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ANALYSIS OF THE EFFECT OF MEDIA EXPOSURE, COMPANY SIZE, AND LEVERAGE ON CARBON EMISSION DISCLOSURE

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Abstract

This study aims to determine the influence of media exposure, company size and leverage on carbon emissions disclosure in manufacturing companies belonging to the listed industrial sub-sector, listed on the Indonesia Stock Exchange in the period 2019-2021. The research sample was 16 companies that met the criteria, in 3 years of observation there were 48 companies. Data collection was carried out using the documentary method. Collected research data were analyzed using descriptive analysis, classical hypothesis testing, multiple linear regression analysis and hypothesis testing. The results of this study show that media exposure and firm size have a positive effect on carbon emissions disclosure, while leverage has a negative effect on disclosure. carbon emissions.

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I. INTRODUCTION

The emergence of various natural disasters, climate change, and environmental issues are major concerns at this time. Global warming is one of the impacts of climate change that is important to be aware of. The result of increasing greenhouse gas (GHG) emissions is climate change which is a major concern for developed and developing countries. The greenhouse effect occurs due to increasing concentrations of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), and solar energy trapped in the earth's atmosphere (Anggraeni, 2015). Among these gases, CO₂ emissions are the main cause of environmental pollution problems.

Every year, various air pollution phenomena emerge, but there are factories that are reluctant to measure their carbon emissions. One of them, a wood processing factory in Mewek Village, Kalimanah District, Purbalingga Regency, Central Java, refused to participate in a carbon emission audit organized by the Purbalingga Government Environmental Service. This carbon emission audit was carried out in response to many public complaints about the poor air quality around the factory (Humas Sekretariat Kabinet, 2023). Although there was a refusal from the factory, emission testing was still needed to understand its impact on the environment. The factory objected to the emission test because the air quality testing technology required drilling holes in the chimney from burning wood. This caused the factory to have to stop the production process for an entire day (Dinkominfo, 2011). However, as explained in (*PERPRES No. 61 Tahun 2011*, n.d.) the factory as an economic entity has an obligation to contribute to efforts to reduce greenhouse gas emissions (including carbon emissions). Therefore, companies must play a role in disclosing their carbon emissions as part of their responsibility to reduce the impact of greenhouse gases.

Disclosure of carbon emission measurements is essential in addressing the increasingly pressing challenge of climate change. Carbon emissions, particularly from industrial activities, transportation, and energy generation, contribute significantly to global warming and environmental degradation. By disclosing these emission data, companies and organizations can identify the main sources of emissions, allowing them to take appropriate mitigation measures. In addition, transparency in emissions management creates trust among consumers and stakeholders, while enhancing a company's reputation in an era of environmental awareness. Complying with increasingly stringent regulations on carbon emissions is also an important reason for companies to make these disclosures, avoiding legal sanctions and demonstrating their commitment to sustainable practices. Furthermore, emission disclosures encourage innovation in more environmentally friendly technologies and processes, which not only benefit the company itself but also society at large. Thus, disclosure of carbon emission measurements

becomes an integral part of a responsible and sustainable business strategy, which is essential to creating a greener future for future generations.

The first factor in carbon emission disclosure that influences is media exposure which plays an important role in a social movement such as in environmental groups (Tilly, 2013). Media exposure also functions as an important tool to disseminate information to the wider community. Information about company activities is included in documents that can be submitted to the public. Therefore, companies must be aware of the media's interest in their activities, because this is related to their image and reputation. Jannah & Muid (2014) showed in their study that media exposure has a positive effect on carbon emission disclosure. The use of this media forces companies to be more likely to disclose information voluntarily to gain public legitimacy and positive feedback from stakeholders. In addition, research by (Nur & Priantinah, 2012) also noted that carbon emission disclosure is significantly influenced by Media Exposure. They explained that business entities have an ethical responsibility to disclose information about their activities related to financial, environmental, and social aspects. When the media actively monitors a company's environmental activities, the company will be more motivated to publish information about its environmental activities.

The second factor that influences carbon emission disclosure is company size, namely the size of the company in terms of total volume. Assets, sales level, stock market value, etc. Large companies are considered to be able to provide resources to cover mitigation costs and expenses related to greenhouse gas emissions. Because carbon intensity tends to be higher in large companies, large companies also tend to be more sensitive to environmental issues and willing to provide high-quality voluntary information to achieve compliance. Several previous studies, such as those conducted by (Choi et al., 2013) company size has a positive effect on carbon emission disclosure. This finding is supported by research by Lorenzo et., al (2009) dan Borghei-Ghomi dan Leung (2013), which found empirical evidence of a significant relationship between company size and the level of carbon emission disclosure (Mulya & Rohman, 2020).

The third factor is leverage, a ratio used to measure how much of a company's assets are financed by debt. Leverage is also used to see the amount of assets used as collateral for debt. According to (Luo et al., 2013) Leverage has a negative impact on disclosure because large debt and interest payments can limit a company's ability to implement carbon mitigation and disclosure strategies. Companies with high leverage will be careful every year in reducing and disclosing their leverage, especially regarding costs associated with reducing carbon emissions.

According to research (Mulya & Rohman, 2020), Leverage has an impact on carbon emission disclosure and if a company's leverage ratio is high, it will cause the company to be unable to meet its obligations and unable to absorb the financial impacts that cause losses

related to disclosure of carbon information. (Jannah & Muid, 2014) show that leverage has a significant impact on CED because those with higher levels of leverage are more aware of all decisions related to costs, including actions to monitor and reduce carbon emissions. (Suhardi & Purwanto, 2015) dan (Choi et al., 2013) showed that leverage does not affect carbon emission disclosure. Companies with high and low leverage ratios are more cautious in disclosing their carbon emissions voluntarily, because this can increase the company's operating costs. This also causes an increased (and worsening) financial burden on the business as operating costs increase. Companies may choose to use their resources to improve operations rather than disclose them voluntarily.

Some of the points above explain the variables that influence carbon emission disclosure. However, the results are still inconsistent, so this study is interesting to consider previous findings on factors that influence carbon emission disclosure. In this study, it is the same as previous studies, namely the dependent and independent variables of carbon emission disclosure used are media exposure, firm size, and leverage. Meanwhile, the difference is that this study uses data from manufacturing companies in the industry listed on the Indonesia Stock Exchange and the research period is 2019-2021.

II. RESEARCH METHOD

This research uses a descriptive quantitative approach, which is data expressed in the form of numbers representing the value of the quantity or variable. Specifically, the data comes from the annual reports of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2019-2021.

Table 1. Carbon Emission Disclosure Index

Category	Item
1. Climate Change (Climate change): risks and opportunities	<p>CC1 – Assessment/description of climate change-related risks and actions taken or planned to be taken to address the risks.</p> <p>CC2 – Current (and future) assessment/description of the financial implications, business implications, and opportunities of climate change.</p>
2. Green House Gas (GHG emissions)	<p>GHG1 – Description of the methodology used to calculate (quantify) GHG (greenhouse gas) emissions</p> <p>GHG2 – existence of external verification in measuring the amount of GHG emissions</p> <p>GHG3 – total GHG emissions generated</p> <p>GHG4 – disclosure of scope 1 and 2, or scope 3 GHG emissions</p> <p>GHG5 – disclosure of sources of GHG emissions</p> <p>GHG6 – disclosure of GHG facilities or segments</p> <p>GHG7 – Comparison of GHG emissions with the previous year.</p>

- 3. Energy Consumption Accounting
 - EC1** - total energy consumed
 - EC2** - quantification of energy used from renewable sources
 - EC3** - disclosure by type, facility or segment.

- 4. GHG Reduction and Cost
 - RC1** - detailed plan or strategy to reduce GHG emissions
 - RC2** - specification of target levels and years for reducing GHG emissions
 - RC3** - Emission reductions and costs or savings achieved to date as a result of the carbon emission reduction plan
 - RC4** - costs of future emission costs taken into account in capital expenditure planning

- 5. Carbon Emission Accountability
 - AEC1** – indication of the board committee responsible for actions related to climate change
 - AEC2** – description of the mechanism by which the board reviews the company’s progress on climate change.

Sumber : (Choi et al., 2013)

In Table 1, the second category GHG4 refers to scopes 1, 2, and 3. This scope covers both direct and indirect sources of emissions of the company. A summary of this scope is presented in Table 2.

Table 2. Scope Description

Scope	Type	Explanation
Scope 1	Direct GHG Emissions	<ul style="list-style-type: none"> • GHG emissions occur from owned sources or from the combustion of boilers, furnaces, vehicles owned by the company; emissions from chemical production on equipment owned and controlled by the company. • Direct CO2 emissions from biomass combustion are not included in scope 1 but are reported separately. • GHG emissions that are not included in the Kyoto protocol, for example CFC, NOX, etc. should not be included in scope 1 but are reported separately.
Scope 2	Indirect GHG emissions from electricity	<ul style="list-style-type: none"> • Covers GHG emissions from electricity generation purchased or consumed by the company. • Scope 2 physically occurs at the facility where electricity is generated.
Scope 3	Other indirect GHG emissions	<ul style="list-style-type: none"> • Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. • Scope 3 emissions are a consequence of a company’s activities, but occur from sources that the company does not own or control. • Examples of scope 3 emissions are the extraction and production of purchased raw materials, the transportation of purchased fuels, and the use of products and services sold.

Sumber: (Choi et al., 2013)

A score of “1” is given to a company if it discloses an item and a score of “0” is given if it discloses an item. The total score obtained will be calculated using the following formula:

$$CED = \frac{\sum di}{M} \text{ atau } CED = \frac{Total Score}{Maximum Total Score}$$

Information:

CED = Carbon Emission Disclosure

$\sum di$ = Total overall score 1 achieved by the company

M = Total maximum items that can be disclosed (18 items)

Table 3.Operational Definition of Variables

No	Variable	Definition	Measurement	Scale
1	Carbon Emissions Disclosure	to assess a company's carbon emissions and set targets for reducing those emissions.	$CED = \frac{(Total Score)}{(Maximum Total Score)}$	Ratio
2	Media Exposure	Media Exposure is a means of communication used to provide information to the community.	Using a dummy variable, namely giving a score of "1" to companies that disclose information about the company's carbon emissions in the sustainability report, or the company's website. Conversely, for companies that do not disclose carbon emissions will be given a score of "0"	Nominal
3	Company Size	The size of a company is determined by its total assets	Company size = Natural logarithm value of the company's Total Assets	Nominal
4	Leverage	The comparison between total debt and total assets owned by the company.	$\frac{Total Debt}{Total Assets}$	Ratio

The population of this study is manufacturing companies listed on the Indonesia Stock Exchange (IDX). Data is taken from company reports for 3 years, namely 2019 - 2021, totaling 142 companies.

In this study, the sample is (16 x 3 years = 48) manufacturing companies listed on the Indonesia Stock Exchange. This number is quite small because Indonesia is still a developing country that is not required to reduce greenhouse gas emissions. As a result, information regarding carbon emissions from companies in Indonesia is still limited. In addition, disclosure of information in sustainability reports is still voluntary, especially regarding carbon emissions.

Sampling technique with Purposive Sampling, with the following criteria:

1. Manufacturing companies listed on the IDX consecutively during the period 2019-2021

2. Manufacturing companies that provide annual reports consecutively during the period 2019-2021.
3. Manufacturing companies that provide sustainability reports consecutively during the period 2019-2021.
4. Manufacturing companies that disclose carbon emissions (including at least one policy related to carbon/greenhouse gas emissions or disclosing at least one carbon emission disclosure item).

Data analysis using classical assumption tests and multiple linear regression analysis and hypothesis testing including determination coefficient tests (R² test), significance tests (F test), and individual parameter significance tests (T test).

III. DATA ANALYSIS AND DISCUSSION

DESCRIPTIVE STATISTICAL ANALYSIS

The following table illustrates the results of descriptive analysis for each variable in the study:

Table 4. Descriptive Test

	N	Minimum	Maximum	Mean	Std. Deviation
Media Exposure	48	0	1	.81	.394
Company Size	48	26.73	32.49	29.6673	1.65601
Leverage	48	.13	.83	.4488	.21389
CED	48	.06	.72	.4546	.18007
Valid N (listwise)	48				

Source: secondary data processed with SPSS (2023)

Based on the table above, it can be seen that from the 48 available data, the Media Exposure variable has a minimum value of 0 and a maximum value of 1. The mean value is 0.81 and the standard deviation is 0.394. The Company Size variable has a minimum value of 26.73 and a maximum value of 32.49. The mean value is 29.6673 and the standard deviation is 1.65601. The Leverage variable has a minimum value of 0.13 and a maximum value of 0.83. The mean is 0.4488 and the standard deviation is 0.21389. The CED variable has a minimum value of 0.06 and a maximum value of 0.72. The mean is 0.4546 and the standard deviation is 0.18007.

NORMALITY TEST

A normality test in SPSS is a statistical procedure used to determine whether a dataset follows a normal distribution, which is a key assumption for many parametric tests, including regression analysis and t-tests. In SPSS, normality can be assessed using both graphical methods, such as histograms, Q-Q plots, and P-P plots, and statistical tests, such as the Kolmogorov-Smirnov (K-S) test. The results of the normality test can be presented in the table below.

Table 5. Normality Test

		One-Sample Kolmogorov-Smirnov Test	
		Unstandardized Residual	
N			48
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		.09642768
Most Extreme Differences	Absolute		.149
	Positive		.056
	Negative		-.149
Test Statistic			.149
Asymp. Sig. (2-tailed)			.10 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Source: secondary data processed with SPSS (2023)

Based on the table above, it can be seen that the Asymp. Sig. (2-tailed) value is where $0.10 > 0.05$, which means that the residual data values in this study are normally distributed and thus can be used for the regression model.

MULTICOLLINEARITY TEST

A regression model is said to be free from multicollinearity problems if it has a tolerance value > 0.1 and $VIF < 10$ (Ghozali, 2011). Based on data processing, the following results were obtained:

Table 6. Multicollinearity Test

Model	T	Sig.	Collinearity Statistics	
			Tolerance	VIF
1 (Constant)	-2.577	.013		
Media Exposure	9.642	.000	.992	1.008
Company Size	3.128	.003	.977	1.024
Leverage	.418	.678	.984	1.016

Based on the table above, the results of the calculation of tolerance values and VIF values can be seen. The tolerance value for the Media Exposure variable (X1) is 0.992 with a VIF value of 1.008. For the Company Size variable, it has a tolerance value of 0.977 with a VIF value of 1.024. While for the Leverage variable, it has a tolerance value of 0.984 with a VIF value of 1.016. Each of these independent variables has a tolerance coefficient greater than 0.1 and $VIF < 10$, so it can be concluded that there is no sign of multicollinearity between these independent variables.

HETEROSCEDASTICITY TEST

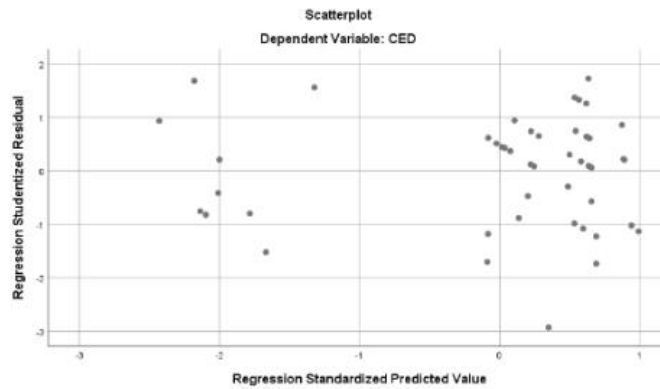


Figure 1. Heteroscedasticity Test

From the results of the non-uniformity test in the image above, it is clear that the points are randomly distributed and do not form a particular pattern. This indicates that there is no heteroscedasticity in the regression model.

AUTOCORRELATION TEST

Table 7. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.845 ^a	.713	.694	.09966	1.630

a. Predictors: (Constant), Leverage, Media Exposure, Ukuran Perusahaan
b. Dependent Variable: CED

Source: secondary data processed with SPSS (2023)

Based on the SPSS output results in the table above, the Durbin Watson value is 1.630, this value is greater (>) than the DU value of 1.6078 and the Durbin Watson value is smaller (<) than the 4-DU value of 2.3922. So it can be concluded that there is no sign of autocorrelation.

MULTIPLE LINEAR REGRESSION ANALYSIS

Multiple regression is a statistical technique used to analyze the relationship between one dependent variable and two or more independent variables. It extends simple linear regression by allowing researchers to assess how multiple predictors simultaneously influence an outcome variable. Each coefficient indicates the expected change in the dependent variable for a one-unit increase in the corresponding independent variable, assuming all other variables

are held constant. Multiple regression helps quantify the relative impact of each predictor, identify significant variables, and predict outcomes based on a combination of inputs. It also allows researchers to control for confounding variables, isolating the effect of each independent variable on the dependent variable.

Table 8. Multiple Linear Regression Analysis

		Coefficients ^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	-.673	.261		-2.577	.013
	Media Exposure	.357	.037	.782	9.642	.000
	Company Size	.028	.009	.256	3.128	.003
	Leverage	.029	.069	.034	.418	.002

a. Dependent Variable: CED

Source: secondary data processed with SPSS (2023)

Based on the SPSS output above, the equation can be obtained:

$$Y = -0.673 + 0.357ME + 0.028SIZE + 0.029LEV + e$$

1. The resulting constant value is -0.673, which indicates that if the independent variables Media Exposure, Company Size and Leverage are zero, then the carbon emissions disclosed are -0.673.
2. The regression coefficient value of the Media Exposure variable is 0.357, which indicates that if the Media Exposure variable increases by one unit and the other independent variables remain unchanged, then the carbon emissions exposed to savings will increase by 0.357.
3. The regression coefficient value of the Company Size variable is 0.028, which indicates that if the Company Size variable increases by 1 unit and the other independent variables remain unchanged, then the carbon emissions disclosure will increase by 0.028.
4. The regression coefficient value of the Leverage variable is 0.029, which indicates that if the Leverage variable increases by 1 unit and other independent variables remain unchanged, then carbon emission disclosure will increase by 0.029.

HYPOTHESIS TESTING

Hypothesis testing in regression analysis is a statistical method used to determine if there is a significant relationship between the independent variable(s) and the dependent variable. It helps researchers and analysts validate assumptions and draw conclusions about the

population based on sample data. The process begins by formulating two hypotheses: the **null hypothesis (H₀)**, which assumes no relationship between the independent and dependent variables (e.g., the coefficient of the independent variable is zero), and the **alternative hypothesis (H₁)**, which suggests that a significant relationship exists. After fitting the regression model to the data, a **t-test** is performed on each regression coefficient to evaluate its statistical significance. The t-statistic measures the difference between the estimated coefficient and zero, relative to its standard error. If the resulting **p-value** is less than the chosen significance level (e.g., 0.05), the null hypothesis is rejected, indicating that the variable significantly influences the dependent variable.

Table 9. Significance Test Of Individual Parameters (Uji t)

		Coefficients ^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.673	.261		-2.577	.013
	Media Exposure	.357	.037	.782	9.642	.000
	Company Size	.028	.009	.256	3.128	.003
	Leverage	.029	.069	.034	2.418	.002

a. Dependent Variable: CED

Source: SPSS output results and processed data, 2023

In the Media Exposure variable (X₁) has a t-value of 9.642 > t table 1.745 and a sig value of 0.000 < 0.05, this shows that Media Exposure has a significant positive effect on carbon emission disclosure. In the Company Size variable (X₂) has a t-value of 3.128 > t table 1.745 and a sig value of 0.003 < 0.05, this shows that Company Size has a significant positive effect on carbon emission disclosure. In the Leverage variable (X₃) has a t-value of 2.418 > t table 1.745 and a sig value of 0.002 < 0.05, this shows that Leverage has a significant effect on carbon emission disclosure.

DISCUSSION

THE INFLUENCE OF MEDIA EXPOSURE ON CARBON EMISSION DISCLOSURE

The results of this study's analysis indicate that the Media Exposure variable has a positive effect on carbon emission disclosure. Thus, the results of this analysis support the hypothesis

(H1). Companies will be more aggressive in disclosing information, including disclosing carbon emission information, because company disclosure will greatly influence stakeholder opinion on the company's image. The media plays an important role in encouraging companies to publish their environmental activities in order to obtain positive responses from stakeholders. This is because disclosure through the company's media will gain greater legitimacy or credibility in the eyes of the public. Companies tend to disclose all of their activities, including efforts to reduce carbon emissions which are seen as having the potential to increase the company's financial performance value, thus attracting investors to come and invest.

The results of this study are supported by research studies (Jannah & Muid, 2014; Pratiwi & Sari, 2016; Ulfa & Ermaya, 2019) that Media Exposure has a positive effect on carbon emission disclosure. However (Nurdiawansyah et al., 2018) showed that Media Exposure has no effect on CED (Carbon Emission Disclosure). It does not affect whether external media has news about information related to the company's carbon emissions, it does not affect Media Exposure. This does not affect the pressure or encouragement of companies to disclose more carbon emission information to stakeholders. Disclosure of carbon emissions is because companies adopt values to gain public legitimacy, namely paying more attention to the environment.

THE EFFECT OF COMPANY SIZE ON CARBON EMISSION DISCLOSURE

The results of this study's analysis indicate that changes in company size have a positive impact on carbon emission disclosure. Therefore, the results of this analysis support hypothesis (H2). Large companies disclose more information about their carbon reduction activities than small companies. Large companies are considered by the government to be the largest pollutant emitters and their survival is more important than the survival of small companies, thus creating greater pressure on large companies regarding carbon emission issues related to the company's existence. As a result, companies will show a greater response to growing environmental problems. One of them is by providing more information about greenhouse gas emissions, especially carbon (CO₂), as used in this study.

Carbon emission disclosure includes voluntary disclosures that are additional reporting for businesses, which require additional costs because they require resources to identify, collect, and disseminate relevant information. Larger companies tend to be more active in voluntary reporting of their carbon emissions because their larger size and greater availability of resources allow them to prepare more comprehensive information on their carbon emissions. The results of this study are supported by research (Chithambo & Tauringana, 2014) that company size has a positive effect on carbon emission disclosure.

However, according to (Cahya, 2016) carbon emissions are not affected by company size. This may be from the perspective of large companies that do not consider the validity of voluntary disclosure. In Presidential Regulation No. 61 of 2011 it is also not stated that only large companies must disclose their carbon emissions. Allowing all businesses to participate in the goal of reducing carbon emissions.

THE EFFECT OF LEVERAGE ON CARBON EMISSION DISCLOSURE

The results of this study's analysis indicate that the Leverage variable has a negative impact on carbon emission disclosure. Therefore, the results of this analysis support the hypothesis (H3). Companies that have large debts will be careful in reducing and disclosing their carbon emissions, especially those related to spending on carbon neutral actions. High leverage will result in less disclosure. Indeed, Indonesian companies are still not aware of the importance of carbon emission disclosure.

This is in accordance with stakeholder theory that one of the creditors will put pressure on the company so that the company prioritizes debt payments rather than voluntarily disclosing the information. such as carbon emissions. disclosing emissions because this will only increase the company's financial burden. The level of leverage has a negative impact on disclosure because large obligations and interest payments limit the company's ability to implement reduction and disclosure strategies.

In order for disclosure information to be understood and used by stakeholders, intermediary organizations as third parties need to invest resources, time, and technical capabilities. This is done to transform raw data from reports and the environment into concise and easy-to-understand information. Therefore, companies with high leverage may be constrained by the costs incurred in disclosing their carbon emissions. Therefore, they tend not to disclose such information so as not to incur additional costs that burden the company. Companies with higher debt levels will have a greater debt burden, limiting the resources they have to disclose their carbon emissions.

The results of this study are supported by research (Choi et al., 2013; Luo et al., 2013; Majid & Ghozali, 2015) that Leverage has a negative effect on carbon emission disclosure. However, according to (Choi et al., 2013; Suhardi & Purwanto, 2015) shows that Leverage does not affect carbon emission disclosure. Companies with large or small Leverage ratios will be more careful in making voluntary carbon disclosures, because this will cause the company's operational costs to be higher. This also results in the company's financial burden becoming greater (and worse) because operational costs increase. Companies can choose to use company resources to improve company operations rather than disclose them voluntarily.

IV. CONCLUSION AND SUGGESTIONS

Based on the results of research and discussion on the influence of media exposure, company size and leverage carbon emission disclosure on manufacturing companies listed on the IDX during the 2019-2021 period, it can be concluded that media exposure has a positive effect on carbon emission disclosure, which means that the higher the media exposure, the higher the company's chances of disclosing its carbon emissions.

Company size has a positive effect on carbon emission disclosure, which means that company size has an effect on the company's carbon emission disclosure. A large company will certainly have sufficient resources to carry out carbon emission disclosure activities generated by its operations.

Leverage has a negative impact on carbon emission disclosure, this shows that the higher a company's debt, the less likely the company is to disclose its carbon emissions because the company prioritizes its obligations to creditors. And we will be more careful in implementing steps related to expenditure, including controlling carbon emissions and expenditure.

Based on the findings and recommendations for the business world, in addition to paying attention to profit information, the business world must also pay attention to carbon emission disclosure to increase the company's value so that it can be considered by investors. investment center. Stakeholders must also monitor companies in disclosing their carbon emissions, so that companies are encouraged to further improve their carbon emission disclosure.

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