

Public Ownership And Firm Value: Mediation Role Of Carbon Emissions Disclosure

Suwandi Ng^{1*}, Robert Jao², Fransiskus E. Daromes³, and Monica⁴

^{1,2,3,4} Program Studi Akuntansi, Universitas Atma Jaya Makassar, Makassar

Email Address:

*swnd_ng@yahoo.com**, *jao_robert@hotmail.com*, *fedaromes@gmail.com*,

monicadjie@yahoo.com

**Corresponding Author*

Abstract: Carbon emissions and the risk of climate change have a great impact on the environment and company performance. This study provides empirical evidence that public ownership encourages the disclosure of carbon emissions and their subsequent impact on firm value. In contrast to previous studies related to the driving factors for carbon emission disclosure which only focused on the role of directors and aspects of company characteristics, this study considers the ownership aspect in this case public ownership in encouraging the disclosure of carbon emissions and its subsequent impact on firm value. The research data was obtained from the Financial Statements of 122 companies listed on the Indonesia Stock Exchange for the observation period from 2015 to 2019. The data were selected using the purposive sampling method. The results of this study indicate that public ownership has a positive and significant effect on the disclosure of carbon emissions while a company is owned by the public increases firm value but not significantly. The results also show that disclosure of carbon emissions plays a role in mediating public ownership of the value of the company. The implications of this study confirm the stakeholder theory that companies should protect stakeholders by implementing environmental management and disclosing sustainability reports that provide information about their social, economic, and environmental performance.

Keywords: Public Ownerships; Carbon Emissions Disclosure; And Firm Value.

Abstrak: Emisi karbon dan risiko perubahan iklim memiliki dampak besar terhadap lingkungan dan kinerja perusahaan. Studi ini memberikan bukti empiris bahwa kepemilikan publik mendorong pengungkapan emisi karbon dan dampak selanjutnya terhadap nilai perusahaan. Berbeda dengan penelitian sebelumnya terkait faktor pendorong pengungkapan emisi karbon yang hanya berfokus pada peran direksi dan aspek karakteristik perusahaan, penelitian ini mempertimbangkan aspek kepemilikan dalam hal ini kepemilikan publik dalam mendorong pengungkapan emisi karbon dan dampaknya pada nilai perusahaan. Data penelitian diperoleh dari Laporan Keuangan 122 perusahaan yang terdaftar di Bursa Efek Indonesia periode pengamatan 2015 sampai 2019. Data dipilih dengan menggunakan metode purposive sampling. Hasil penelitian ini menunjukkan bahwa kepemilikan publik berpengaruh positif dan berpengaruh signifikan terhadap pengungkapan emisi karbon sedangkan kepemilikan publik berpengaruh positif tetapi tidak signifikan terhadap nilai perusahaan. Hasil penelitian juga menunjukkan bahwa pengungkapan emisi karbon berperan dalam memediasi kepemilikan publik terhadap nilai perusahaan. Implikasi dari

penelitian ini mengkonfirmasi teori *stakeholders* bahwa perusahaan harus melindungi *stakeholders* dengan menerapkan pengelolaan lingkungan dan mengungkapkan laporan keberlanjutan yang memberikan informasi tentang kinerja sosial, ekonomi, dan lingkungan mereka.

Kata Kunci: Kepemilikan Publik, Pengungkapan Emisi Karbon, Dan Nilai Perusahaan.

INTRODUCTION

There is increasing concern from environmentalists, civil society, policy makers, regulators, markets and shareholders about the consequences of greenhouse gas emissions and the risks of climate change on the environment and company performance (Haque, 2017). (Luo et al., 2012) observe that the driving force of climate change initiatives comes from social, economic, regulatory pressures. Companies are gradually responding to these concerns by reducing GHG emissions and adopting various strategies related to the consumption and use of water, energy, and biodiversity (Gallego-Alvarez et al., 2015).

In Indonesia, as stated by (Faisal et al., 2018), there has never been a special regulation mandating the disclosure of GHG information. Government Regulation Number 47 (2012) only requires companies that carry out their business activities in the field and/or those related to natural resources to carry out social and environmental responsibilities (Article 74 paragraph 1). In addition, Law No. 17 of 2004 and Presidential Decree No. 61/2011 only regulates the national action plan for reducing six GHGs targeted by the Kyoto Protocol, namely carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons, and hydrofluorocarbons.

However, the series of arguments and explanations above have at least shown that there is a common awareness of the reality of the issue of carbon emissions. And more than that, there needs to be a joint movement to overcome or at least to reduce the negative impact of carbon emissions.

Thus, motivation of this research arises from the importance of disclosing carbon emissions (Milne and Grubnic, 2011); (Moroney et al., 2012); (Ferguson et al., 2016). Investors and other stakeholders increasingly need meaningful and transparent disclosure of GHG emissions and the management of associated risks (Solomon et al., 2011; Hartmann et al., 2013; Cheung et al., 2016). However, previous research related to the disclosure of carbon emissions only focused on the role of the board of directors and aspects of company characteristics; (Haque, 2017; Luo et al., 2012, Faisal et al., 2018; Hollindale et al., 2019; Monica et al., 2021; Nuber and Velte, 2021). In contrast to the research by (Monica et al., 2021), this research focuses on the argument of how public ownership can encourage the disclosure of carbon emissions which in turn has an impact on firm value.

Criticizing the gaps above and departing from a belief that companies that disclose carbon emissions will make it easier for stakeholders to make decisions about the state of the company's carbon emission performance, this study considers aspects of public ownership in encouraging disclosure of carbon emissions mediating the relationship of public ownership to company value. This research is important considering that environmental issues are a matter of great concern to all parties. Disclosure of carbon emissions is expected to create sustainability support from stakeholders, especially those

involved or indirectly involved. The public contribution as the owner of the company makes decisions that are carried out very carefully, tend to avoid risk, and are meticulous in making the disclosures made to be of high quality so that it has an impact on increasing the value of the company.

Companies that carry out environmental disclosures can increase trust in the eyes of the community because they are considered to be responsible for the environment so that companies get benefits or potential resources for companies to survive (going concern). Thus, this study is designed how public ownership encourages advocating for the disclosure of carbon emissions and their impact on company value.

THEORITICAL REVIEW

Stakeholder Theory. (Harrison et al., 2019) explained that stakeholder theory is a theory that describes which parties the company is responsible for, either to groups or individuals who get profits/losses, whose rights are violated/appreciated by the company's activities. One of the stakeholder management that can be done in order to maintain the company's relationship with the parties involved is through the company's concern for the environment by conducting a sustainability report containing information on performance, economic, social, and environmental in the form of disclosure of carbon emissions to all company stakeholders.

Gaia Theory. (Lovelock, 2016) in gaia theory states that companies are currently obliged to maintain, protect and preserve the environment which is not only for the benefit of humans themselves, but also must respect other supporting elements of the earth such as land, oceans, and all its components, both living and non-living. no. Gaia theory has given birth to its own ethical implications in viewing the world from a different perspective (Kelvin et al., 2019). In the earth's living system, all components and elements of the earth have an equally valuable value in contributing to maintaining the condition of the earth so that it remains livable.

Public ownerships. (Julekhah and Rahmawati, 2019) define public ownership as the portion of outstanding shares owned by the general public or outsiders. The public is an individual with a share ownership of less than 5 percent who is outside the management and has no special relationship with the company. Public ownership has great power in influencing the company through the mass media in the form of criticism or comments, all of which are considered as the voice of the community.

Carbon Emissions Disclosure. Stakeholders increasingly need meaningful and transparent disclosures regarding greenhouse gas emissions and management of the risks that arise (Choi et al., 2013). The disclosures made can also show that the company is serious in responding to environmental issues, especially related to the disclosure of carbon emissions. Broad disclosure may be limited if the quality of the data is low and does not permit an assessment of the company's true GHG emissions strategy and performance (Rama and Dianawati, 2021).

Firm Value. Firm value shows investor confidence and perception regarding the level of success of the management in managing the company. (Ng and Daromes, 2016) stated that the main goal of the company according to the theory of the firm is to maximize firm value. The high value of the company not only reflects good performance but also provides confidence for investors about the future prospects and going concern of the company.

Theoretical framework and hypothesis development. Stakeholder theory explains the company's relationship with stakeholders who influence or are influenced by the company's activities, goals and decisions to be made by the company. A well-managed relationship between the company and its stakeholders will maintain the company's sustainability in the future. Efforts made by the company in the form of disclosure of carbon emissions will form the perception of stakeholders that the company cares about the interests of the community and is also responsible for the universe.

The elements of stakeholders that must be the company's attention are increasingly emphasized by the Gaia theory. (Lovelock, 2016) asserts that in the earth's living system, all components and elements of the earth have an equally valuable value in contributing to maintaining the condition of the earth so that it remains livable. One way that companies can do in paying attention to their stakeholders is by providing information about the company's activities. (Ahmad and Hossain, 2015) state that through information on carbon emission disclosures in the company's annual report, stakeholders will be able to understand how the company's policies, values, and motives are to tackle carbon emissions produced by the company so that it can create its own value for the company.

The ownership structure of the company shows the proportion of ownership of certain parties to the company and how much the owner is able to influence the company's policy making. Public ownership can put pressure on companies to maintain the viability of natural ecosystems and the living conditions of present and future generations (Odriozola and Diez, 2017). Companies cannot escape the role of public ownership through mass media which can shape public opinion based on criticism and comments, all of which are considered as the voice of the community.

Hypothesis Development. Based on the framework that has been made previously, the following hypotheses can be developed regarding the pattern of relationships between variables in this study:

Public ownership and Disclosure of Carbon Emissions. (Putri et al., 2016) which states that a high ratio of public ownership is predicted by companies to carry out higher levels of social disclosure, this is associated with pressure from shareholders, so that companies pay more attention to their responsibilities to society. Companies with a high level of public ownership tend to make more environmental disclosures because they are considered to have a moral responsibility to nature. Public share ownership is able to create media in the form of public opinion to increase awareness of the disclosure of carbon emissions.

Stakeholder theory makes it easier for organizations to understand their obligations and responsibilities to stakeholders. The existence of nature's call to contribute to maintaining the harmony of the earth also shows that the earth is a system of organisms consisting of interdependent and inseparable elements, so that life on earth must support each other and run continuously (Lovelock, 2016).

Companies whose shares are widely owned by the public reflect that the company has high credibility in the eyes of the public in providing company information because it is considered to have a moral responsibility to society and the environment. Companies can demonstrate the best GHG management skills that have been done by disclosing carbon emissions. The role of public ownership as a supervisor is the main consideration for companies to disclose carbon emissions through the touch of the media. This will cause the level of disclosure of carbon emissions by the company to increase so that it will form public opinion that the company cares about the environment. Based on the explanation above, the following hypothesis is formulated:

H1: Public ownership has a significant effect on the disclosure of carbon emissions.

Disclosure of Carbon Emissions and Firm Value. Stakeholder theory considers the relationship that exists between the company and its stakeholders (Rankin et al., 2012). Disclosure of carbon emissions can maintain good relations with stakeholders that the company is trying to be efficient because it has a commitment and concern for the environment. Disclosure of carbon emissions is also an expression of respect and the company's efforts to always remind the need to maintain and preserve all living systems on this earth.

(Lovelock, 2016) in the Gaia theory stated that the living system on earth had issued a 'red light' or an alarm that the earth's immune system had approached the threshold. The high content of CO₂ and other greenhouse gases in the atmosphere is no longer able to be rapidly reduced by all plants and phytoplankton on earth today. Therefore, disclosure of carbon emission reductions can be used as a sign of the company's seriousness in contributing to maintaining and maintaining the stability of the earth's homeostasis system. This information on the company's carbon emissions will increasingly attract the attention of capital market players so that it can be used to analyze company value (Rashid, 2018).

Disclosure of carbon emissions allows investors to identify potential risks to a company's future performance and evaluate alternative strategies to meet the challenges associated with those risks. The high level of corporate disclosure also gives a message that the company's carbon management activities are related to better economic performance because the efficiency carried out such as replacing old energy-consuming equipment can result in better company performance. Thus, the disclosure of carbon emissions will encourage investors to measure the company's operational value through the identification of sustainable management practices that will result in higher company value. Based on the explanation above, the following hypothesis is formulated:

H2: Disclosure of carbon emissions has a significant effect on firm value.

Public Owners and Firm Value. Research on public ownership on firm value has been carried out by (Hasnawati and Sawir, 2015) which states that public ownership has a negative effect on firm value because share ownership is spread so that the control of the majority shareholder becomes dominant in decision making so that it has an impact on the decline in firm value. However, (Henryani and Kusumastuti, 2013) show that if the proportion of public shares is greater than 40 percent public shares will have a positive effect

on firm value. The essence of this test emphasizes that the company's performance will be better if the proportion of publicly owned shares can be increased.

(Adnantara, 2013), (Nur'aeni, 2014), and (Lestari, 2017) find that public ownership has no significant effect on firm value. This is because individual public shareholders have an ownership percentage of less than 5 percent which makes them unable to monitor and intervene on management performance.

(Harrison et al., 2019) in stakeholder theory states that companies have an obligation to pay attention to all parties including stakeholders. who feel the impact or influence of their activities. Stakeholder theory deals with explicit morals and values as the main features of managing a company and not just maximizing shareholder wealth. For this theory, paying attention to the interests and welfare of stakeholders is an obligation (Freeman et al., 2020).

Stakeholder theory also states that stakeholders have the right to know all information, both financial and non-financial information. The impact of company activities on stakeholders can be known through the transparency of information provided to the public. Although public ownership tends to be non-controlling individually, they have the power to influence the company through the mass media in the form of criticism or comments, all of which are considered the voice of the community (Asiz, 2016).

Management policy to increase the proportion of public shares will have a greater impact on increasing the value of the company. Thus, a fairly large proportion of public shares will motivate management to carry out more transparent governance practices as a form of management accountability to the public so as to increase company value (Monica and Ng, 2018). Based on the explanation above, the following hypothesis is formulated:

H3: Public ownership has a significant effect on firm value.

Public ownerships, Disclosure of Carbon Emissions, and Firm Value. Companies with public ownership represent that the company has high credibility in the eyes of the public in providing company information because it is considered to have a moral responsibility to the community and the environment. The existence of public shareholders oversees the company's activities so that it becomes the main consideration for companies to disclose carbon emissions through the mass media as a form of corporate responsibility to society, nature, and interested parties so that the value of the company tends to increase.

Stakeholder theory deals with morals and values as the main features in managing the company and not just maximizing shareholder wealth. Modern stakeholder theory argues that the value of a company depends on explicit and implicit costs (Cornell and Shapiro, 2021). Each stakeholder has different interests thus giving various implicit claims to the company, such as quality service and social and environmental responsibility. Disclosure of carbon emissions can create protection for shareholders, especially minority ownership such as public ownership because a harmonious relationship between companies and stakeholders through disclosure of carbon emissions will increase the value of the company.

According to the gaia theory, the earth's living system, including all components and elements of the earth, has an equally valuable value in contributing to maintaining the condition of the earth so that it remains habitable. The company's activities that cause excessive carbon emissions are very dangerous for the whole balance system. Although nature has the ability to heal itself, geological products run evolutionarily which means it

takes a long time to recover while humans live in a very short time span will be the first victims of their own actions.

Although public ownership tends to be non-controlling individually, they have the power to influence the company through the touch of the mass media in the form of criticism/comments which are considered the voice of the community (Asiz, 2016). (Schmierbach et al., 2022). stated that "we judge as important what the media judge as important" which means that we judge something as important as the media judge it as important. The statement from McCombs and Shaw explains that the mass media has the ability to make people judge something important based on what the media conveys. Thus, a fairly large proportion of public shares will motivate the management to make more transparent disclosures of carbon emissions as a form of management accountability to the community and the environment so as to increase the value of the company. Based on the explanation above, the following hypothesis is formulated:

H4 : Disclosure of Carbon Emissions mediates the relationship of Public Owners to Firm Value.

METHODS

Data. The population in this study were all companies listed on the Indonesia Stock Exchange (IDX) for the 2015 to 2019 period. The criteria used in the selection of the sample are non-financial companies that are continuously listed on the Indonesia Stock Exchange for the 2015 to 2019 period, the company publishes an annual report and audited financial statements for the 2015 to 2019 period, the company's financial statements are presented in full expressed in rupiah, and the company issues at least one policy related to carbon emissions or discloses at least one item of disclosure on carbon emissions.

Variable Measurement. The area of carbon emission disclosure items was measured using the index developed by (Choi et al., 2013) which is constructed from the CDP Carbon Disclosure Project (CDP) request sheet, with the formula:

$$CED = \left(\frac{\sum di}{M} \right) \times 100\% \dots\dots\dots (1)$$

Note:

- CED = carbon emission disclosure
- $\sum di$ = the total score of 1 obtained by the company
- M = max total items that can be disclosed (18 items)

If the company discloses the item as specified, it will be given a score of 1, while if the specified item is not disclosed it will be given a score of 0. Then the score of 1 is added up as a whole and divided by the maximum number of items that can be disclosed and then multiplied by 100 percent.

The firm value used is measured by using Tobin's Q modified by (Gaio and Raposo, 2011) in the form of Simple Q because of the difficulty in estimating the market value of debt and replacement costs. The use of this measuring instrument has been used by several previous studies, including (Kelvin et al., 2017; Daromes et al., 2021). Tobin's Q calculation formula is:

$$Q_{it} = \frac{BVA_{i,t} + MVE_{i,t} - BVE_{i,t}}{BVA_{i,t}} \dots \dots \dots (2)$$

Note:

- $Q_{i,t}$ = value of Tobin's Q for firm i in year t
- $BVA_{i,t}$ = book value of total assets for company i in year t
- $MVE_{i,t}$ = market value of equity for firm i in year t
- $BVE_{i,t}$ = book value of equity for company i in year t

Public ownership is the proportion of shares owned by the general public or outsiders. Public ownership in this study was measured using the formula from (Raharja's, 2013). The formula is as follows:

$$Public\ Ownership = \frac{Number\ of\ Shares\ owned\ by\ the\ public}{Number\ of\ outstanding\ shares} \dots \dots \dots (3)$$

RESULTS

Data Description. The object of research in this study is all publicly traded companies listed on the Indonesia Stock Exchange as a population as outlined in the 2015 to 2019 financial statements. The sample selection used the purposive sampling method. Companies that meet the sample criteria for each year are 122 companies. The observation period in the study is from 2015 to 2019, so the total number of units of analysis is 610 units of analysis. The results of the analysis using SPSS version 20 software showed that from a total of 610 data, there were indications that 217 data had outliers (Z-score approximately 1.960), so they were not used in the analysis. Thus, the total sample used is 393 units of analysis.

Descriptive statistics are carried out to analyze and present quantitative data with the aim of knowing the description of the companies that are used as research samples as a whole, it can be seen the average, maximum, minimum, and standard deviation values of the variables studied. The results of the descriptive statistics of the study are presented in table 2.

Table 1. Descriptive Statistical

Variables	N	Min	Max	Mean	Std. Deviation
Public ownership (PO)	393	0.051	0.567	0.316	0.126
Carbon Emissions Disclosure (CED)	393	0.056	0.333	0.177	0.080
Firm Value (FV)	393	0.120	2.031	0.996	0.447

Source: Processed Data (2020)

Public ownership shows the lowest (minimum) value of 0.051 and the highest (maximum) of 0.567. The average value of this variable is 0.316. The standard deviation which shows the variation of ownership in the company is 0.126. The standard deviation value, which is less than the average value, shows that the public ownership data's deviation is less than the average value, indicating that the nature of the study's data is dispersed.

The results of descriptive statistics in table 1 show that the lowest (minimum) and highest (maximum) carbon emission disclosures are 0.056 and 0.333 with an average of

0.177 and a standard deviation of and 0.080. This shows that the awareness of companies in Indonesia to disclose carbon emission information is quite low because on average companies only disclose 2 to 3 items out of 18 items of the carbon emission disclosure index. The study's data are spread out because the standard deviation value is lower than the average value and the deviation of the carbon emission disclosure data is lower than the average value.

The lowest (minimum) and highest (maximum) firm values are 0.120 and 2.031, with a mean and standard deviation of 0.996 and 0.447. This means that the average value of the company in Indonesia is almost good because it shows a value of almost 1. (Alipour, 2013) states that if the value of the company is greater than 1, it means that value has been added to the company over the years. If the value of the company is less than 1, it means that the company is not well managed. The fact that the standard deviation value is less than the average value shows that the firm value data's deviation is less than the average value and that this study's data is generally distributed.

Path Analysis. To determine the relationship pattern of the three research variables, four hypotheses will be tested. These hypotheses were analyzed using path analysis which aims to predict the correlation between exogenous and endogenous variables. Path analysis coefficients are taken from standardized regression coefficients. The path diagram model is described below based on the data processing results obtained for this research model:

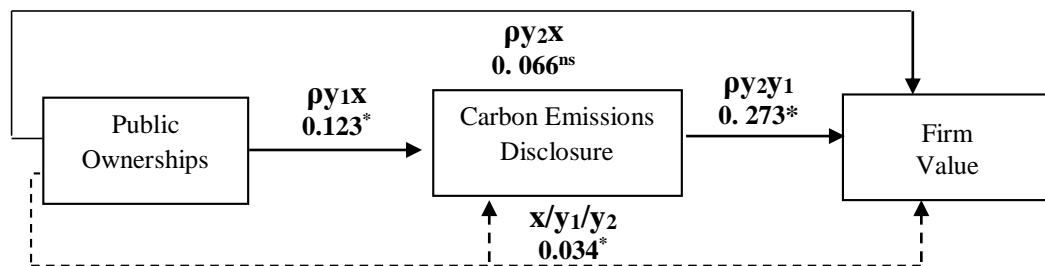


Figure 1. Results of Path Analysis Model

Note:

- * = Significant effect
- ns = No significant effect
- = Direct effect
- - - = Indirect effect

The substructure equation 1 above shows that public ownership has a positive and significant effect on the disclosure of carbon emissions, which means that if public ownership in the company increases, it will statistically increase the disclosure of carbon emissions. In substructure equation 2 that has been formulated previously, it shows that public ownership and disclosure of carbon emissions have a positive effect on firm value. This means that an increase in public ownership and disclosure of carbon emissions will statistically result in a higher firm value.

T-test. The t-test was used to determine whether in the regression model the independent variable partially had a significant effect on the dependent variable.

Table 2. T test Result

Model Structure	Standardized Beta	Sig.	Explanation
Substructure 1 (Influence of Public Ownership on Disclosure of Carbon Emissions)			
Public ownership (PO)	0.123	0.019	Significant
Substructure 2 (Effect of Public Ownership and Disclosure of Carbon Emissions on Firm Value)			
Public ownership (PO)	0.066	0.199	Insignificant
Carbon Emissions Disclosure (CED)	0.273	0.000	Significant

Source: Processed Data (2020)

Public ownership has an effect of 0.123 and a significance probability of 0.019 less than 0.05, which means that the disclosure of carbon emissions is influenced positively and significantly by public ownership. Thus, H1 which states that public ownership has a significant effect on the disclosure of carbon emissions is accepted.

Carbon emission disclosure has an effect of 0.273 and a significance probability of 0.000 less than 0.050, implying that carbon emission disclosure has a positive and significant effect on firm value. As a result, H2, which states that disclosing carbon emissions has a significant impact on firm value, is accepted.

Public ownership has an effect of 0.066 and a significance probability of 0.199 greater than 0.050, which means that public ownership has a positive but not significant effect on firm value. Thus, H3 which states that public ownership a significant effect on firm value, is rejected.

Table 3. Results of Analysis of Direct Effects, Indirect Effects, and Total Effects

Variable Combination	Direct Effect	Indirect Effect	Total Effect
PO → DEC	0.123	-	0.123
DEC → FV	0.273	-	0.273
PO → FV	0.066	0.123 x 0.273 = 0.034	0.100

Source: Processed Data (2020)

Based on the results of the indirect effect analysis in table 9 above, it shows that the effect of public ownership (PO) on firm value (FV) through the disclosure of carbon emissions (CED) is 0.034.

Sobel Test. Sobel test was conducted to test the strength of the indirect effect of the independent variable (PO) on the dependent variable (FV) through the mediating variable (CED).

Table 4. Sobel Test Results

Description	Estimated Value	Standard Error	p value of sobel test	Confirmation
PO → FV via CED	0.078; 1.521	0.033; 0.277	0.030	Significant

Source: Processed Data (2020)

The effect of public ownership (PO) on firm value (FV) through disclosure of carbon emissions (CED) based on table 6 has a probability value of 0.030, smaller than 0.050. The results of the Sobel test with a significance probability of less than 0.050 indicates that the disclosure of carbon emissions is proven to mediate public ownership on firm value. Thus H4 which states that the disclosure of carbon emissions has a role as a full mediation in mediating public ownership on firm value, is accepted.

DISCUSSION

The results of this study prove that public ownership has a positive and significant effect on the disclosure of carbon emissions. This can be seen in table 2 where the standardized regression coefficient is 0.123 and the significance probability is 0.019 more than 0.050. These results indicate that the greater the public ownership will have a significant effect on increasing the disclosure of carbon emissions.

Companies are often considered as parties who have wider information regarding the actual state of the company than stakeholders. Therefore, (Rahayu and Anisyukurillah, 2015) state that the presence of public share ownership reflects the form of corporate responsibility in making wider disclosures. Public share ownership is the company's external source of funding obtained from public participation in shares. High public share ownership indicates the ability of a company to satisfy stakeholder interests. This is evidenced by the company's ability to provide information to stakeholders so that it persists in the business it is engaged in to date and even tends to survive into the future.

This study is in line with the research conducted by (Putri et al., 2016) which states that public share ownership has a positive effect on the disclosure of carbon emissions. Meanwhile, the results of this study differ from those of (Nur and Priantinah, 2012) who found that public share ownership has no effect on the company's disclosures. The reason revealed from the research results of (Nur and Priantinah, 2012) is the possibility of public share ownership in Indonesia in general not paying attention to environmental and social issues as critical issues that must be extensively disclosed in the company's annual report. The high ratio of public ownership is expected to be able to make companies make more social disclosures due to pressure from stakeholders so that companies pay more attention to their responsibilities to society and moral responsibility to nature because the public is able to create media in the form of public opinion to increase awareness of carbon emission disclosures.

Public ownership may not benefit the company greatly because the percentage of shares is small. However, the environmental impacts resulting from the company's activities greatly affect the environmental conditions of the community. Therefore, public pressure tends to be strong when it comes to the environment and can have a significant impact on the company's ability to produce carbon emission disclosures. The role of public share ownership as a supervisor is the main consideration for companies to disclose carbon emissions through the touch of the media. Companies can demonstrate skills in managing greenhouse gases that have been done through disclosure of carbon emissions. This has resulted in an increasing level of disclosure of carbon emissions such as revealing the presence of external verification in measuring the amount of greenhouse gas emissions by the company in order to form an image in the community that the company cares about the environment.

The results of this study indicate that public ownership has a positive but not significant effect on firm value. This can be seen in table 2 where the standardized regression coefficient is 0.066 and the significance probability is 0.199 greater than 0.050. This study shows that increasing public ownership can have an effect on increasing firm value, but it does not have a strong enough effect.

Companies are often considered as parties who have more information about the company than stakeholders. The information referred to is more detailed and more honest information regarding the actual state of the company. Therefore, stakeholders use their supervisory function to pressure the company to make company information transparency. Although public ownership tends to be non-controlling individually, they have the power to influence the company through the mass media in the form of criticism or comments, all of which are considered the voice of the community (Asiz, 2016).

The results of this study are not in line with research conducted by (Henryani and Kusumastuti, 2013) which states that public share ownership has a positive and significant effect on firm value if the proportion of public shares is greater than 40 percent where the essence of this test emphasizes that the company's performance will be better if the proportion of public shares is greater than 40 percent. public shares can be increased. However, (Adnantara, 2013) actually states that public share ownership has no significant effect on firm value because individually public shareholders have an ownership percentage of less than 5 percent which makes public investors unable to intervene and monitor the performance of company management.

(Harrison et al., 2019) in stakeholder theory states that companies have an obligation to pay attention to all parties including stakeholders. who feel the impact or influence of their activities. Management policy to increase the proportion of public shares will have a greater impact on increasing the value of the company. Thus, a fairly large proportion of public shares will motivate the management to carry out more transparent governance practices as a form of management accountability to the public so as to increase the value of the company.

This study shows that public ownership has a positive but not significant effect on firm value. This indicates that public shareholding does not have the ability to participate in managing the financial aspects of the company. The meaning of supervision of public ownership is not from the aspect of financial control but from the ability of the public to use people power to monitor the company's activities from the environmental impact it causes. If the company makes a financial gain, the public may not benefit from owning a small stake. However, the company's activities that have an impact on the environment actually harm the community first.

The results also show that public ownership has no significant effect on the disclosure of carbon emissions, and carbon emissions have a significant effect on firm value. Meanwhile, the results of the Sobel test conducted in table 4 state that there is a significant effect of the independent variable, namely public ownership on firm value through the disclosure of carbon emissions. Thus it can be concluded that the disclosure of carbon emissions plays a role in mediating public ownership of firm value.

Companies with public ownership represent that the company has high credibility in the eyes of the public in providing company information because it is considered to have a moral responsibility to the community and the environment. The existence of public shareholders oversees the company's activities so that it becomes the main consideration for

companies to disclose carbon emissions through the mass media as a form of corporate responsibility to society, nature, and interested parties so that the value of the company tends to increase.

Stakeholder theory deals with explicit morals and values as the main features of managing a company and not just maximizing shareholder wealth. Modern stakeholder theory argues that the value of a firm depends on explicit and implicit costs (Cornell and Shapiro, 2021). Each stakeholder has different interests thus giving various implicit claims to the company, such as quality service and social and environmental responsibility. Disclosure of carbon emissions can create protection for shareholders, especially minority ownership such as public ownership because a harmonious relationship between companies and stakeholders through disclosure of carbon emissions will increase the value of the company.

According to the Gaia theory, the earth's living system, including all components and elements of the earth, has an equally valuable value in contributing to maintaining the condition of the earth so that it remains habitable. The company's activities that cause excessive carbon emissions are very dangerous for the whole balance system. Although nature has the ability to heal itself, geological products run evolutionarily which means it takes a long time to recover while humans live in a very short time span will be the first victims of their own actions.

The response to the threat posed by climate change has become a worldwide concern and has become an integral part of business. The increasing temperature conditions of the earth caused by rising CO₂ levels from excessive exploration of natural resources can trigger the wrath of the earth to immediately carry out mass destruction and form a new, more stable ecosystem. However, the earth itself does not guarantee that humans as the most powerful creatures can escape the annihilation that will occur in the future. Therefore, awareness of the importance of preserving the environment is the responsibility of all creatures on earth to jointly contribute to maintaining the condition of the earth so that it remains livable.

Although public ownership tends to be non-controlling with an ownership percentage of less than 5 percent, they have the power to influence the company as part of the community or part of the company through the touch of the mass media in the form of criticism or comments, all of which are considered as the voice of the community (Asiz, 2016). Thus, a fairly large proportion of public shares will motivate the management to make more transparent disclosures of carbon emissions as a form of management accountability to the community and the environment so as to increase the value of the company.

CONCLUSION

This study was conducted with the aim of testing the effect of public ownership on the disclosure of carbon emissions and firm value. Based on the data analysis that has been done previously, the conclusion that can be drawn from this research is that public ownership has a positive and significant effect on the disclosure of carbon emissions, but public ownership has no significant effect on firm value. Owners of public shares do not have the ability to participate in managing the financial aspects of the company, but they have people power to monitor the company's activities from the environmental impacts

caused by the company's activities that have an impact on the environment, which harm the community first. Therefore, public pressure tends to be strong in paying attention to the environmental impact generated by the company compared to producing a market value that does not have a significant impact on the public.

The results also show that the disclosure of carbon emissions plays a role in mediating public ownership of company value. The increasing condition of the earth's temperature caused by rising CO₂ levels is the responsibility of all creatures on earth to jointly preserve the environment (earth) so that it remains livable. The response to the threat posed by climate change has become a worldwide concern and has become an integral part of business. Companies do not only disclose but must pay attention to the material value of the impacts caused by the company, even if it is necessary to use the value of metric tons of carbon produced. Therefore, disclosure of carbon emissions can be a form of mandatory contribution for companies to participate in maintaining the harmony of living systems on earth.

This study has limitations, including the fact that carbon emission disclosures are only measured in annual reports because not all companies issue sustainability reports as another source of environmental disclosure. Therefore, to answer the limitations of this study, future research should examine the company's carbon performance in order to provide evidence that the disclosure of carbon emissions is not only a disclosure as a form of corporate image but a high awareness of the company to maintain the balance and sustainability of natural ecosystems.

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