The Influence Of Profitability, Company Size, Media Exposure, And Leverage On Carbon Emissions Disclosure

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ABSTRACT

The purpose of the study is to ascertain the influence of profitability, company size, media exposure and leverage on carbon emission disclosure. Previous research, carbon emission disclosures have not been consistent, so it is worth testing again. The novelty of the study, added the factor of media exposure. Measurement of carbon emission disclosure using information disclosure index based on CDP. The research method uses multiple linear regression. Data was collected from 37 companies in the agriculture and mining sectors in the 2019-2022 annual report. In this case, Return on Assets (ROA), Total Assets Value and high media exposure affect the disclosure of carbon emissions. Meanwhile, a high Debt to Assets Ratio (DAR) has no influence on carbon emission disclosure. The findings show agricultural and mining companies that disclose carbon emissions are affected by high profitability, large company size, and high media exposure. Companies that use leverage, meanwhile, cannot influence carbon emissions disclosure.

INTRODUCTION

Corporate environmental and social responsibility disclosures include information on carbon emissions. Carbon emission disclosures are part of additional reporting aimed at reducing carbon emissions and responding to public pressure to reduce environmental damage caused by the company's operations (Yan et al., 2022).

The government encourages companies as economic actors to reduce their carbon emissions, through Presidential Decree Number 61 and 71 of 2011 related to efforts to reduce greenhouse gas emissions by making voluntary disclosures.

Companies that voluntarily disclose carbon emissions show that they are in good shape. The condition of a company can be seen from its profitability, if a company has high profitability, then the company has good financial performance and will care more about the surrounding environment. In addition, large companies that are developing will disclose more environmental information, because the activities of large companies can have a large impact on environmental pollution. Furthermore, if the company is willing to disclose carbon emissions, it means that the company's leverage ratio is in good condition and the debt level is low. According to signaling theory, companies that disclose emission reductions have positive signals to investors in the form of information about the company's environmental performance.

Some factors that can affect carbon emissions disclosure include profitability, company size and leverage. Previous research results have shown that disclosure of carbon emissions can be influenced by profitability as measured using Return on Assets (Bae Choi et al., 2013), because companies have more financial resources to allocate costs to environmental controls, such as investments in greener technologies or carbon emission reduction programs (Ismail et al., 2018; Kılıç & Kuzey, 2019a). On the contrary, according to (Saraswati et al., 2021), Carbon emissions disclosure is affected by profitability as measured using Return on Equity, as companies with more capital can afford the costs associated with identifying, collecting, and reporting information required for carbon emissions disclosure (Baboukardos & Gaia, 2021; Kılıç & Kuzey, 2019b).

In addition, the big factor of a company is seen from total assets. According to (Chithambo & Tauringana, 2014), disclosure of carbon emissions can be affected by total assets measured using total assets value. Companies with large total assets are better able to disclose carbon emissions in detail and transparently (Aguilar-Fernández & Otegi-Olaso, 2018; Liu et al., 2023). On the contrary, according to (Badulescu et al., 2018), disclosure of carbon emissions can be affected by total assets measured using total sales value, as large companies face tighter scrutiny and demands to reduce carbon emissions (Prado-Lorenzo et al., 2009).

Next, factor in the level of solvency as measured by the leverage ratio. Previous research has shown that carbon emissions disclosure can be influenced by leverage using the Debt to Assets Ratio measure (Hapsari & Prasetyo, 2020). A higher Debt to Assets Ratio, indicating that debt is used to fund most of the company's assets. High debt level ratios will increase pressure from creditors to become more transparent in information disclosure (Desai, 2022). As a result, increased leverage can help improve a company's carbon emissions disclosure capabilities (Tang & Luo, n.d.). On the contrary, according to (Liu et al., 2023), Carbon emissions disclosure is influenced by leverage using the Debt to Equity Ratio measure, because high debt level ratios are more vulnerable to regulatory pressure, so companies have a great incentive to disclose carbon emissions to stakeholders (Akbaş & Canikli, 2019).

Previous research related to carbon emission disclosure there was a gap in research methods, so this study relinked Return on Assets with profitability. In addition, company size and leverage will also be focused on total assets and Debt to Assets Ratio. Based on previous research, the use of different measurements resulted in inconsistent results in explaining the measurement of each variable, so further research is needed.

The novelty of this study is that it adds a variable of media exposure. The addition of variables from media exposure can increase disclosure of carbon emissions by companies. The advancement of the internet and digital economy, surveillance and pressure, make companies more dynamic and complex (Shao & He, 2022). The development of social media and mobile internet makes it easier for people to receive information to monitor company activities.

Social media is an online media with an easy-to-access platform, where content in the form of photos, videos and writing can be fully controlled by stakeholders, making it easier to communicate with each other (Lyon & Montgomery, 2013). In addition, social media also accelerates the spread and reduces information asymmetry (Blankespoor et al., 2013), so that with social media, the public can find out all the issues that are discussed, including transparency in disclosing carbon emissions.

According to the results of the study (Nasih et al., 2019; Ulupui et al., 2020), media exposure and oversight of corporate policies can improve social and environmental performance. Thus, media exposure can make it easier for stakeholders to know environmental conditions and performance related to carbon emissions produced. The more actively the media monitors environmental activity, the greater the company's incentive to disclose carbon emissions.

The research focuses on companies engaged in the agriculture and mining sectors listed between 2019 and 2022 on the Indonesia Stock Exchange (IDX). The selection of companies in

the agricultural and mining sectors is because compared to companies in other sectors, these companies have higher levels of carbon emissions. The purpose of this study is to determine how much information is disclosed by companies in the agricultural and mining sectors about carbon emissions, taking into account profitability, company size, media exposure and leverage.

LITERATURE REVIEW
Signaling Theory

Signaling theory defines that information expressed, serves as a signal of an organization's ability to the person receiving the information to make decisions (Spence, 1973). Signaling theory suggests that companies that provide signals to investors in the form of relevant and useful information, will have an impact on the company's future prospects (Usman & Afandy, 2022). In this study, signal theory explains that carbon emission information disclosed or published by companies is useful to investors (Cotter et al., 2019). Carbon emission disclosures are information about the company's impact on global warming and decline. The company will receive positive signals from investors, if information about carbon emissions is disclosed, in the form of a decision to invest in its business. Thus, these signals can motivate companies to disclose carbon emissions, as an effort to show that the company is performing well.

Carbon Emissions Disclosure

Carbon emission disclosure is a report that provides information about a company's strategies and programs to reduce carbon emissions (Liu et al., 2023). A number of programs, such as the Carbon Disclosure Project have been established to collect data on carbon emissions (Gonenc & Krasnikova, 2022). CDP, is a non-profit organization that focuses on limiting carbon emissions and corporate attitudes towards climate change. In this study, the assessment of carbon emissions uses a disclosure index made by (Bae Choi et al., 2013) and is based on the structure of the identifying component in the information request form created by CDP. There are 18 assessment points divided into 5 categories, namely Climate Change Risks and Opportunity (CC), Greenhouse Gas Emissions Calculation (GHG), Accounting for Energy Use (EU), Reduction and Costs (RC), and Carbon Emission Accountability (AEC).

Profitability

Profitability is a ratio used to calculate how much profit a company generates (Brigham & Houston, 2015). Ratios to measure profitability in this study, using the ratio of net income to total assets (ROA). ROA is used to analyze how efficiently a company manages its assets in generating profits.

Company Size

The size of the company indicates how large an enterprise is, which is determined by several factors (Brigham & Houston, 2015). These factors can include the value of assets as a whole, total sales, market capabilities, and the number of workers. To determine the size of the enterprise in this study, the calculation of the total value of assets is used. Companies whose calculation of total assets value is higher, show good growth and expansion to increase the value of the company.

Media Exposure

Media exposure can be interpreted as the way a person understands or interprets an issue expressed through mass media. In the context of environmental issues, such as the disclosure of carbon emissions, media exposure plays an important role in shaping public perception, as it relates to environmental impact, corporate responsibility, or proposed solutions. Information provided through media exposure will influence public opinion about the

importance of disclosing carbon emissions and increase the role of environmental issues in providing information related to company activities.

Leverage

Leverage is a capital loan or debt used by a company to make a profit (Kieso et al., 2017). Meanwhile, the leverage ratio is a ratio to measure the level of the company's ability to pay off its debts or obligations. The ratio of debt to total assets (DAR), used in this study as the leverage ratio. DAR is used to analyze how much debt is in financing a company's business activities.

Hypothesis Development

Based on previous research, it has been found that factos affect the disclosure of carbon emissions. These factors are divided into profitability, company size, media exposure and leverage.

The first factor, the level of profitability. Companies with high profitability, can improve corporate decision-making in dealing with the environment, because they have more financial resources to allocate costs on environmental control (Ismail et al., 2018). Signaling theory explains that companies that increase profitability will increase disclosure of carbon emissions. Results of research conducted (Kılıç & Kuzey, 2019a; Luo et al., 2013; Saraswati et al., 2021), Showing that companies with high profitability can motivate to reduce the amount of emissions generated from operational activities, as this makes it easier for companies to withstand external pressure and file voluntary disclosure reports. In connection with the above statement, the research hypothesis is formulated as follows:

H1: Profitability has a positive influence on carbon emission disclosure in agricultural and mining sector companies on the IDX

The second factor, the size of the company. The larger the company, the better it is at addressing environmental impacts, because it has a lot of resources, namely the total value of assets, profits, market capabilities, and the number of workers (Herlina et al., 2021). Results of research conducted (Desai, 2022; Giannarakis et al., 2017; Kılıç & Kuzey, 2019a; Park et al., 2023), Companies with more assets will be better able to measure and report greenhouse gas emissions, as they can provide more transparent and reliable information on carbon emissions. According to signaling theory, large companies that disclose more environmental information, such as carbon emission disclosures, show concern for the environment, because the information is a positive signal for investors. In connection with the above statement, the research hypothesis is formulated as follows:

H2: Company size positively influence the disclosure of carbon emissions in agricultural and mining companies on the IDX

The third factor, is media exposure. High media exposure can increase reporting of carbon emission reductions. Media exposure is more effective in improving company performance and being environmentally responsible. High media exposure, increasing public pressure and investor attention to environmental and social issues (Dawkins & Fraas, 2011). As a result, more and more companies are actively providing carbon emission data on websites, in the form of annual reports and sustainability reports. Research conducted (Abdullah et al., 2020; Tavakolifar et al., 2021; Ulupui et al., 2020), states that increased disclosure of corporate carbon emissions, occurs when high media exposure addresses excessive carbon emissions. According to signaling theory, when a company increases the disclosure of reduced carbon emissions through media exposure, investors receive good signals in the form of information about the company's environmental performance. In connection with the above statement, the research hypothesis is formulated as follows:

H3: Media exposure has a positive influence on carbon emissions in agricultural and mining companies on the IDX

The fourth factor is leverage. High leverage ratio increases stakeholder pressure to be more transparent (Usman, 2020), including carbon emissions disclosure. Companies with high

leverage ratios create uncertainty and risk for investors, so to overcome these problems, companies can provide information about carbon emissions. The statement is in line with (Hapsari & Prasetyo, 2020; Tang & Luo, n.d.), That said, a high leverage ratio helps improve a company's carbon emissions disclosure capabilities. According to signaling theory, companies with high leverage ratios and disclosing carbon emissions, can increase investor confidence and show good social responsibility. In connection with the above statement, the research hypothesis is formulated as follows:

H4: Leverage has a positive influence on carbon emission disclosure in agricultural and mining companies listed on the IDX

METHODS
Types of Research
Quantitative methods were used in this study. Quantitative methods are research techniques with numberical data, which can be processed and analyzed using statistical calculations. Use of this method to analyze the influence of profitability, company size, media exposure and leverage on carbon emission disclosure.

Population and Research Sample
The population and research sample are companies in the agricultural and mining sectors listed on the Indonesia Stock Exchange (IDX) from 2019 to 2022. Purposive sampling is used in the sample selection process, involving the selection of companies that are in accordance with the requirements and objectives of the study, using the following criteria:
1. Companies engaged in the agricultural and mining sectors on the Indonesia Stock Exchange from 2019 to 2022.
2. Companies in the agriculture and mining sectors that publish annual reports consistently from 2019 to 2022.
3. Companies engaged in the agricultural and mining sectors, whose annual reports for the period 2019-2022 can be accessed through their respective companies' websites or IDX's official website.

Data Collection Methods
Secondary data sources from mining and agricultural companies listed on the Indonesia Stock Exchange were used in this study. The company's annual report serves as a source of data. The years 2019 to 2022 are the start of the research period. Data is taken from the website of each mining and agricultural company as well as the website of the Indonesia Stock Exchange www.idx.co.id.

Operational Definitions and Variable Definitions
Disclosure of carbon emissions is the dependent variable of this study, while profitability, company size, media exposure, and leverage are independent variables.

1. Carbon Emissions Disclosure
To measure a company's level of carbon emission disclosure, the study used a developed disclosure index (Bae Choi et al., 2013). The determination of transparency index metrics is shown in Table.1, and is done as follows:
1) The scoring of each indicator is carried out, where each indicator disclosed in the annual report is given a value of 1.
2) Calculation of carbon emission disclosure rate using formula:

$$\frac{\text{the number of items disclosed by the company}}{\text{total items (18)}}$$

Table.1 Carbon Emissions Disclosure Assessment Index

Category	Greenhouse Gas Emissions Disclosure Index
1. Climate Change Risks and Opportunity (CC)	CC1 – Description of climate change risks and mitigations. CC2 – An explanation of the prospects, financial impacts, and commercial impacts of climate change.
2. GHG Emission Calculation	GHG 1 – Explanation of the use of methods used by companies to calculate greenhouse gas emissions. GHG 2 – An explanation of how total greenhouse gas emissions are externally verified. GHG 3 – Information on the quantity of greenhouse gas emissions produced. GHG 4 – Direct disclosure based on GHG1, GHG 2, and GHG 3. GHG 5 – Greenhouse gas emissions disclosed by company by source. GHG 6 – Greenhouse gas emissions disclosed by the company based on its business units. GHG 7 – Comparing the amount of greenhouse gas emissions produced by the company this year and the previous year.
3. Accounting for Energy Use (EU)	EU 1 – Disclosure of the overall amount of energy used. EU 2 – Disclosure of the amount of renewable energy use for the company's operational activities. EU 3 – Description of the types of energy and facilities for their use.
4. Reductions and Costs GHG (RC)	RC 1 – Explanation of the company's strategy and plan to reduce greenhouse gas emissions. RC 2 – Explanation of greenhouse gas emission reduction targets by companies. RC 3 – Description of planned savings, reductions and costs incurred for greenhouse gas emissions up to the reporting date. RC 4 – Disclosure of costs associated with greenhouse gas emissions for the coming year that are part of the business's capital expenditure budget.
5. Carbon Emissions Accountability (AEC)	AEC 1 – Disclosure regarding the director responsible for climate change policy. AEC 2 – Disclosure of explanations submitted by the board of directors on the results of climate change mitigation.

2. Profitability

ROA is used to measure the probability ratio of the study, with the formula:

$$\text{Return on Assets} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

3. Company Size

The total value of assets is used to determine the size of the research company, with the following formula:

$$\text{Company Size} = \text{Ln Total Assets}$$

4. Media Exposure

To measure media exposure, dummy variables were used in this study. Number 1 will be given to companies that publish carbon emissions, in their annual reports, while number 0 will be given to companies that do not report carbon emissions in their annual reports.

5. Leverage

To measure the leverage ratio, this research uses DAR, with the following formula:

$$\text{Debt to Assets} = \frac{\text{Debt}}{\text{Total Assets}}$$

6. Data Analysis Methods

Multiple linear regression tests are used for data analysis, assisted by the use of eviews with the following equations:

$$PEK = \alpha + \beta1ROA + \beta2LTA + \beta3EM + \beta4LV + e$$

Information:

PEK   : Carbon Emissions Disclosure
α : Constant
$\beta1$- $\beta4$: Regression Coefficient
ROA   : Return on Assets
LTA   : LN Total Assets
EM   : Media Exposure
LEV   : Leverage
E   : Errors

Hypothesis testing in this study can be done in several stages:
a. Model Test
    1. Chow Test
        Chow test decision making is based on probability cross-secction values, which uses CEM when F > 0.05 while using FEM when F < 0.05.
    2. Hausman Test
        Hausman test decision making is based on the value of probability cross-secction random, which uses REM if probability cross-secction random > 0.05 while using FEM if probability cross-secction random < 0.05.
    3. Lagrange Multiplier (LM) Test
        The decision making of the Lagrange Multiplier test is seen from the Chi-Square distribution, which uses CEM when LM > Chi-Square while using REM if LM < Chi-Square.
b. Classical Assumption Test
    1. Normality Test
        The application of this test determines whether the data is normally distributed or not. If Sig > 0.05 then the data is considered normal, and vice versa.
    2. Autocorrelation Test
        This test refers to the Durbin-Watson test, where the data is said to be:
        1) There is no positive autocorrelation, if the value $0 \leq dW \leq dL$ atau $dL \leq dW \leq dU$.
        2) No negative autocorrelation occurs, if the value of $4\text{-}dL \leq dW \leq 4$ or $4\text{-}dU \leq dW \leq 4\text{-}dL$.
        3) Autocorrelation does not occur, if $dU \leq dW \leq 4\text{-}dU$.
    3. Multicollinearity Test
        This test is used to determine whether there is multicollinearity in the regression model. The model is said to have no multicollinearity if the correlation value is < 0.98.
    4. Heteroscedaticity Test
        A heteroscedasticity test is performed to determine the difference in variance from residual between two observations. The model is said not to occur heteroskedaticity if the value of Sig > 0.05, while if Sig < 0.05 then heteroskedaticity occurs.

c. Test the hypothesis
   1. F Test
      This test was carried out to find out whether the regression model in this study was fit or not. A model is considered fit if the Sig < 0,05 while if the Sig > 0,05 the model is considered unfit.
   2. Coefficient of Determination (R²) Test
      The application of this test is to see how well the independent variable can explain the dependent variable, with a range of coefficient values between 0 and 1. The independent variable can give a broad explanation of the dependent variable when its coefficient value approaches 1.
   3. t Test
      A t-test is applied to see the extent to which the independent variable affects the dependent variable. The independent variable is said to have an influence if it has a Significant t value of < 0.05.

RESULTS
Descriptive Statistics
Table.2 The Results Descriptive Statistics Test

	N	PEK	ROA	LTA	EM	LV
Mean	148	0,136554	0,038716	21,50311	0,378378	0,591216
Maximum	148	0,500000	1,100000	29,24000	1,000000	5,590000
Minimum	148	0,000000	-1,120000	12,80000	0,000000	0,000000
Std. Dev.	148	0,105822	0,215370	5,055319	0,486629	0,538539

Based on Table.2 in descriptive statistical analysis, to describe the data of all research variables using minimum, maximum, mean, and standard deviation numbers. Variables used include carbon emission disclosure variables, profitability, company size, media exposure and leverage.

Chow Test
Table.3 The Results Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1,060799	(36,107)	0,3967
Cross-section Chi-square	45,170462	36	0,1406

Based on Table.3 the probability value of cross-section F is 0,3967, which means the value of probability cross-section F > 0.05, then the test model selected from the results of the chow test is Fixed Effects Model.

Hausman Test
Table.4 The Results HausmanTest

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4,830332	4	0,3052

Based on Table.4 the results of the hausman test show a probability cross-section random value of 0,3052, which means the value of probability random cross-section > 0.05, then the results of the hausman test show that the selected model is a Random Effects Type. So, to find out the test model selected in this study, it will be continued on the LM test.
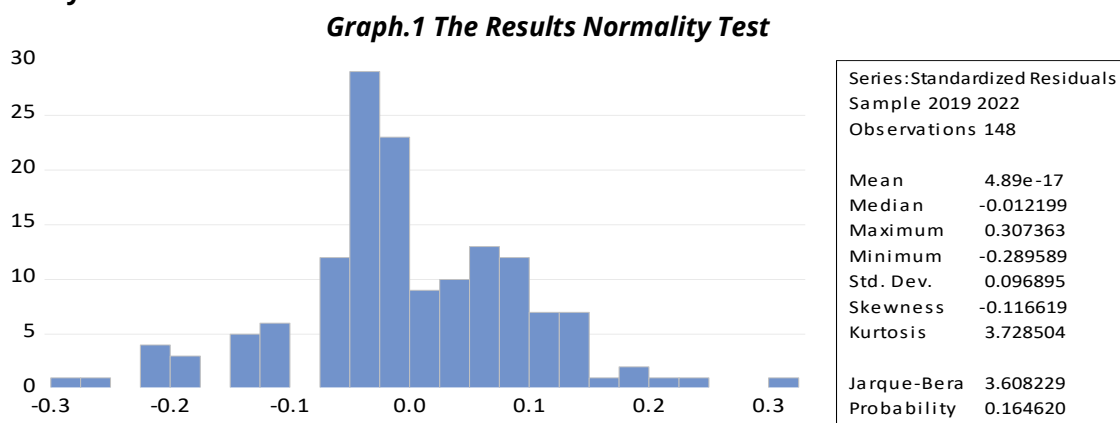
Lagrange Multiplier (LM) Test
Table.5 The Results Lagrange Multiplier (LM) Test

		Test Hypothesis	
	Cross-section	Time	Both
Breusch-Pagan	0,025681	3,698830	3,724511
	(0,8727)	(0,0545)	(0,0536)

Based on Table.5 the LM test results show a value of 0,0536, which means the LM value > Chi-Square, then the result of the selected Lagrange Multiplier test is the Common Effects Model. So, it can be concluded in this study the model test selected for use is the Common Effects Model.

Normality Test

Graph.1 The Results Normality Test

Series: Standardized Residuals	
Sample 2019 2022	
Observations 148	
Mean	4.89e-17
Median	-0.012199
Maximum	0.307363
Minimum	-0.289589
Std. Dev.	0.096895
Skewness	-0.116619
Kurtosis	3.728504
Jarque-Bera	3.608229
Probability	0.164620

Graph.1 below shows that the profitability value of Jarque-Berra (JB) is 0,164620 > 0,05. The results state that the data is normally distributed or the normality assumption is met.

Multicolinearity Test
Table.6 The Results Multicolinearity Test

	ROA	LTA	EM	LV
ROA	1,000000	-0,194767	0,115010	0,068161
LTA	-0,194767	1,000000	-0,195321	0,035653
EM	0,115010	-0,195321	1,000000	-0,136229
LV	0,068161	0,035653	-0,136229	1,000000

Based on Table.6, the results of the multicollinearity test show a correlation coefficient value of < 0.98, so it can be concluded that there is no multicollinearity problem in the regression model.

Autocorrelation Test
Table.7 The Results Autocorrelation Test

N	Durbin-Watson stat	dL	dU
148	1,701866	1,6762	1,7871

Testing autocorrelation for non-time series data, such as cross section data or panel data, will have no effect on the regression model (Gujarati et al., 2012). Especially testing for panel data, although there is time series data, it is not a pure time series, because panel data is non-repeating time. As can be seen in Table.7, the Durbin-Watson value is 1,701866 with dL values at n = 148, k = 4 and α = 0,05, is 1,6762 and the dU value is 1,7871. Thus, the value of 4-dL is 2,3238 and 4-dU is 2,2129. The test results showed that the data did not have autocorrelation and also the data did not occur autocorrelation in the regression model. According to the terms of the Durbin-Watson test, the test results state no decision. So, in this study it is assumed that the independent variable does not occur autocorrelation.

Heteroscedaticity Test
Table.8 The Results Heteroscedaticity Test

	Cross-section	Time	Both
Breusch-Pagan	0,025681 (0,8727)	3,698830 (0,0545)	3,724511 (0,0536)

Based on Table.8 all regression models show values greater than 0,05, it can be said that the research regression models meet the homoscedasticity requirements and do not have heteroscedasticity problems.

F Test
Table.9 The Results F Test

N	F	Prob	Explanation
148	33,66735	0,000000	Fit Regression Model

In Table.9 the F value is 33,66735 and the probability value is 0,00000, indicating a Sig value < 0,05, so it can be concluded that the regression model in this study is fit, so it can be continued in the next test.

Coefficient of Determination (R^2) Test
Table.10 The Results Coefficient of Determination (R^2) Test

N	Adjusted R Square	Coefficient of Determination
148	0,470593	47,05%

Based on Table.10, The independent variables of the Adjust R square study are 0,470593 or 47,05%, so it can be concluded that the variables of profitability, company size, media exposure, and leverage can explain the disclosure of carbon emissions by 47,05%, the remaining 52,95% is influenced by other factors not covered in this study.

t Test
Table.11 The Results t Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Results
ROA	0,085771	0,038631	2,220238	0,0280	H1 accepted
LTA	0,003329	0,001661	2,004086	0,0469	H2 accepted
EM	0,191291	0,017199	11,12216	0,0000	H3 accepted
LV	0,015329	0,015248	1,005354	0,3164	H4 rejected

Based on Table.11, the variable coefficient of ROA is 0,085771 and the p-value is 0,0280. The test results show a probability value smaller than the significance level of 0,05 (p-value < 0,05), which means that profitability affects the disclosure of carbon emissions, so that H1 is accepted. In addition, the Total Assets coefficient in the LTA variable has a value of 0,003329 and a p-value of 0,0469. The test results show a probability value smaller than the significance level of 0,05 (p-value < 0,05), which means that the size of the company affects the disclosure of carbon emissions, so that H2 is accepted. Furthermore, the regression coefficient of the EM variable is 0,191291 and the p-value is 0,0000. The test results show a probability value smaller than the significance level of 0,05 (p-value < 0,05), which means that media exposure affects the disclosure of carbon emissions, so that H3 is accepted. Meanwhile, the LV variable coefficient has a value of 0,015329 and a p-value of 0,3164. The test results show a probability value greater than the significance level of 0,05 (p-value > 0,05), which means that leverage has no effect on carbon emission disclosure, so H4 is rejected. So, it can be concluded that factors that can affect carbon emission disclosure are profitability, company size, media exposure, while leverage is not a factor that can affect carbon emission disclosure in agricultural and mining companies listed on the Indonesia Stock Exchange in 2019-2022.

DISCUSSION
The influence of profitability and carbon emissions disclosure

Profitability, calculated using a company's ROA, can improve disclosure of carbon emissions. A higher ROA indicates that the company has good financial performance to make decisions related to its environment, such as running carbon emission reduction programs. Companies that reduce carbon emissions in the environment have a positive signal for investors, in the form of information on the company's environmental performance, which is used to make investment decisions. This research supports the statement (Ismail et al., 2018), Companies with high assets returns have more financial resources to allocate costs to carbon emissions disclosures and environmental regulations.

The influence of company size and carbon emissions disclosure

Large companies, valued by total assets, can increase carbon emission disclosure. Companies with more assets, produce more carbon emissions that have an impact on the environment. It faces greater scrutiny from stakeholders, including investors, customers, and regulators, to disclose and reduce carbon emissions. Large companies with more assets and disclosing carbon emissions, provide a positive signal for investors, in the form of company performance information related to carbon emissions that have an impact on the environment. The results of this study support the opinion (Kılıç & Kuzey, 2019a), which suggests that larger companies with more assets have the ability to better measure and report carbon emissions.

The influence of media exposure and carbon emission disclosure

Media exposure affects public and stakeholder perceptions including investors about the company's environmental condition and performance regarding the disclosure of carbon emissions generated. High media exposure can increase public pressure, making companies more transparent and committed to disclosing carbon emissions. Furthermore, this has the impact of providing positive signals for investors in knowing the company's environmental performance. This research supports the statement (Dawkins & Fraas, 2011), high media exposure can increase public pressure and investor attention to environmental issues, thereby increasing carbon emissions disclosure.

The influence of leverage and carbon emissions disclosure

High or low leverage is not a factor in increased disclosure of carbon emissions. Companies with high leverage indicate that most of the company's assets are financed by debt.

Therefore, creditors have the ability to control company management in making decisions. Creditors expect the settlement of obligations related to corporate debt to take precedence over environmental activities. As a result, to avoid pressure from creditors, companies tend to improve financial performance rather than disclosing carbon emissions that impact the environment. This research supports the assertion (Desai, 2022), Companies with high debt ratios will be under more pressure from creditors. However, the study refuted the results of the study (Hapsari & Prasetyo, 2020), that said leverage can improve carbon emissions disclosure.

CONCLUSION, IMPLICATION AND LIMITATION

Findings from this study show that from 2019 to 2022, agricultural and mining sector companies that capture carbon emissions are more likely to be affected by high levels of profitability, large company size, and high media exposure. Conversely, companies that apply leverage will be less likely to disclose carbon emissions.

The theoretical benefits of this research help companies establish comprehensive disclosure policies regarding carbon emissions. Practical benefits help management demonstrate concern for carbon emissions and help investors make investment decisions.

The study only focused on agricultural and mining companies, so factors such as profitability, company size, media exposure, and leverage against companies in other sectors can show different results. Future research could use other factors and companies that could influence carbon emissions disclosure.

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