

THE INFLUENCE OF PROFITABILITY, ENVIRONMENTAL PERFORMANCE, COMPANY SIZE AND MEDIA EXPOSURE ON CARBON EMISSION DISCLOSURE IN LISTED BASIC INDUSTRY AND CHEMICAL SECTOR COMPANIES ON THE INDONESIA STOCK EXCHANGE IN 2021-2023

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Received : 25 September 2025

Published : 16 November 2025

Revised : 10 October 2025

DOI : <https://doi.org/10.54443/morfai.v5i5.4393>

Accepted : 05 November 2025

Link Publish : <https://radjapublika.com/index.php/MORFAI/article/view/4393>

Abstract

This study aims to examine the effect of profitability, environmental performance, firm size and media exposure on carbon emission disclosure in basic and chemical industry sector companies listed on the Indonesia Stock Exchange in 2021-2023. The population in this study amounted to 77 companies. The sampling technique used purposive sampling to obtain 25 company samples with 75 observations. This research is a quantitative research using secondary data collected using documentation and literature study techniques obtained through the official website of the Indonesia Stock Exchange www.idx.co.id and the official website of each company which was processed with panel data regression analysis using EViews 12. The results showed that the variables profitability, firm size and media exposure did not affect carbon emission disclosure while the environmental performance variable had a positive and significant effect on carbon emission disclosure.

Keywords: *Carbon Emission Disclosure, Profitability, Environmental Performance, Firm Size, Media Exposure*

INTRODUCTION

The basic and chemical industry sector is a sector of companies that produces products needed by other industries and are essential components of everyday life. Companies in the basic and chemical industry sector are classified as carbon-intensive industries, as categorized by the Ministry of Environment and Forestry and the Ministry of Industry.(Purnami, 2023). Carbon-intensive industries are industries that produce large carbon emissions, thus having a relatively greater impact on environmental pollution. Indonesia has a target of reducing carbon emissions by 29% to 41% in 2030.(Florenia & Handoko, 2021). The government's efforts to support the target include the issuance of Minister of Environment and Forestry Regulation No. 21 of 2022 concerning the Implementation of Carbon Emission Values. Furthermore, there is also Presidential Regulation No. 98 of 2021 concerning the Implementation of Carbon Economic Values to Achieve Nationally Determined Contribution Targets and Control Greenhouse Gas Emissions in National Development. These regulations are one way the government demonstrates its commitment to reducing carbon emissions, with corporate activities being a major contributor.(Nisa, 2023).

Increasing concentrations of greenhouse gas emissions can pose a serious threat to the environment and humans due to their negative impacts. This puts companies under pressure to disclose carbon emissions, plan steps to reduce carbon emissions, and implement climate change mitigation efforts. Carbon emission disclosure aims to increase corporate transparency and accountability. The phenomenon of carbon emission disclosure in the industrial sector can be seen from companies' negligence in their responsibilities to the environment around their operating areas, which has led to problems between the community and the company. In 2021, WALHI North Sumatra conducted an analysis of Toba Pulp Lestari Tbk (INRU). Over the past 10 years, it was stated that Toba Pulp Lestari Tbk (INRU) has been the largest contributor to deforestation in North Sumatra, resulting in environmental damage and increasing carbon emissions. This is inconsistent with the company's claimed sustainability commitments (mongabay.co.id). Then, in February 2022, a demonstration took place by residents of Tuban Regency in front of the Semen Indonesia (Persero) Tbk (SMGR) office. The community complained about the company's activities damaging

and polluting their environment (halopantura.com). Another phenomenon, based on previous research, found that carbon emission disclosure by companies in Indonesia remains low. This is evidenced by the results of previous studies conducted by researchers. The following statistics demonstrate the continued low level of carbon emission disclosure:

Table 1.
Percentage of Carbon Emission Disclosure Results

No	Researchers	Year	Min	Max	Mean	Standard Deviation
1	Ni Putu Eka Dewayani & Ni Made Dwi Ratnadi	2021	0%	77.8%	21.9%	14.6%
2	Nisrina Azmi Purnayudha & Paulus Theodorus Basuki Hadiprajitno	2022	5.6%	77.8%	23.3%	22.2%
4	Nadia Ajeng Saputri & Fidiana	2023	5.4%	47.7%	22.8%	13.7%
5	Raffa Tianisyah Mi'raz & Christina Dwi Astuti	2024	6%	94%	44%	23%

Source: From various sources

Table 1 shows that the level of carbon emission disclosure in Indonesia remains low, as evidenced by the minimum percentage of 0% in 2021. Companies have not widely disclosed information regarding the extent of their carbon emissions. Study Apriliana et al. (2019) And Nastiti & Hardiningsih (2022) stated that profitability has a positive effect on carbon emission disclosure. Meanwhile, research Novianti et al. (2020) And Putri et al. (2022) profitability has a negative effect on carbon emission disclosure. This is different from research Koeswandini & Kusumadewi (2019) And Mustar et al. (2020) profitability does not affect Carbon Emission Disclosure. Research conducted by Maulidiavitasari & Yanthi (2021) And Hamdiyani (2023) environmental performance has a positive effect on carbon emission disclosure. Meanwhile, research Angelina & Handoko (2023) Environmental performance has a negative effect on carbon emission disclosure. This is different from the research conducted by Dewayani & Ratnadi (2021) And Sekarini & Setiadi (2021) shows that environmental performance does not affect carbon emission disclosure.

Research conducted by Princess & Amin (2022) And Zahra & Aryati (2023) Company size has a positive effect on carbon emission disclosure. Meanwhile, research conducted by Melja et al. (2022) Company size has a negative and significant effect on carbon emission disclosure. This is different from research Wiratno & Muaziz (2020) And Gunawan & Aryati (2024) Company size does not affect carbon emission disclosure. Study Utari & Aprilina (2023) And (Susilo et al., 2022) Media exposure has a positive effect on carbon emission disclosure. Research conducted by Aryni et al. (2021) Media exposure has a negative effect on carbon emission disclosure. Meanwhile, research Laksani et al., (2021), Sandi et al. (2021) And (Utami & Achyani, 2023) media exposure has no effect on carbon emission disclosure. Based on the above explanation and also supported by the differences in the results of previous research related to the variables that influence carbon emission disclosure, the researcher took the research title **"The Effect of Profitability, Environmental Performance, Company Size, and Media Exposure on Carbon Emission Disclosure in Basic Industry and Chemical Companies Listed on the Indonesia Stock Exchange in 2021-2023."**

LITERATURE REVIEW

Theoretical basis

Legitimacy Theory

Legitimacy theory is a "social contract" between a company and the community in which it operates and uses its economic resources (Ghozali & Chairri, 2007). A company's fulfillment of this social contract with the community is demonstrated by reporting its social activities in its annual financial report. This theory states that organizations are part of society, and therefore must adhere to prevailing norms within that community. Legitimacy theory focuses on the interaction between companies and the community. Therefore, if a company adheres to these norms, it will appear more legitimate in the eyes of the public.

Stakeholder Theory

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The stakeholder theory was first expressed by Freeman in 1948, who said that a company is not a self-interested entity. (Rusdi & Helmayunita, 2023) Stakeholder theory states that a company is not an entity that operates solely for its own benefit but is obligated to share benefits with its stakeholders. Stakeholders are defined as individuals or groups that have influence over the achievement of an organization's goals. (Susilo et al., 2022) All stakeholders have the right to receive information about company activities that could influence their decision-making.

Carbon Emission Disclosure

According to Widiyanti & Meidawati (2023) Carbon emission disclosure is a disclosure made by a company to reveal its activities on the environment. This research can be measured using several items taken from research (Choi et al., 2013) and later developed by the Carbon Disclosure Project (CDP), which includes five indicators, including:

1. Climate change risks and opportunities (CC)
2. Greenhouse gas emissions (GHG)
3. Energy consumption (EC)
4. Greenhouse gas reduction and costs (Reduction and Cost/RC)
5. Accountability of Carbon Emissions (AEC).

Table 2. Carbon Emission Disclosure Index

Category	Item	Information
Climate Change: Risks and Opportunities (CC)	CC1	Assessment/description of risks (both specific and general rules/regulations) related to climate change and actions taken to manage these risks.
	CC2	Current (and future) assessment/description and financial, business and opportunity implications of climate change.
Greenhouse Gas (GHG) Emissions	GHG1	Description of the methodology used to calculate greenhouse gas emissions (e.g., GHG or ISO protocols).
	GHG2	The existence of external verification of GHG emission quantities by whom and on what basis.
	GHG3	Total greenhouse gas emissions (metric tons of CO ₂ produced).
	GHG4	Disclosure of scope 1 and 2, or 3 direct GHG emissions.
	GHG5	Disclosure of GHG emissions based on origin or source (e.g.: coal, electricity, etc.).
	GHG6	Disclosure of GHG emissions by facility or segment level.
	GHG7	Comparison of GHG emissions with previous years.
Energy Consumption (EC)	EC1	The amount of energy consumed (e.g. tera-joules or PETA-joules).
	EC2	Quantification of energy used from renewable resources.
	EC3	Disclosure by type, facility or segment.
Greenhouse Gas Reduction and Cost (RC)	RC1	Details of plans or strategies to reduce GHG emissions.
	RC2	Specifications of the target level and year of GHG emission reduction.
	RC3	The reductions in emissions and associated costs or savings achieved to date as a result of the reduction plan.
	RC4	Future emission costs are factored into capital expenditure planning.
Accountability of Carbon Emissions (AEC)	AEC1	Indication of which board committees (or other executive bodies) have responsibility for Actions related to climate change.
	AEC2	Description of the mechanism by which the board (or other executive body) reviews the company's progress on climate change.

Source: Bae Choi et al., (2013) (in Aryni et al., 2021)

The Relationship Between Profitability and Carbon Emission Disclosure

Profitability has a relationship with carbon emission disclosure, namely companies with good financial conditions are able to pay for the additional human or financial resources needed for voluntary reporting and better carbon emission disclosure to withstand external pressure.(Apriliana et al., 2019). Based on previous research conducted byNastiti & Hardiningsih (2022)that profitability has a positive influence on Carbon Emission Disclosure. Likewise, research conducted byWibowo et al. (2022)states that profitability has a positive effect on carbon emission disclosure.

The Relationship Between Environmental Performance and Carbon Emission Disclosure

Environmental performance is related to carbon emission disclosure, namely companies with poor environmental performance will withhold disclosure in an effort to avoid negative exposure, while companies with good environmental performance will try to differentiate themselves by voluntarily disclosing information about their environmental performance (Dawkins & Fraas, 2013).(Purnayudha & Hadiprajitno, 2022). Based on research conducted bySaptiwi (2019)AndMi'raz & Astuti (2024)found that environmental performance has a positive effect on carbon emission disclosure. Likewise, research conducted byPurnayudha & Hadiprajitno (2022)shows that environmental performance has a significant positive effect on carbon emission disclosure.

The Relationship Between Company Size and Carbon Emission Disclosure

Company size can be seen from the resources owned by a company.(Saptiwi, 2019)High operational activity indicates the size of a company, so the larger the company, the higher the activity. This situation places pressure and demands on companies related to activities directly related to the environment to gain legitimacy from stakeholders. Pressure and demands for carbon emission disclosure in large companies help companies gain legitimacy from stakeholders. Based on research conducted byMulya & Rohman (2020)that company size has a positive effect on carbon emission disclosure. This is also the case with research conducted byRosyid & Immawati (2022) Company size has a positive and significant effect on carbon emission disclosure.

The Relationship Between Media Exposure and Carbon Emission Disclosure

Broadly speaking, legitimacy theory examines the role media news plays in increasing public pressure and demands on companies. The media provides a broader public exposure to a company. A company's reputation will improve in the eyes of the public if it communicates environmental disclosures through the media. This suggests that companies have a moral obligation to disclose all aspects of their activities: financial, social, and environmental. Media exposure on environmental issues can influence stakeholder opinion about a company's commitment to the environment, particularly in disclosing carbon emissions. Based on research conducted bySaraswati & Yuniarta (2023)that media exposure has a positive effect on carbon emission disclosure. This is in line with research conducted bySaputri & Fidiana (2023)Media exposure has a positive effect on carbon emission disclosure

Conceptual Framework

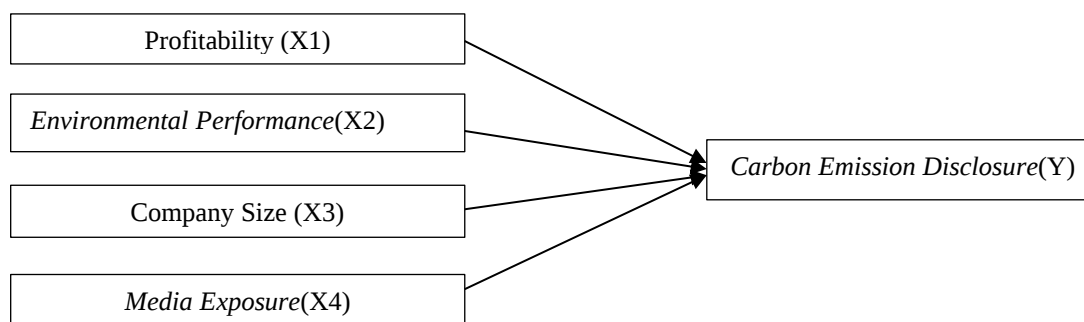


Figure 1.
Conceptual Framework

Hypothesis

Based on the description in the conceptual framework and supported by existing theories, the research hypothesis is as follows:

H1: Profitability has a positive effect on carbon emission disclosure

H2: Environmental Performance has a positive effect on carbon emission disclosure.

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H3: Company size has a positive effect on carbon emission disclosure.

H4: Media Exposure has a positive effect on carbon emission disclosure

RESEARCH METHODS

Research Objects and Locations

The objects of this study are profitability, environmental performance, company size, and media exposure to carbon emission disclosure. The research location is companies in the Basic Industry and Chemical Sector listed on the Indonesia Stock Exchange.

Population and Sample

The population in this study is 77 companies in the Basic Industry and Chemical Sector listed on the Indonesia Stock Exchange in 2021-2023.

According to Sugiyono (2019:127), a sample is a portion of the population and its characteristics. This study used purposive sampling, a technique for determining samples based on specific criteria. The criteria for selecting the sample are as follows:

1. Basic industry and chemical sector companies listed on the Indonesia Stock Exchange during 2021-2023.
2. Companies in the basic and chemical industry sectors whose annual reports or sustainability reports can be accessed consecutively during 2021-2023.
3. Companies in the basic and chemical industry sectors that implicitly or explicitly disclose carbon emissions (at least one carbon emission disclosure item).
4. Companies in the basic and chemical industry sectors that provide or disclose information regarding PROPER ratings in their annual reports or sustainability reports during 2021-2023.

Table 3.
Sample Selection Criteria Results

No	Criteria	Amount
1	Basic industry and chemical sector companies listed on the Indonesia Stock Exchange during 2021-2023.	77
2	Companies in the basic and chemical industry sectors whose annual reports or sustainability reports were not accessible consecutively during 2021-2023.	(8)
3	Companies in the basic and chemical industry sectors that implicitly or explicitly do not disclose carbon emissions (at least one carbon emission disclosure item).	(4)
4	Companies in the basic and chemical industry sectors that did not provide or disclose information regarding PROPER ratings in their annual reports or sustainability reports during 2021-2023.	(40)
Number of Samples		25
Number of Observations (25 x 3)		75

Source: idx.co.id, processed data (2024)

Based on the description above, the sample in this study was 25 companies with 75 data points for the observation period 2021-2023.

Data Types and Sources

This research uses a quantitative approach using panel data. The data sources used in this study were secondary data. The secondary data were obtained from annual reports or sustainability reports of companies in the Basic Industry and Chemical Sector listed on the Indonesia Stock Exchange for 2021-2023, as well as from the official websites of each company.

Data collection technique

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The data collection techniques used in this research are documentation and literature study techniques.

Operational Definition of Variables

Dependent Variable

According to Ramadhani & Astuti (2023), carbon emission disclosure is a manifestation of concern for the environment and society. Carbon emission disclosure is a form of corporate moral and social responsibility to the community to support efforts to reduce carbon emissions.(Firdausa et al., 2022). The CED calculation formula is as follows:

$$CED = \Sigma di / M$$

Source: (Melja et al., 2022)

Information:

CED = Carbon Emission Disclosure

Σdi = Total overall score of 1 obtained by the company

M = Maximum total items that can be disclosed (18 items)

Independent Variables

Profitability is defined as a measurement ratio to determine the ability of a corporate entity to generate profits.(Widiyani & Meidawati, 2023). The indicators used to measure profitability are based on research conducted by Melja et al. (2022)are as follows:

$$\text{Return On Asset} = \frac{\text{Laba Bersih}}{\text{Total Asset}}$$

Source: (Melja et al., 2022)

According to Nisa (2023)Environmental performance is how a company interacts with the environment in various ways, such as the use of natural resources, the effects of operational processes on the environment, the implications of products and services on the environment, and compliance with environmental regulations. The Ministry of Environment (KLH) has established an assessment of environmental performance using PROPER (Company Performance Assessment Program in Environmental Management). The assessment of environmental performance uses five color levels ranging from best to worst: gold, green, blue, red, and black. The assessment is classified based on PROPER levels 1-5. The following is a descriptive description of PROPER:

Table 4.
PROPER Rating

Mark	Color	Information
5	Gold	Very good
4	Green	Very good
3	Blue	Good
2	Red	Bad
1	Black	Very bad

Source:(Hamdiyani, 2023)

According to Wiratno & Muaziz (2020)Company size is a measure used to determine the size of a company. Company size is the natural logarithm (ln) of total assets. Company size can be calculated using the following formula:

$$\text{Ukuran Perusahaan} = \ln [\text{Total Aktiva}]$$

(Source: Melja et al., 2022)

According to Saraswati & Yuniarta (2023)Media exposure is the disclosure of a company's values or information through a medium. Media exposure is measured using a dummy variable, assigning a score of "1" to companies that provide information related to carbon emissions disclosure on their website. Conversely, companies that do not disclose carbon emissions are assigned a score of "0."

Table 5. Media Exposure Criteria

Criteria	Mark
Companies that disclose information related to carbon emissions through the company website	1
Companies that do not disclose information related to carbon emissions through the company website	0

Source:(Trisnawati, 2021)

Data Analysis Methods

Descriptive Statistical Analysis

Descriptive statistics are statistics used to analyze data by describing or depicting the collected data as it is without the intention of drawing general conclusions or generalizations (Sugiyono, 2019: 206). The data processing test in this study used E-Views 12.

Panel Data Regression Analysis

The panel data regression model in this study is:

$$Y_{ti} = a + b_1X_{1ti} + b_2X_{2ti} + b_3X_{3ti} + b_4X_{4ti} + e$$

Information:

Y	= Carbon Emission Disclosure
a	= constant
b ₁ b ₂ b ₃ b ₄	= Regression Coefficient
X ₁	= Profitability
X ₂	= Environmental Performance
X ₃	= Company Size
X ₄	= Media Exposure
t	= Time
i	= Company
e	= Error

Panel Data Regression Analysis Model Selection

Chow Test

The Chow test is usually used to choose between the Common Effect model and the Fixed Effect model, with the following decision-making conditions:

The hypothesis formed in the Chow Test is:

- If the Chi-square probability value > 0.05 then the Common Effect is selected.
- If the Chi-square probability value is < 0.05 then the Fixed Effect is selected.

Hausman test

The Hausman test is used to determine whether the Random Effect model or the Fixed Effect model is appropriate, with the following decision-making provisions:

H₀: Random effect model

H₁: Fixed effect model

If the probability of a random cross-section is <0.05, then H₀ is rejected, or the model used is a fixed effect model. Conversely, if the probability of a random cross-section is >0.05, then H₀ is accepted, or the model used is a random effect method.

Lagrange Multiplier Test

The Lagrange Multiplier (LM) test is used to determine whether the random effects model is better than the common effects method. The hypothesis formulated in the Lagrange Multiplier Test is as follows:

H₀: Random effect model

H₁: Common effect model

If the Breusch-Pagan cross-section is <0.05, then H₀ is rejected, or it can be said that the model used is a common effect model. If the Breusch-Pagan cross-section is >0.05, then H₀ is accepted, or it can be said that the model used is a random effect model.

Classical Assumption Test

Normality Test

The normality test aims to determine whether the dependent and independent variables in a regression model are normally distributed. This test can be performed by observing whether the probability value is $< \alpha 0.05$, indicating that the data is not normally distributed. If the probability value is $> \alpha 0.05$, the data is normally distributed.

Multicollinearity Test

Multicollinearity is the existence of a perfect linear relationship between the explanatory variables in a regression model. Multicollinearity in a regression model is measured by the correlation coefficient between each independent variable. If the coefficient is > 0.08 , multicollinearity is present in the regression model.

Autocorrelation Test

The autocorrelation test aims to determine whether the regression model has a correlation between the nuisance error in period t and the nuisance error in period $t-1$ (previous). The decision to conduct an autocorrelation test can be made by looking at the F-prob or Chi-square prob value. If the Chi-Square prob $< \alpha 0.05$, then autocorrelation symptoms occur.

Heteroscedasticity Test

This test can be carried out using the Glesjer test, namely by looking at the probability results, if it is > 0.05 then it is free from violations of the heteroscedasticity assumption, if it is more then to overcome the problem of heteroscedasticity in the FEM model, an estimation is carried out using white weighting.

Hypothesis Testing

Partial Test (t-Test)

This test was conducted using a significance level of 0.05. Acceptance or rejection of the hypothesis was carried out using the following criteria:

1. If the positive value is > 0.05 then the hypothesis is rejected (the registration coefficient is not significant).
2. If the positive value is < 0.05 then the hypothesis is accepted (the registration coefficient is significant).

Coefficient of Determination (R^2) Test

The coefficient of determination (R^2) value is between zero and one. A small R^2 value means the independent variables' ability to explain variation in the dependent variable is very limited. A value close to 1 means the independent variables provide almost all the information needed to predict the dependent variable.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Table 6. Descriptive Statistics

	X1	X2	X3	X4	Y
Mean	0.044412	3.346667	29.93071	0.360000	0.601481
Median	0.038376	3,000,000	29.37970	0.000000	0.555556
Maximum	0.225509	5,000,000	33.91113	1,000,000	0.888889
Minimum	-0.095299	3,000,000	27.48039	0.000000	0.388889
Std. Dev.	0.056986	0.625869	1.576517	0.483232	0.147092
Skewness	0.712321	1.594254	0.473767	0.583333	0.637069
Kurto sis	4.473417	4.300409	2.117790	1.340278	2.434249
Jarque-Bera	13.12676	37.05514	5.237854	12.86184	6.073452
Probability	0.001411	0.000000	0.072881	0.001611	0.047992
Sum	3.330899	251,0000	2244.803	27,00000	45.11111
Sum Sq. Dev	0.240310	28.98667	183.9201	17.28000	1.601070
Observations	75	75	75	75	75

Source: EViews 12 Output (2024)

Based on the descriptive statistics table, the dependent variable, namely carbon emission disclosure (CED), shows an average value of 0.601481 or 60.15% with a standard deviation value of 0.147092 or 14.71%. The maximum value of 0.888889 or 88.89% was obtained from PT Barito Pacific Tbk (BRPT) and PT Gunung Raja Paksi Tbk (GGRP) in 2021 to 2023, PT Chandra Asri Pacific Tbk (TPIA) in 2022 and 2023. The minimum value of 0.388889 or 38.89% was obtained from PT Malindo Feedmill Tbk in 2021 and 2022, PT Sreeya Sewu Indonesia Tbk in 2021-2023 and PT Suparma Tbk in 2021.

Profitability (X1) as the first independent variable has an average value of 0.044412 with a standard deviation of 0.056986. The maximum value is 0.225509 and the minimum value is -0.095299. Environmental performance (X2) has an average value of 3.346667 with a standard deviation of 0.625869. The maximum value is 5.000000 and the minimum value is 3.000000. Company size (X3) as the third independent variable has an average value of 29.93071 with a standard deviation of 1.576517. The maximum value is 33.91113 and the minimum value is 27.48039. Media exposure (X4) as the fourth independent variable has an average value of 0.360000 with a standard deviation of 0.483232. The maximum value is 1.000000 and the minimum value is 0.000000.

Determination of Panel Data Estimation

Chow Test

The Chow test was conducted to test which common effect and fixed effect models were most appropriate to use (Rohmana, 2010:236).

Table 7. Chow Test Results

Effect Test	Statistics	df	Prob
Cross-section F	42.679933	(24.46)	0.0000
Cross-section Chi-Square	236.030253	24	0.0000

Source: EViews 12 Output (2024)

Based on the table above, it can be seen that the cross-section chi-square probability value is 0.0000. This result indicates that the cross-section chi-square probability value is smaller than 0.05 ($0.0000 < 0.05$), which means that the model selected in the chow test is the Fixed Effect Model (FEM).

Hausman test

The Hausman test was carried out to test which model was chosen between the fixed effect and random effect models.

Table 8. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob
Random cross-section	8.684734	4	0.0695

Source: EViews 12 Output (2024)

Based on the table above, it can be seen that the random cross-section probability value is 0.0695. This result indicates that the random cross-section probability value is greater than 0.05 ($0.0695 > 0.05$), which means that the model selected in the Hausman test is the Random Effect Model (REM), so that the estimation determination must be continued with the Lagrange Multiplier (LM) test.

Lagrange Multiplier Test

The Lagrange multiplier (LM) test is used to determine the best and most appropriate approach between the common effect and random effect models.

Table 9. Lagrange Multiplier Test Results

	Hypothesis Test		
	Cross-section	Time	Both
Breusch-Pagan	54.39918 (0.0000)	1.512309 (0.2188)	55.91149 (0.0000)
Honda	7.375580 (0.0000)	-1.229760 (0.8906)	4.345751 (0.0000)
King Wu	7.375580 (0.0000)	-1.229760 (0.8906)	0.864103 (0.1938)
Standardized Honda	8.102812 (0.0000)	-1.005163 (0.8426)	1.166273 (0.1218)
Standardized King Wu	8.102812 (0.0000)	-1.005163 (0.8426)	-1.252831 (0.8949)
Gourieroux, et al.	-	-	54.39918 (0.0000)

Source: EViews 12 Output (2024)

Based on the table above, it can be seen that the Breusch-pagan cross-section value is 0.0000. This result indicates that the Breusch-pagan cross-section value is smaller than 0.05 ($0.0000 < 0.05$), which means that the model selected in this test is the Random Effect Model (REM).

Panel Data Regression Model Results

Table 10. Results of Panel Data Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.004393	0.315607	0.013920	0.9889
X1	0.084226	0.133091	0.632847	0.5289
X2	0.048559	0.016124	3.011583	0.0036
X3	0.014452	0.010628	1.359755	0.1783
X4	-0.004747	0.016620	-0.285656	0.7760

Source: EViews 12 Output (2024)

Based on the table above, the results of the panel data regression test calculations obtained the following equation.

$$Y = 0.004393 + 0.084226X1 + 0.048559X2 + 0.014452X3 - 0.004747X4$$

From the equation above, it can be explained as follows:

1. The constant coefficient value obtained was 0.004393 with a significance value of 0.9889. This means that assuming the Independent variable is constant, the Carbon Emission Disclosure (CED) value increased by 0.004393 units or 0.44%.
2. The coefficient of the Profitability variable (X1) is 0.084226. If the values of other variables are constant and the profitability variable increases by 1%, the carbon emission disclosure variable will increase by 0.084226 or 8.42%. Conversely, if the values of other variables are constant and the profitability variable decreases by 1%, the carbon emission disclosure variable will decrease by 0.084226 or 8.42%.
3. The coefficient of the environmental performance variable (X2) is 0.048559. If the values of other variables are constant and the environmental performance variable increases by 1%, the Carbon Emission Disclosure variable will increase by 0.048559 or 4.86%. Vice versa.
4. The coefficient of the Company Size variable (X3) is 0.014452. If the values of the other variables are constant and the Company Size variable increases by 1%, the Carbon Emission Disclosure variable will increase by 0.014452 or 1.45%. Vice versa.

5. The coefficient of the Media Exposure variable (X4) is -0.004747, if the values of other variables are constant and the Media Exposure variable increases by 1%, the Carbon Emission Disclosure variable will decrease by 0.004747 or 0.47%.

Classical Assumption Test

This study does not use classical assumption tests. This is because the study uses panel data and the selected model is a random effects model (REM). According to Gujarati (2010), in theory, the method for estimating panel random effects models uses the generalized least squares (GLS) method. One advantage of the GLS method is that it does not use classical assumption tests, as it is assumed that GLS can address heteroscedasticity and autocorrelation. Therefore, if the regression model uses a random effects model, classical assumption tests are not necessary.

Hypothesis Testing

Partial Test Results (t-Test)

Based on table 10, the influence of each variable is as follows:

The profitability variable (X1) obtained a t-statistic value of 0.632847 with a probability value of 0.5289 (> 0.05), so it can be said that H1 is rejected. This means that profitability (X1) has no effect on carbon emission disclosure. The environmental performance variable (X2) obtained a t-statistic value of 3.011583 with a probability value of 0.0036 (< 0.05) so it can be said that H2 is accepted. This means that environmental performance (X2) has a significant positive effect on carbon emission disclosure. The company size variable (X3) obtained a t-statistic value of 1.359755 with a probability value of 0.1783 (> 0.05), so it can be said that H3 is rejected. This means that company size (X3) does not affect carbon emission disclosure. The media exposure variable (X4) obtained a t-statistic value of -0.285656 with a probability value of 0.7760 (> 0.05), so it can be said that H4 is rejected. This means that media exposure (X4) has no effect on carbon emission disclosure.

Coefficient of Determination (R^2) Test

Table 11. Results of the Determination Coefficient

R-Squared	0.150298	Mean dependent variable	0.087694
Adjusted R-squared	0.101743	SD dependent var	0.032537
SE of regression	0.030837	Sum squared residual	0.066565
F-Statistic	3.095453	Durbin-Watson stat	1.299026
Prob (F-Statistic)	0.020938		

Source: EViews 12 (2024)

Based on the results of the table above, it shows that the Adjusted R-squared value is 0.101743 when presented, which is 10.17%. This means that the variables Profitability (X1), Environmental Performance (X2), Company Size (X3), and Media Exposure (X4) influence the CED variable (Y) by 10.17% while the remaining 89.83% is influenced by other variables not examined in this study.

Discussion

The Effect of Profitability on Carbon Emission Disclosure

Based on the test results, the t-statistic for profitability is 0.632847, with a probability value of 0.5289, greater than 0.05. Based on these results, H1 is rejected. This result indicates that the profitability variable has no significant effect on carbon emission disclosure in Basic Industry and Chemical companies listed on the Indonesia Stock Exchange in 2021-2023. This lack of influence indicates that even though companies have high profitability, they cannot be considered transparent in reporting their carbon emissions. Likewise, even if a company experiences losses, the company will not be transparent in disclosing its carbon emissions. This finding differs from previous research, which stated that companies will benefit if they tend to care about environmental issues, which allows them to disclose information related to carbon emissions. The inability of profitability to influence carbon emission disclosure can be explained by legitimacy and stakeholder theory. Legitimacy theory states that organizations are part of society and therefore must adhere to prevailing norms, one of which is through environmental disclosures. If companies adhere to these norms, they will gain or maintain legitimacy from the public and stakeholders. However, in this study, profitability was not the primary contributing factor. This occurs because companies with high profits already feel

they have a strong reputation and legitimacy in the eyes of stakeholders, so they do not feel the need to increase transparency in disclosing carbon emissions because they are considered to provide no significant added value to the company. Furthermore, disclosing carbon emissions requires a complex and expensive process, so for companies with high profitability, the decision to allocate resources to carbon emission disclosure is considered disproportionate to the benefits obtained. The results of this study support the results of previous research conducted by Mustar et al (2020), Firdaus et al (2022), Melja et al (2022) which states that profitability does not affect carbon emission disclosure.

The Influence of Environmental Performance on Carbon Emission Disclosure

Based on the test results, the t-statistic for environmental performance was 3.011583, with a probability value of 0.0036, which is less than 0.05. Based on these results, H2 is accepted. This means that environmental performance has a significant positive effect on carbon emission disclosure in Basic Industry and Chemical companies listed on the Indonesia Stock Exchange in 2021-2023. This influence indicates that companies that care about and are responsible for the environment will improve their environmental performance and disclose information related to the environment, thereby gaining legitimacy from the public or stakeholders. This is in line with the legitimacy theory, which states that companies with good environmental performance tend to be more open in disclosing information related to carbon emissions. Companies that participate in PROPER further improve their image and reputation in the eyes of the public and stakeholders. Through PROPER, the government provides transparent assessments of companies' environmental performance, thus encouraging companies to be more proactive in improving and disclosing their environmental performance, including carbon emissions. Participation in PROPER motivates companies to maintain and improve their ratings, thus companies tend to be more transparent in disclosing environmental information. Thus, companies that participate in PROPER not only demonstrate their commitment to higher environmental standards but also enhance their reputation in the eyes of the public through more comprehensive and accountable disclosure of carbon emissions. The results of this study support the results of previous research conducted by Purnayudha & Hadiprajitno (2022), Hamdiyani (2023), Mi'raz & Astuti (2024) which states that environmental performance has a positive effect on carbon emission disclosure.

The Effect of Company Size on Carbon Emission Disclosure

Based on the test results, the t-statistic for company size is 1.359755, with a probability value of 0.1783, greater than 0.05. Based on these results, H3 is rejected. This means that company size does not significantly influence carbon emission disclosure in Basic Industry and Chemical companies listed on the Indonesia Stock Exchange in 2021-2023. The lack of influence indicates that company size, as measured by total assets, is not a determining factor in a company's decision to disclose its carbon emissions. Larger companies typically have more resources and are likely to attract more public attention. This does not necessarily encourage companies to be transparent in disclosing their carbon emissions. Presidential Regulation No. 61 of 2011 also does not stipulate that only large companies are required to disclose carbon emissions. Therefore, in theory, companies with large assets have a greater capacity to contribute to environmental reporting. However, in practice, company size does not directly determine the level of carbon emissions disclosure. The results of this study support the results of previous research conducted by Wiratno & Muaziz (2020), Utari & Aprilina (2023), Gunawan & Aryati (2024) which states that company size does not affect carbon emission disclosure.

The Influence of Media Exposure on Carbon Emission Disclosure

Based on the test results, the t-statistic for media exposure was -0.285656, with a probability value of 0.7760, greater than 0.05. Based on these results, H4 was rejected. This means that media exposure does not significantly influence carbon emission disclosure in Basic Industry and Chemical companies listed on the Indonesia Stock Exchange in 2021-2023. This lack of influence indicates that media exposure isn't always a motivator for companies to disclose carbon emissions information on their websites. Companies will ignore media exposure if the information disclosed on their websites could damage their reputations broadly. However, companies are considered more transparent and stakeholder-oriented if they disclose carbon emissions information online on their websites. However, this does not necessarily translate into higher overall carbon emissions disclosure intensity. Companies disclosing carbon emissions information through their websites is often influenced by broader corporate communications strategies and as a minimum form of compliance, rather than solely driven by the need for environmental transparency. Therefore, while a company might score 1 on the media exposure indicator due to website disclosure, the quality and depth of the information presented may still be limited. Thus, while media exposure through a

company's website reflects a company's willingness to share information, it does not necessarily correlate with a more comprehensive level of carbon emissions disclosure. The results of this study support the results of previous research conducted by Laksani et al (2021), Sandi et al (2021), Utami & Achyani (2023) which states that media exposure has no effect on carbon emission disclosure

CONCLUSION AND SUGGESTIONS

Conclusion

Based on the research results and discussions conducted regarding the influence of Profitability, Environmental Performance, Company Size, and Media Exposure on Carbon Emission Disclosure in Basic Industry and Chemical Sector companies listed on the Indonesia Stock Exchange in 2021-2023, the following conclusions can be drawn:

1. Profitability had no effect on carbon emission disclosure in basic industry and chemical companies listed on the Indonesia Stock Exchange between 2021 and 2023. This means that high or low company profits do not impact transparency in disclosing carbon emissions, as the process requires complex disclosure and incurs significant costs.
2. Environmental performance has a significant positive effect on carbon emission disclosure in basic industry and chemical companies listed on the Indonesia Stock Exchange in 2021-2023.
3. Company size had no effect on carbon emission disclosure in basic industry and chemical companies listed on the Indonesia Stock Exchange between 2021 and 2023. This means that company size is not a determinant of carbon emission disclosure decisions. Companies tend to focus more on risk management strategies, which they consider more pressing, and carbon emission disclosure is not commensurate with the costs involved.
4. Media exposure had no effect on carbon emission disclosure in basic industry and chemical companies listed on the Indonesia Stock Exchange between 2021 and 2023. This means that media exposure does not always motivate companies to disclose carbon emissions, as companies' willingness to share information does not always correlate with more comprehensive carbon emission disclosure.

Suggestion

1. It is recommended that further research increase the observation period and research sample to obtain a larger number of observations so that the research results will be more accurate.
2. It is recommended that further research develop other variables that can influence carbon emission disclosure, such as family ownership, good corporate governance, industry type, and firm age.

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