an influence on a company's financial performance. Likewise, research by (Liu & Zhou, 2023) shows the same results that disclosing carbon emissions can improve a company's performance. Based on this description, the hypothesis formulated is:

$H_4$  = Disclosure of Carbon Emissions Has a Positive Influence on Firm Performance.

## **RESEARCH METHOD**

This research aims to determine the influence of environmental awareness, carbon performance, carbon volume, and carbon emission disclosure on company performance. In this research, a quantitative approach is used by collecting secondary data, which can be obtained from annual reports and sustainability reports obtained and collected from the Indonesia Stock Exchange website, namely, [www.idx.co.id](http://www.idx.co.id) and through the company's website. The population used in this research is companies in the primary consumer goods sector (Consumer Non- Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. This research uses purposive sampling techniques and panel data regression analysis methods. The reason for selecting samples using purposive sampling is

because not all samples have the criteria that have been determined. In purposive sampling, samples are selected based on certain criteria/conditions, namely:

1. Companies in the primary consumer goods sector (Consumer Non-Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022.
2. Companies in the primary consumer goods sector (Consumer Non-Cyclicals) that publish annual reports and sustainability reports on the company website or IDX website during the 2021-2022 period.
3. Companies in the primary consumer goods sector (Consumer Non-Cyclicals) which disclose the carbon emissions produced during 2021-2022.
4. Companies in the primary consumer goods sector (Consumer Non-Cyclicals) have complete data according to the variables used in the research.

From the criteria above, this research obtained 91 companies with 182 research observations from 2021-2022.

**Table 1. Measuring tools and variable measurement sources**

Concept	Variable	Measuring Instrument	Source
Dependent	Firm Performance	$ROA = \frac{Net\ Income}{Total\ Assets}$	(Kusumawati & Murwaningsari, 2023), (Tan, 2022),
Independent	Environmental Awareness	$\frac{Total\ of\ Environmental\ Awareness\ Items\ Disclosed}{Total\ of\ All\ Environmental\ Awareness\ Items}$	(Kusumawati & Murwaningsari, 2023)
	Carbon Performance	$Ln \left( \frac{Total\ Emission\ Scope\ 1\ and\ 2\ (kgCO_{2eq})}{Total\ sales\ at\ the\ end\ of\ the\ year} \right)$	(Kusumawati & Murwaningsari, 2023)
	Carbon Volume	Total Volume of Carbon Emissions	(Afnilia & Astuti, 2023)
	Carbon Emissions Disclosure	$\frac{Total\ Carbon\ Emission\ Disclosure\ Items\ Disclosed}{Total\ Carbon\ Emission\ Disclosure\ Items}$	(Rusli et al., 2019)
Control	Firm Performance	Ln (Total Asset)	(Murwaningsari & Rachmawati, 2024)
	Leverage	$Debt\ to\ Asset\ Ratio = \frac{Total\ debt}{Total\ Aset}$	(Murdhaningsih, Harared, & Malik, 2024)

## RESULT

### Descriptive Statistical Test

**Table 2. Descriptive Statistical Test Results**

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Dependent Variable</b>					
FP	182	-0.316	0.785	0.053	0.115
<b>Independent Variable</b>					
EA	182	0.600	1.000	0.988	0.056
CP	182	-40.617	-9.987	-19.656	4.567
CV	182	-13.122	19.392	8.903	4.384
CED	182	0.111	1.000	0.802	0.234
<b>Control Variable</b>					
FS	182	24.939	32.826	28.651	1.746

---

LEV	182	0.060	2.312	0.499	0.283
-----	-----	-------	-------	-------	-------

---

Source: Data Processed by Eviews 12, 2024

Notes: FP = Firm Performance; EA = Environmental Awareness; CP = Carbon Performance; CV = Carbon Volume; CED = Carbon Emissions Disclosure; FS = Firm Size; LEV = Leverage.

Based on the results of descriptive statistical tests in table 2, it is known that the company performance variable has the lowest (minimum) value of -0.316 owned by the company Wicaksana Overseas Internation Tbk in 2022. Meanwhile, the highest (maximum) value is 0.785 owned by the company Akasha Wira International Tbk in 2022. The average value (mean) of the 182 samples studied was 0.053 with a standard deviation of 0.115.

The environmental awareness variable shows the lowest (minimum) value of 0.600 which is owned by the company Estika Tata Tiara Tbk in 2022. Meanwhile, the highest (maximum) value is 1.000 which is obtained by most registered companies in the primary consumer goods sector (Consumer Non-Cyclicals). on the Indonesian Stock Exchange with a reporting period of 2021-2022. The average value (mean) of the 182 samples studied was 0.988 with a standard deviation of 0.056.

Based on the results of descriptive statistical tests in table 2, the carbon performance variable has the lowest (minimum) value of -40,617 which is owned by the company Pantai Indah Kapuk Dua Tbk in 2022. Meanwhile, the highest (maximum) value is -9,987 obtained by the Sawit Sumbermas Sarana company Tbk in 2021. The average value (mean) of the 182 samples studied was -19,656 with a standard deviation of 4,567.

The carbon volume variable shows the lowest (minimum) value of -13,122 obtained by the company Pantai Indah Kapuk Dua Tbk in 2022. Meanwhile, the highest (maximum) value is 19,392 obtained by the company Uni-Charm Indonesia Tbk in 2022. The average value (mean) of the 182 samples studied was 8,903 with a standard deviation of 4,384.

Based on the results of descriptive statistical tests in table 2, the carbon emission disclosure variable has the lowest (minimum) value of 0.111 which is owned by Dua Putra Utama Makmur Tbk and the company Morenzo Abadi Perkasa Tbk in 2021. Meanwhile, the highest (maximum) value is 1,000 obtained in most companies in the primary consumer goods sector (Consumer Non-Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. The average value (mean) of the 182 samples studied was 0.802 with a standard deviation of 0.234.

The company size variable has the lowest (minimum) value of 24,939 owned by Wahana Inti Makmur Tbk in 2021. Meanwhile, the highest (maximum) value is 32,826 owned by the company Indofood Sukses Makmur Tbk in 2022. The average value (mean) of The 182 samples studied were 28,651 with a standard deviation of 1,746.

Based on the results of descriptive statistical tests in table 2, leverage has the lowest (minimum) value of 0.060 owned by Formosa Ingredient Factory Tbk in 2021. Meanwhile, the highest (maximum) value is 2,312 owned by the Bakrie Sumatra Plantations Tbk company in 2022. Value The average (mean) of the 182 samples studied was 0.499 with a standard deviation of 0.283.

## Panel Data Regression Analysis Test

The panel data linear regression equation can be prepared with the following equation:

$$KP_{it} = -0.313 + 0.052 \cdot KL_{it} - 0.005 \cdot KK_{it} + 0.005 \cdot VK_{it} + 0.100 \cdot PEK_{it} + 0.004 \cdot UP_{it} - 0.121 \cdot LEV_{it} + e$$

Based on the regression equation above, it can be interpreted as (Sugiyanto et al., 2022), the constant value is -0.313, meaning that without the variable environmental awareness, carbon performance, carbon volume, carbon emission disclosure, company size and leverage, the company performance variable will experience a decrease of 0.313%. The beta coefficient value of the environmental awareness variable is 0.052, if the values of other variables are constant and the environmental awareness variable increases by 1%, then the company performance variable will increase by 0.052%. The beta coefficient value of the carbon performance variable is -0.005, if the values of other variables are constant and the carbon performance variable increases by 1%, then the company performance variable will decrease by 0.005%. The beta coefficient value of the carbon volume variable is 0.005, if the values of other variables are constant and the carbon volume variable increases by 1%, then the company performance variable will increase by 0.005%. The beta coefficient value of the carbon emissions disclosure variable is 0.100, if the values of other variables are constant and the carbon emissions disclosure variable increases by 1%, then the company performance variable will increase by 0.100%. The beta coefficient value of the company size variable is 0.004, if the values of other variables are constant and the company size variable increases by 1%, then the company performance variable will increase by 0.004%. The beta coefficient value of the leverage variable is -0.121, if the values of other variables are constant and the leverage variable increases by 1%, then the company performance variable will decrease by 0.121%.

### Hypothesis test

#### Coefficient of Determination Test (R<sup>2</sup>)

**Table 6. Determination Coefficient Test**

Root MSE	0.066	R-squared	0.171
Mean dependent var	0.028	<b>Adjusted R-squared</b>	<b>0.143</b>
S.D. dependent var	0.073	S.E. of regression	0.068
Sum squared resid	0.801	F-statistic	6.032
Durbin-Watson stat	2.009	Prob(F-statistic)	0.000009

*Source: Data Processed by Eviews 12, 2024*

Based on Table 6, the Adjusted R Square value is 0.143 or 14.3%. The coefficient of determination value shows that the variables environmental awareness, carbon performance, carbon volume, carbon emission disclosure, company size and leverage are able to explain the company performance variable by 14.3% (Sugiyanto et al., 2022).

### Simultan Test (F Test)

**Table 7. Simultan Test (F Test)**

Root MSE	0.066	R-squared	0.171
Mean dependent var	0.028	Adjusted R-squared	0.143
S.D. dependent var	0.073	S.E. of regression	0.068

Sum squared resid	0.801	<b>F-statistic</b>	<b>6.032</b>
Durbin-Watson stat	2.009	Prob(F-statistic)	0.000009

Source: Data Processed by Eviews 12, 2024

The calculated F value is  $6.032 > F$  table 2.151 and the Prob value.  $0.000009 < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted, meaning that environmental awareness, carbon performance, carbon volume and carbon emission disclosure simultaneously influence company performance.

### Partial Test (T Test)

**Table 8. Partial Test (T Test)**

Variable	Prediction	Coefficient	Std. Error	t-Statistic	Prob.	Conclusion
C		-0.313	0.219	-1.428	0.155	
EA	+	0.052	0.166	0.315	0.753	H1 Rejected
CP	+	-0.008	0.006	-1.278	0.203	H2 Rejected
CV	+	0.005	0.006	0.796	0.427	H3 Rejected
CED	+	0.100	0.039	2.546	0.012	<b>H4 Accepted</b>
FS		0.004	0.008	0.465	0.643	
LEV		-0.121	0.034	-3.577	0.001	

Source: Data Processed by Eviews 12, 2024

Notes: FP = Firm Performance; EA = Environmental Awareness; CP = Carbon Performance; CV = Carbon Volume; CED = Carbon Emissions Disclosure; FS = Firm Size; LEV = Leverage.

Based on the results of the t test in table 8, it can be concluded that the results of the research obtained that the environmental awareness variable shows a significant value of 0.753  $> 0.05$ , which is above the value of  $\alpha = 0.05$  with a t-statistic value of 0.315, so  $H_1$  is rejected, meaning that the variable Environmental awareness does not have a positive effect on company performance. The results of the research show that the carbon performance variable shows a significant value of 0.203  $> 0.05$ , which is above the value of  $\alpha = 0.05$  with a t-statistic value of -1.278, so  $H_2$  is rejected, meaning that the carbon performance variable has no positive effect on company performance. The results of the research show that the carbon volume variable shows a significant value of 0.427  $> 0.05$ , which is above the value of  $\alpha = 0.05$  with a t- statistic value of 0.796, so  $H_3$  is rejected, meaning that carbon volume does not have a positive effect on company performance. The results of the research show that the carbon emissions disclosure variable shows a significant value of 0.012  $< 0.05$ , which is below the value of  $\alpha = 0.05$  with a t-statistic value of 2.546 and a positive coefficient direction of 0.100, so  $H_4$  is accepted, meaning that carbon emissions disclosure has an effect positive impact on company performance.

## DISCUSSIONS

### The Effect of Environmental Awareness on Firm Performance

The environmental awareness variable does not have a positive effect on firm performance in companies in the primary consumer goods sector (Consumer Non-Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. In signal theory, explaining that poor environmental awareness can be considered a signal that company management is less concerned about environmental issues or less efficient in managing resources (Faisal et al., 2023). A company with a high level of profitability does

not mean that their environmental awareness is also high. This is because a company's profits are still focused on the company's operational activities, in line with theory (Sembiring, 2005) which states that management is more focused on disclosing financial information and making it possible to avoid covering up financial information such as CSR. This shows that more and more companies are implementing environmental awareness, but this does not necessarily affect a company's performance. The results of this research are in line with previous research conducted by (Nurfahmi & Anis, 2022) explaining that environmental awareness has no effect on company performance, where the results of the same research by (Witjaksono & Djaddang, 2018) show that environmental awareness has no effect on firm profit performance.

### **The Effect of Carbon Performance on Firm Performance**

Carbon performance does not have a positive effect on firm performance in companies in the primary consumer goods sector (Consumer Non-Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. Decreasing carbon emissions performance is not able to improve company performance. This indicates that companies that are able to produce low carbon emissions are still not successful in generating large sales. In legitimacy theory, it will focus on the responsibility of entities to demonstrate that they carry out their operations in accordance with a framework and system that is appropriate to the societal environment in which they operate, whether binding or ethical in nature (Fulliani et al., 2022). However, the high performance of carbon emissions produced by companies can damage the company's legitimacy because there is a gap between the company and society. The results of this research are in line with previous research conducted by (Putri & Murtanto, 2023), stating the results that carbon performance has no effect on the company's financial performance, where the results of the same research by (Busch & Bassen, 2022), which also states that carbon performance has no influence on company performance.

### **The Effect of Carbon Volume on Firm Performance**

Carbon volume does not have a positive effect on firm performance in companies in the primary consumer goods sector (Consumer Non-Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. Companies tend not to disclose the volume of carbon emissions because implementing internal measurement systems and carbon emission processes requires high costs. This is supported by regulations in Indonesia which do not yet regulate companies' obligations to disclose carbon emissions in their sustainability reports or annual reports. Corporate legitimacy theory suggests that companies tend to seek recognition and support from related parties, such as society, customers, investors and regulators, to maintain their existence and success. With the disclosure of carbon emission volumes, companies are faced with pressure from various related parties to reduce their environmental impact. This research is in accordance with research (Mazaya & Barokah, 2022) which indicates that the volume of carbon emissions has no influence on the company's financial performance.

### **The Effect of Carbon Emission Disclosure on Firm Performance**

Disclosure of carbon emissions has a significant and positive effect on firm performance in companies in the primary consumer goods sector (Consumer Non-

Cyclicals) listed on the Indonesia Stock Exchange with a reporting period of 2021-2022. This research is related to stakeholder theory which states that companies in carrying out their operational activities need to pay attention to the interests of other parties, not just their own interests (Rahmanita, 2020). In maintaining business sustainability, companies need support not only from shareholders but also from stakeholders. The results of this research are in line with previous research conducted by (Khairunisa & Pohan, 2022) showing that carbon emissions disclosure has an influence on a company's financial performance. Likewise, research (Liu & Zhou, 2023) states the same results that disclosing carbon emissions can improve a company's financial performance.

## CONCLUSIONS

Based on the results of testing and data analysis that has been carried out, it can be concluded that environmental awareness does not have a positive effect on company performance. A company with a high level of profitability does not mean that their environmental awareness is also high. Because companies are more focused on their operational activities, where management is more inclined to disclose financial information than environmental information. Carbon performance does not have a positive effect on company performance. Decreasing carbon emissions performance is not able to improve company performance. This indicates that companies that are able to produce low carbon emissions are still not successful in generating large sales. Carbon volume does not have a positive effect on company performance. In general, Indonesian companies do not measure the volume of carbon emissions, but only explain that their activities produce carbon emissions. Disclosure of carbon emissions has a positive and significant effect on company performance. Disclosure of carbon emissions in Indonesia is still voluntary and this provides added value for companies that disclose it, so that it can influence company performance.

## IMPLICATIONS AND LIMITATIONS

It is hoped that the results of this research will be able to provide an important contribution to insight and intellectual development, especially those related to the topic of the influence of environmental awareness, carbon performance, carbon volume and disclosure of carbon emissions on company performance. The results of this research are also expected to be able to reflect the company's performance in terms of environmental awareness, carbon performance, carbon volume, and disclosure of carbon emissions carried out by the company so that it can be taken into consideration in decision making, especially in investing for investors in the primary consumer goods sector (Consumer Non-Cyclicals). And this research hopes that the government as a regulator will create a policy regarding the obligation to publish sustainability reports so that companies can publish them comprehensively.

The limitations of this research are that the sample size is limited because many companies do not report annual reports and sustainability reports consistently from 2021-2022, and the format for presenting sustainability reports is still different from one company to another. So the suggestion that can be given is that further research should be able to increase or expand the number of samples not only from one sector but from several sectors listed on the Indonesia Stock Exchange, as well as providing comparisons between company

sectors so that the influence of each variable from the sector can be known. different. Future research is also expected to consider adding other variables related to the environment which are thought to have a strong influence on company performance, such as green investment, environmental performance, environmental disclosure and green accounting.

## REFERENCE

- (2023, Oktober 1). Retrieved From Daerah.Sindonews.Com: <https://Daerah.Sindonews.Com/Read/1227211/701/Sungai-Cibeet-Diduga-Tercemar-Limbah-Warga-Mengeluh-Air-Hitam-Dan-Bau-Menyengat-1697440241>
- (2023, Januari 2). Retrieved From Detik.Com: <https://Www.Detik.Com/Sumut/Berita/D-6508668/Walhi-Warga-Aceh-Timur-Jadi-Korban-Pencemaran-Udara-Perusahaan-Migas>
- A. Badawi., S. J. (2022). *Riset Terapan Dengan Aplikasi Statistika*. Widina Media Utama.
- Adrati, S., & Augustine, Y. (2022). Pengaruh Volume Emisi Karbon, Pengungkapan Emisi Karbon, Pengungkapan Praktik Manajemen Emisi Karbon Terhadap Kinerja Perusahaan. *Jurnal Kontemporer Akuntansi; Vol. 2*.
- Afnilia, F., & Astuti, C. D. (2023). Pengaruh Volume Emisi Karbon, Pengungkapan Emisi Karbon, Dan Tata Kelola Perusahaan Terhadap Nilai Perusahaan. *Jurnal Ekonomi Trisakti*, 3795-3804.
- Afriani, W., & Anis, I. (2022). Pengaruh Sustainability Awareness Terhadap Nilai Perusahaan Industri Dasar Dan Kimia Yang Terdaftar Di Bursa Efek Indonesia. *Jurnal Ekonomi Trisakti*, 1301-1314.
- Aprilia. (2022). Akuntabilitas Dan Transparansi Dalam Pengelolaan Keuangan. *Jurnal Risma*.
- Arhinful, R., & Radmehr, M. (2023). The Effect Of Financial Leverage On Financial Performance: Evidence From Non-Financial Institutions Listed On The Tokyo Stock Market. *Emerald*.
- Arif, M., & Hardimanto, Z. Z. (2023). Kinerja Ekonomi Dan Dampaknya Terhadap Degradasi Lingkungan Hidup Di Indonesia. *Jurnal Litbang Sukowati : Media Penelitian Dan Pengembangan*, 44-45.
- Asjuwita, M., & Agustin, H. (2020). Pengaruh Kinerja Lingkungan Dan Biaya Lingkungan Terhadap Profitabilitas Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Tahun 2014-2018. *Jurnal Eksplorasi Akuntansi*, 3327-3345.
- Asyifa, D. A., & Burhany, D. I. (2022). Carbon Emission Disclosure And Environmental Performance Effect On Firm Value. *International Journal Of Arts And Social Science*.
- Avelyn, N., & Syofya, E. (2023). Pengaruh Ukuran Perusahaan, Kinerja Lingkungan, Dan Voluntary Disclosure Terhadap Nilai Perusahaan: Studi Empiris Perusahaan Sektor Industri Dasar Dan Kimia Yang Terdaftar Di Bursa Efek Indonesia. *Jurnal Eksplorasi Akuntansi (Jea)*, Vol. 5, 214-232.
- Ayaz, Zabri, M., & Ahmad. (2021). An Empirical Investigation On The Impact Of Capital Structure On Firm Performance: Evidence From Malaysia. *Managerial Finance*, 1107-1127.
- Azis, I. (2022). Upaya Korporasi Mengevaluasi Tanggung Jawab Sosial Dalam Konteks Pelaporan Berkelanjutan. *Nobel Management Review*, 2723-4983.
- Bahriansyah, R. I., & Ginting, Y. L. (2022). Pengungkapan Emisi Karbon Terhadap Nilai Perusahaan Dengan Media Exposure Sebagai Variabel Moderasi. *Jrap (Jurnal Riset Akuntansi Dan Perpajakan) Vol. 9*, 226- 237.
- Baltagi. (2021). *Econometrics (6 Ed.)*. Springer.

- Basuki, M. S. (2021). *Pengantar Metode Penelitian Kuantitatif*. Media Sains Indonesia.
- Brigham, Eugene, & Houston. (2010). *Dasar-Dasar Manajemen Keuangan. Edisi 11*. Jakarta: Selemba Empat.
- Busch, T., & Bassen, A. (2022). Corporate Carbon And Financial Performance Revisited. *Economics And Social Sciences*, 154-171.
- Chaerul, M., & Artika, I. (2021). Aplikasi Model Sistem Dinamik Untuk Evaluasi Skenario Pengelolaan Sampah Di Wilayah Pelayanan Tempat Pengolahan Dan Pemrosesan Akhir Sampah (Tppas) Nambo. *Jurnal Permukiman Vol. 16*, 101-115.
- Choi. (2013). An Analysis Of Australian Company Carbon Emission Disclosures. *Pacific Accounting Review*, 58- 79.
- Christine, & Augustine, Y. (2019). Pengaruh Modal Intelektual Dan Kesadaran Lingkungan Terhadap Kinerja Perusahaan Perbankan Di Indonesia.
- Daron. (2018). Inovasi, Realokasi, Dan Pertumbuhan. *Tinjauan Ekonomi Amerika*.
- Ernawati, & Santoso, S. B. (2021). Pengaruh Ukuran Perusahaan, Kepemilikan Institusional, Komisaris Independen Dan Leverage Terhadap Kinerja Keuangan. *Kompartemen: Jurnal Ilmiah Akuntansi*, 231-246.
- Fadhilah, N., & Meihendri. (2023). Pengaruh Ukuran Perusahaan, Leverage Dan Likuiditas Terhadap Kinerja Keuangan Perusahaan.
- Fahmi. (2012). *Pengantar Manajemen Keuangan*. Bandung : Alfabeta.
- Gabrielle, & Toly, A. A. (2019). The Effect Of Greenhouse Gas Emissions Disclosure And Environmental Performance On Firm Value: Indonesia Evidence. *Jurnal Ilmiah Akuntansi Dan Bisnis, Vol. 14*, 106-119.
- Ganda, F., & Milondzo, K. S. (2018). The Impact Of Carbon Emissions On Corporate Financial Performance: Evidence From The South African Firms. *Journal Sustainability-Mdpi*.
- Ghozali. (2018). *Aplikasi Analisis Multivariate Dengan Program Ibm Spss 25*. Semarang: Badan Penerbit Universitas Diponegoro.
- Gujarati, & Porter. (2015). *Dasar-Dasar Ekonometrika Buku 2, Edisi 5*. Jakarta: Selemba Empat.
- Handoko, B. (2022). Memahami Kriteria Dan Tugas Komisaris Independen Di Perusahaan Publik. .
- Hapsari. (2023). Analisis Penerapan Laporan Keberlanjutan (Sustainability). *Jurnal Ilmiah Akuntansi*, 65-72.
- Hasiholan., S. W., & Pranaditya. (2018). Pengaruh Kinerja Lingkungan, Biaya Lingkungan Dan Ukuran Perusahaan Terhadap Kinerja Keuangan Dengan Corporate Social Responsibility (Csr) Sebagai Variabel Intervening (Studi Kasus Perusahaan Studi Kasus Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa. *Journal Of Accounting*, 1-12.
- Hertina, D., & Z. B. (2022). Dampak Debt To Equity Ratio Dan Debt To Asset Ratio Terhadap Kinerja Keuangan. *Fair Value : Jurnal Ilmiah Akuntansi Dan Keuangan*.
- Houqe, M. N., & Opore, S. (2022). The Effects Of Carbon Emissions And Agency Costs On Firm Performance. *Journal Risk And Financial Management*.
- Isbanah. (2015). Pengaruh Esop, Leverage, And Ukuran Perusahaan Terhadap Kinerja Keuangan Perusahaan Di Bursa Efek Indonesia. *Jurnal Riset Ekonomi Dan Manajemen, Vol. 15*, 28-41.
- Jannah, & Muid. (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).
- Kasmir. (2012). *Analisis Laporan Keuangan*. Jakarta: Pt. Raja Grafindo Persada.

- Khairunisa, S., & Pohan, H. T. (2022). Pengaruh Pengungkapan Emisi Karbon, Kinerja Lingkungan Dan Biaya Lingkungan Terhadap Kinerja Keuangan Perusahaan. *Jurnal Ekonomi Trisakti*, 283-292.
- Khairunnisa. (2019). Analisis Pengaruh Kebijakan Dividen, Keputusan Investasi Dan Keputusan . *Jurnal Aset (Akuntansi Riset)*, 123-136.
- Khoulid, M., & Amina, A. (2017). Green Advertising And Environmentally Consumption: The Level Of Awareness And Moroccan Costumer's Perception. *Iosr Journal Of Business And Management (Iosr-Jbm)*, 1-11.
- Kurnia, P., Darlis, E., & A. A. (2020). Carbon Emission Disclosure, Good Corporate Governance, Financial Performance, And Firm Value. *Journal Of Asian Finance, Economics And Business Vol 7*, 223-231.
- Kusumawati, D., & Murwaningsari, E. (2023). Pengaruh Akuntansi Hijau Dan Kinerja Karbon Terhadap Kinerja Perusahaan Dengan Karakteristik Laporan Tahunan Sebagai Variabel Moderasi . *Jurnal Ekonomi Trisakti*, 2945-2.
- Lee, J.-H., & Cho, J.-H. (2021). Firm-Value Effects Of Carbon Emissions And Carbon Disclosures – Evidence From Korea. *International Journal Of Environmental Research And Public Helath*.
- Lestari, A. D., & Khomsiyah. (2023). Pengaruh Kinerja Lingkungan, Penerapan Green Accounting, Dan Pengungkapan Sustainability Report Terhadap Nilai Perusahaan. *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi (Jebma)*.
- Liu, Y. S., & Zhou, X. (2023). Carbon Emissions, Carbon Disclosure And Organizational Performance. *Sciencedirect*.
- Luo, L., & Tang, Q. (2020). Does Voluntary Carbon Disclosure Reflect Underlying Carbon. *Journal Of Contemporary Accounting & Economics*, 191-205.
- Mahmud, M. T. (2019). Legitimacy Theory And Its Relationship To Csr Disclosures (A Literature Review). Maichum, K., & Parichatnon, S. (2017). Factors Affecting On Purchase Intention Towards Green Products: A Case Study Of Young Consumers In Thailand. *International Journal Of Social Science And Humanity, Vol. 7*.
- Mardji, T. M. (2022). Determinan Nilai Perusahaan. *Jurnal Akuntansi*.
- Mazaya, R., & Barokah, Z. (2022). Dampak Emisi Karbon Terhadap Kinerja Keuangan Perusahaan (Studi Empiris Pada Perusahaan Di Indonesia Dan Malaysia).
- Miah, M. D., Hasan, R., & Usman, M. (2021). Carbon Emissions And Firm Performance: Evidence From Financial And Non-Financial Firms From Selected Emerging Economies. *Journal Sustainability-Mdpi*.
- Monica, Daromes, F. E., & Ng, S. (2021). Women On Boards As A Mechanism To Improve Carbon Emission Disclosure And Firm Value. *Jurnal Ilmiah Akuntansi Dan Bisnis*.
- Muhammad, G. (2021). The Impact Of Carbon Disclosure On Firm Value With Foreign Ownership As A Moderating Variable. *Jurnal Dinamika Akuntansi Dan Bisnis*, 1-14.
- Mukono, J. (2020). *Pencemaran Udara Dalam Ruangan Dan Dampaknya Pada Kesehatan Karyawan Di Perusahaan Dan Keluarga Di Rumah*. Surabaya: Universitas Airlangga.
- Murdhaningsih, Harared, B. A., & Malik, M. A. (2024). Pengaruh Leverage Terhadap Kinerja Keuangan Perusahaan. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*.
- Murniati, & Sovita, I. (2021). Penerapan Green Accounting Terhadap Profitabilitas Perusahaan

- Makanan Dan Minuman Di Bursa Efek Indonesia (Bei) Tahun 2015 –2019. *Jurnal Ekonomi Dan Bisnis Dharma Andalas*. Murwaningsari, E., & Rachmawati, S. (2024). The Effect Of Green Banking And Green Investment On Firm Value With Eco-Efficiency As Moderation. *International Journal Of Social And Management Studies*.
- Murwaningsari, E., & Rachmawati, S. (2024). The Effect Of Green Banking And Green Investment On Firm Value With Eco-Efficiency As Moderation. *International Journal Of Social And Management Studies*.
- Napitupulu, R. (2021). *Penelitian Bisnis: Teknik Dan Analisis Data Dengan Spss-Stata-Eviewa Edisi 1*. . Bekasi: Madenatera.
- Nur, A. P., & Woestho, C. (2022). Analisis Kinerja Keuangan Berdasarkan Rasio . *Jurnal Ekonomi Pembangunan Vol. 8*, 28-51.
- Nurfahmi, Y., & Anis, I. (2022). Pengaruh Sustainability Awareness Terhadap Kinerja Keuangan Dan Nilai Perusahaan Di Sektor Pertanian 2016-2020. *Jurnal Ekonomi Trisakti*, 1953-1972.
- Oktaviyana, D., & Kurniati, S. (2023). Pengaruh Leverage, Likuiditas, Struktur Modal Dan Ukuran Perusahaan Terhadap Kinerja Keuangan. *Costing:Journal Of Economic, Business And Accounting* .
- Pratama. (2019). Efek Rumah Kaca Terhadap Bumi. *Buletin Utama Teknik Vol. 14*.
- Pratama, I. S., & Deviyanti, D. R. (2022). Pengaruh Pengungkapan Corporate Social Responsibility Terhadap Institutional Ownership Pada Perusahaan High-Profile Yang Listing Di Bursa Efek Indonesia. *Inovasi: Jurnal Ekonomi, Keuangan Dan Manajemen*, 540-550.
- Pratama, R. (2019). Efek Rumah Kaca Terhadap Bumi. *Buletin Utama Teknik Vol. 14*. Project, T. G. (2020). Temporary Reduction In Co2 Emissions During Covid-19.
- Putri, A. (2022). Pengaruh Ukuran Perusahaan. Leverage, Dan Profitabilitas Terhadap. *Jurnal Ekonomi Trisakti*, 1155-1164.
- Putri, D. R., & Murtanto. (2023). Pengaruh Carbon Emission Disclosure, Carbon Performance, Dan Green Intellectual Capital Terhadap Kinerja Perusahaan. *Jurnal Ekonomi Trisakti*, 1069-1080.
- Putri, H. D., & Agustin, H. (2023). Pengungkapan Emisi Karbon Dapat Mempengaruhi Nilai Perusahaan Pada Perusahaan Manufaktur. *Jurnal Akademi Akuntansi, Vol. 6*, 107-124.
- Quére, L., Rb, J., Mw, J., Ajp, S., S, A., Rm, A., . . . Jg, C. (2020). Pengurangan Sementara Emisi Co2 Global Harian Selama Pengurangan Paksa Akibat Covid-19. *Nat Klim*, 1-7.
- Rahmanita. (2020). Pengaruh Carbon Emission Disclosure Terhadap Nilai Perusahaan Dengan. *Akuntansi: Jurnal Akuntansi Integratif* , 53-70.
- Rahmanita, & Ayu, S. (2019). Pengaruh Carbon Emission Disclosure Terhadap Nilai Perusahaan Dengan Kinerja Lingkungan Sebagai Variabel Moderasi. *Akuntansi: Jurnal Akuntansi Integratif*.
- Riyanto. (2013). *Analisis Laporan Keuangan*. Yogyakarta: Bpfe.
- Rosaline, V. D., & Wuryani, E. (2020). Pengaruh Penerapan Green Accounting Dan Environmental Performance Terhadap Economic Performance. *Jurnal Riset Akuntansi Dan Keuangan*, 569-578.
- Rusli, Y. M., Augustine, Y., Murwaningsari, E., & Breliastiti, R. (2019). The Moderating Effect Of Competitive Business Strategy On Corporate Environmental Performance And Corporate Carbon Emission Disclosure Towards Corporate Financial Performance.

*Journal Of Economics And Sustainable Development.*

- Safutri, D., Mukhzarudfa, & Tiswiyanti, W. (2023). Pengaruh Pengungkapan Emisi Karbon, Tata Kelola Perusahaan, Dan Kinerja Keuangan : Studi Di Indonesia. *Jurnal Akademi Akuntansi, Vol.6*, 273-293.
- Sanchez, & Lafuente. (2010). Defining And Measuring Environmental Consciousness. *Journal Revista Internacional De Sociologia*, 731-755.
- Sandi, D. A., & Soegiarto, D. (2021). Pengaruh Tipe Industri, Media Exposure, Profitabilitas Dan Stakeholder Terhadap Carbon Emission Disclosure. *Accounting Global Journal*, 99-122.
- Sanubari, C. P., & Wibowo, D. (2021). Perbandingan Tingkat Kelengkapan Mandatory Disclosure Dan Voluntary Disclosure Informasi Akuntansi . *Jurnal Ilmu Dan Riset Akuntansi*.
- Sapulette, S. G., & Limba, F. B. (2021). Pengaruh Penerapan Green Accounting Dan Kinerja Lingkungan Terhadap Nilai Perusahaan Manufaktur Yang Terdaftar Di Bei Tahun 2018-2020. *Kupna Jurnal, Vol 2*.
- Saputri, S. A. (2023). Pengaruh Kinerja Lingkungan, Pengungkapan Lingkungan, Dan Biaya Lingkungan Terhadap Nilai Perusahaan. *Jurnal Riset Akuntansi*.
- Sari, D. K., & Wahidahwati. (2021). Pengaruh Pengungkapan Sustainability Report, Ukuran Perusahaan, Profitabilitas, Dan Leverage Terhadap Nilai Perusahaan. *Jurnal Ilmu Dan Riset Akuntansi*.
- Sari, K. H., & Budiasih, I. G. (2022). Carbon Emission Disclosure Dan Nilai Perusahaan. *E-Jurnal Akuntansi*.
- Sembiring. (2005). *Karakteristik Perusahaan Dan Pengungkapan Tanggung Jawab Sosial*. Solo.
- 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. 103-114.
- Sihombing, P. (2021). Analisis Perbandingan Kinerja Keuangan Perusahaan Sebelum Dan Pada Masa Pandemi Covid-19.
- Siregar, M. A., & Widodo, A. (2021). Pengaruh Environmental Awareness Dan Green Promotion Terhadap Keputusan Pembelian Air Minumaqua Di Kota Medan Dengan Eco-Label Sebagai Variabel Mediasi. *E- Proceeding Of Management : Vol.8*, 5918.
- Sisdianto, E., & Fitri, A. (2020). Pengaruh Firm Growth And Firm Value On Corporate Social Responsibility In Indonesia. *Al-Mal: Jurnal Akuntansi Dan Keuangan Islam*, 9-24.
- Sugiyono. (2019). *Metode Penelitian Kuntitatif Kualitatif Dan R&D (Sutopo (Ed.))*. Alfabeta.
- Tan, K. (2022). Do Environmental Strategy And Awareness Improve Firms' Environmental And Financial Performance? The Role Of Competitive Advantage. *Mdpi*.
- Trinks, A., & Mulder, M. (2020). An Efficiency Perspective On Carbon Emissions And Financial Performance. *Sciencedirect*.
- Ulfa, F. N., & Ermaya, H. N. (2019). Effect Of Exposure Media, Enviromental Performance And Industrial Type On Carbon Emission Disclosure. *Jurnal Ilmiah Akuntansi Universitas Pamulang* .
- Wahyudi, J. (2016). Mitigasi Emisi Gas Rumah Kaca The Mitigation Of Greenhouse Gases Emission. *Jurnal Litbang Vol. Xii*, 104-112.
- Wiratno, A., & F. M. (2020). Profitabilitas, Ukuran Perusahaan, Dan Leverage Mempengaruhi Pengungkapan Emisi Karbon Di Indonesia. *Jurnal Ekonomi, Bisnis Dan Akuntansi (Jeba) Volume 22*.

- Wirawan, J., & Setijaningsih, H. T. (2022). Analisis Pengungkapan Emisi Karbon Di Indonesia. *Jurnal Muara Ilmu Ekonomi Dan Bisnis*, 235-249.
- Witjaksono, R. B., & Djaddang, S. (2018). Valuasi Kesadaran Lingkungan, Corporate Social Responsibility Terhadap Kualitas Laba Dengan Moderasi Komite Audit. *Jurnal Ekonomi Dan Bisnis, Volume 21*, 97-114.
- Wooldridge. (2016). *Introductory Econometric*. Boston: Cengage Learning.
- Yan, J., & Zhou, H. (2022). The Synergistic Effect Of Carbon Performance And Technological Innovation On Corporate Financial Performance. *Frontiers In Psychology*.
- Yu, Z., & Umar, M. (2021). How Environmental Awareness And Corporate Social Responsibility Practices Benefit The Enterprise? An Empirical Study In The Context Of Emerging Economy. *Emerald*.
- Zenitha. (2022). Pengaruh Green Accounting Dan Kinerja Lingkungan Terhadap Nilai Perusahaan Pada Perusahaan Manufaktur Di Bei. *Jaai, Vol 23*.