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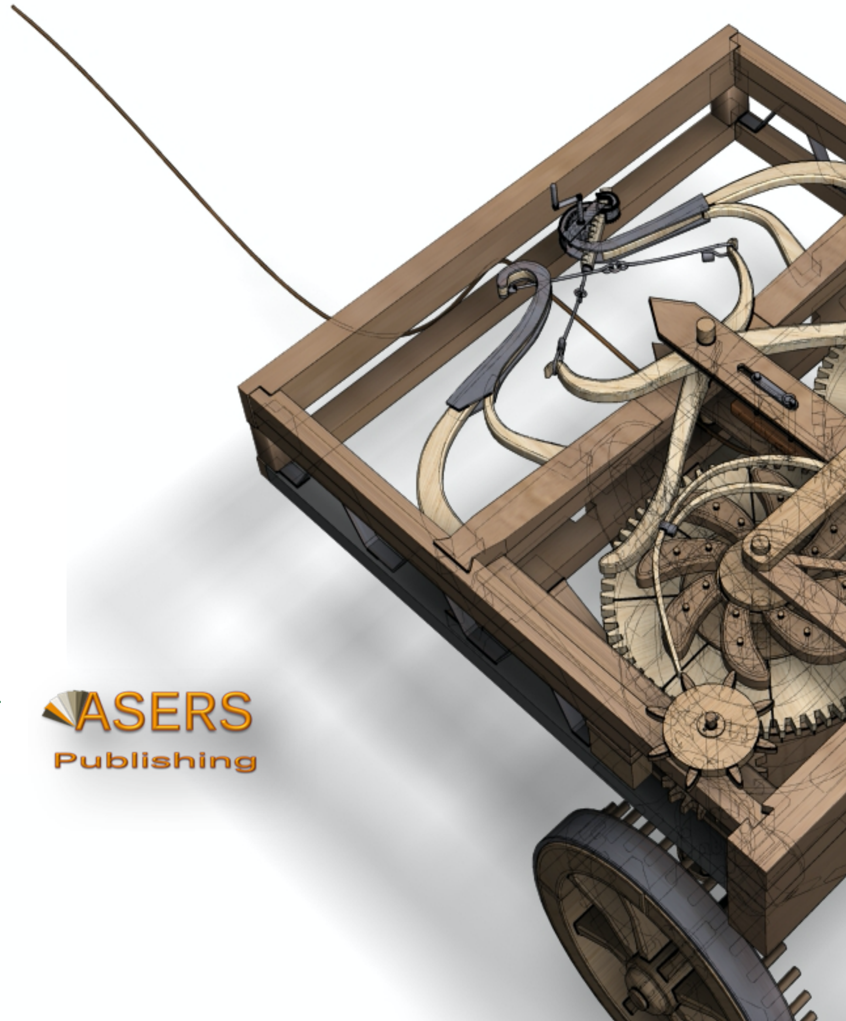
Journal of Environmental Management and Tourism



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Institutional Ownership in Encouraging Carbon Emission Disclosure for Mining Companies, Basic Industries and Chemicals in Indonesia

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Abstract:

This research analyses the effect of institutional ownership in strengthening the effect of environmental performance, regulators, and media exposure on carbon emissions disclosure. By using certain criteria in sampling, the unit of analysis was obtained from as many as 57 companies. The research focused on mining, basic industry, and chemical companies listed on the Indonesia Stock Exchange in 2018-2020. Hypothesis testing was carried out using moderated regression analysis which was strengthened by descriptive analysis for each research variable. In general, it is found that the carbon emissions disclosure in the research object is classified as low, with an average disclosure of 7-8 items out of 18 items that must be disclosed in the report. Hypothesis testing shows that environmental performance and media exposure have a positive effect on carbon emissions disclosure, while regulators have no effect on carbon emissions disclosure. The presence of institutional ownership as a moderating variable was found to be able to strengthen the influence of regulators in increasing the carbon emissions disclosure, but not able to strengthen the effect of environmental performance and media exposure on the carbon emissions disclosure. This research contributes to regulators, developing standards for carbon emissions disclosure for companies that go public. Further researchers are expected to add other variables that can affect the carbon emissions disclosure and increase the research period to get more accurate results.

Keywords: carbon emission disclosure; environmental performance; regulator; media exposure; institutional ownership.

JEL Classification: Q51; Q54; P27.

Introduction

In the era of globalization as it is now, the issue of global warming or what is commonly called global warming is a big problem that is still a hot topic of discussion in various circles. Dependence on carbon-based energy sources adversely affects various aspects, including climate change in the world. This condition is marked by an increase in the earth's temperature which is getting hotter (Prabandari, 2020). The United Nations Framework Convention on Climate Change (UNFCCC) describes climate change as a symptom caused directly or indirectly by human activities (KLHK, 2017).

Disclosure of carbon emissions for companies can provide benefits, both in terms of preserving the environment and building a positive image of the company in various circles, including the community. Legitimacy theory explains the relationship between the company and the community as stakeholders. Companies must disclose their carbon data to the public to help companies legitimize their operations (Brammer & Pavelin, 2006).

Basically, legitimacy can follow the possibility of the development of time and place (Bae Choi *et al.* 2013). Thus, to gain the legitimacy of stakeholders, the company will carry out disclosure of information related to its operational activities including information on carbon emission disclosures so that stakeholders can know that the company has been operating in accordance with applicable norms and limits. In addition to the legitimacy theory, this research presents stakeholder theory as the theory behind the need for companies to disclose environmental activities. Environmental reporting aims to reduce the information gap between the company and its stakeholders, as well as as a form of written evidence that the company is not only selfish but also seeks to benefit stakeholders.

1. Literature Review

1.1. Background

Global warming occurs in line with human activities that use the environment to produce energy by carrying out factory operations (Ramlan, 2002). The results of the combustion create CO2 gas that accumulates in the air and creates a greenhouse effect for sunlight entering Earth, as well as blocking heat wave radiation emitted to Earth to be reflected into space. Another effect is that it causes climate change in various places, causing natural disasters such as floods, forest fires, and hurricanes. Climate change has a signal through weather shifts, such as rainy and dry seasons, changes in rainfall, and changes in temperature for a 30-year period. The impact of climate change can be felt in Indonesia. The erratic climate pattern causes losses in several sectors such as the agricultural sector, causing a decline in the planting period (Erikania 2016).

The World Resources Institute (WRI) presented data that there were contributions of more than half of global greenhouse gas emissions given by ten countries in the world. Then launched Climate Watch through WRI Indonesia, until early 2018, the largest contributor of greenhouse gas emissions globally was China. Indonesia is included in the list of ten countries referred to as contributors to global greenhouse gas emissions where Indonesia produces around 2% of global emissions, most of which is generated through the energy and industrial sectors. Currently, the Indonesian government is trying to develop policies to deal with climate problems and their impacts in the future. The implication of this policy is that it is hoped that entities that contribute to carbon emissions in Indonesia can participate in supporting government policies to reduce carbon emissions in 2030. One form of company participation in reducing carbon emissions can be in the form of preventive actions and social responsibility. The form of this responsibility is shown through the carbon emission disclosures contained in the annual report and sustainability report.

Based on the Statement of Financial Accounting Standards (PSAK) it states that companies are obliged to report carbon emission disclosures, which are submitted through: (1) PSAK 57 which reveals that companies must have reserves if they find constructive obligations (obligations outside of legal obligations), for example the company's commitment to maintaining environmental sustainability, (2) PSAK 48 conveys the decline in the value of assets such as the latest technology in waste treatment, (3) PSAK 60 describes the existence of risks to the environment processed by companies that must be reported when related to financial instruments, in this case related to changes in climate as a business risk and a consideration for the company. (4) PSAK 19 relating to intangible assets, where companies must also have SDGs elements in developing new products, such as creating environmentally friendly packaging by reducing plastic waste (Wiratno & Muaziz 2020). Although the regulations are still voluntary, in the practice of accounting, carbon emission disclosures are important things that need to be disclosed by companies. In its implementation in Indonesia, the company has not carried out the disclosure of carbon emissions because it is still voluntary disclosure (Witri Astiti & Wirama 2020).

Based on this phenomenon, the general objective of this research is to analyze what variables influence companies in Indonesia to disclose carbon emissions. Meanwhile, this research specifically focuses on the disclosure of carbon emissions in Indonesian companies operating in the mining, industrial, and chemical sectors. The selection of the object is because operational activities in the sector are known to be less environmentally friendly and contribute a lot of carbon emissions, as evidenced by the research of Suhardi & Purwanto (2015) which indicates that companies that produce steel, paper, chemicals, and processing resources such as coal have a responsibility considerable responsibility for environmental conservation.

Environmental performance is defined as the company's ability to build a greener, cleaner, and more sustainable environmental system as an effort to preserve the environment. The concept of legitimacy theory shows that social relations between companies and the community as stakeholders require companies to comply with applicable boundaries and norms. Companies with good performance levels will try to provide overall information, including the disclosure of carbon emissions in their annual reports (Majid & Ghozali 2015). It aims to show the company's commitment to preserving the environment which will ultimately gain legitimacy from

stakeholders. Therefore, through optimal environmental performance, it can be an impetus for companies to carry out carbon emission disclosures. The results of research by Widianto & Sari (2020) and Giannarakis *et al.* (2017) suggest that there is a positive influence of environmental performance on carbon emission disclosures.

In Indonesia, companies that carry out activities related to environmental sustainability are monitored by the Ministry of Environment and Forestry and are rated by PROPER (Company Performance Rating Program). The PROPER consists of five categories with each category determined by color, namely gold, green, blue, red, and black. Furthermore, each rank will be scored according to color. Gold rating scores 5, green scores 4, blue scores 3, red scores 2, and black scores 1. The measurement of environmental performance is proxied through the PROPER rating as used in previous research, namely Agung Ulupui *et al.* (2020); Apriliana *et al.* (2019); Jannah & Muid (2014); Widianto & Sari (2020). The results of Clarkson *et al.* (2008); Datt *et al.* (2019) prove that companies that perform well will be more honest in reporting their commitments to disclose their carbon emissions voluntarily. Different findings were obtained by Agung Ulupui *et al.* (2020; Ratmono *et al.* (2021); Solikhah *et al.* (2021) which proves that the environmental performance variable does not affect the carbon emission disclosure. In addition to environmental performance which is predicted to affect the disclosure of carbon emissions, the role of regulators and mass media coverage is suspected to have participated in influencing. The government acts as a regulator with the authority to implement policies related to environmental problems caused by company activities. Governments who are aware of the impact on the environment will pressure companies to comply with regulations to be more responsible for environmental sustainability and the health of the surrounding community (Pratiwi 2017). In addition, pressure from the government is also a major factor for companies to develop a carbon emission disclosure strategy (Peng *et al.* 2015). Furthermore, research by A Hermawan *et al.* (2018); Yunus *et al.* (2020) shows that regulators act as a driving factor for companies to be responsible for their environment by reporting carbon emissions so that regulators have a positive effect on carbon emission disclosures. In contrast to the research conducted by Herdiawan & Dewi (2020) which stated that there was a negative influence from regulators on carbon emissions disclosure.

The news presented by the media can influence the public's attitude towards the company's performance, which can also influence the actions and decisions of stakeholders. Media exposure has an impact on the company's carbon emission disclosures because the media will play an important role in presenting and conveying any information related to the company to the public, especially in disclosing carbon emissions (Ulfa & Ermaya 2019). This is supported by the research of Winarsih & Supandi (2020); Yunus *et al.* (2020) which show that there is a significant influence of media exposure on carbon emission disclosures. On the other hand, Laksani *et al.* (2020) showed different results, that there was no effect of media exposure on carbon emission disclosures. The difference in the results of previous studies is the background for the need for more in-depth research on carbon emission disclosure research. This research is development research from several previous research results by presenting the independent variables of environmental performance, regulator, and media exposure. The difference between this research and previous research is that it presents a moderating variable of institutional ownership. Through institutional ownership, it will pressure the company to provide information about the company to meet the needs of investors and carry out stricter supervision of company activities, thus encouraging companies to apply the principle of transparency by conducting carbon emission disclosures (Amaliyah and Solikhah 2019). Institutional investors are the main oversight instrument as part of external corporate governance, which plays a key role in strengthening the environmental activities of listed companies including carbon emission disclosure activities (Kordsachia *et al.* 2022).

1.2. Theoritical Background and Hypothesis Development

Legitimacy theory states that the level of disclosure is a product of the company's exposure to public pressure from stakeholder groups in the social, political, and regulatory environment (Datt *et al.* 2019). Companies with good carbon performance have incentives to convince stakeholders that the company has acted in good faith, and voluntary carbon disclosure can be a medium to gain stakeholder legitimacy (Patten 2002). Legitimacy theory encourages companies to ensure that their activities and performance are socially acceptable. Companies can use annual reports to describe a sense of responsibility towards the environment, in line with community acceptance (Abdullah *et al.* 2020). By building a positive image to the community, it is hoped that the company's reputation will grow and improve the company's performance.

Friedman (1970) in an article entitled "The Social Responsibility of Business Is to Increase Its Profits" suggests that companies are socially responsible to stockholders (shareholders) so that the goal of the company is to maximize profits as a return on capital to shareholders who play a role as parties involved in the interests of the company or commonly called stakeholders. Stakeholder theory is useful as an explanation of the relationship

between the community and the company, where the company is required to think about the interests of each party around it, both the community and other parties who can be affected by the impact of actions caused by company policies (Anggraeni 2017). The purpose of the stakeholder theory is to provide an overview to management that what stakeholders need is not only focused on profits but also balanced with environmental and social disclosures that make companies take actions related to environmental management around them. For now, various interested parties such as investors, customers, government, and the public who are aware of climate change will encourage, directly and indirectly, companies to carry out environmental disclosures (Depoers *et al.* 2016). Therefore, it is expected that the company can meet the needs of stakeholders by showing concern for the environment through disclosure in the annual report and sustainability report. In the end, stakeholder theory explains the causal relationship between stakeholders and the company.

Companies are often seen as organizations associated with environmental issues. The company's operational activities that use nearby energy sources can be the cause of several environmental problems, such as improper waste management or excessive release of carbon emissions, causing climate change. This is the reason for the company to contribute to preserving the environment in order to get a positive response from the public. The higher the company's level of concern for the environment indicates that the company is more responsive to the environment, especially regarding the disclosure of carbon emissions. Environmental performance is present as a form of corporate morale to be responsible for the preservation of the surrounding environment (Krisnawanto & Solikhah 2019). Therefore, environmental performance is an alternative solution to determine the company's level of concern for the environment so that it can be used as a means of information to other stakeholders. Based on the description above, environmental performance is a reflection of the company's actions in an effort to protect the environment and meet the needs of stakeholders in providing information related to environmental disclosure to gain legitimacy from the public, as stated by Krisnawanto & Solikhah (2019; Putri *et al.* (2020); Widianto & Sari (2020) through their research which proves that companies that have good environmental performance can present their performance information in the form of environmental disclosures so that it will positively affect the process of disclosing carbon emissions.

H1: Environmental Performance has a positive effect on Carbon Emission Disclosure

A stakeholder is any party who has an important role in making decisions related to policies that will be implemented by managers. In addition, the company is also obliged to be socially and environmentally responsible as a form of its efforts to gain legitimacy from stakeholders. Stakeholders consist of several parties such as shareholders, investors, the community, and the government. The government as a regulator is also part of the stakeholders who have the authority to encourage companies through regulations and policies related to company activities that have a negative impact on the environment. This is in accordance with stakeholder theory which suggests related to company and stakeholder relationships where companies are not only profit-oriented but are required to consider the interests of all parties both to the government and other parties for actions resulting from company policies (Anggraeni 2017). Governments that have high awareness of environmental problems tend to pressure companies to be more responsible for their operational activities that can cause pollution (Pratiwi 2017). The government's role as a regulator will encourage companies to disclose information through implemented strategies and policies. One form of government policy related to the environment is contained in Law no. 32 which states that all parties who run businesses and/or business activities are obligated to care for and preserve the environment (Krisnawanto & Solikhah 2019). Peng *et al.* (2015) in their research stated that the encouragement from the regulator is the main factor that makes companies care about their environment to carry out carbon disclosures. This is as stated by Hermawan *et al.* (2018); Pratiwi (2018) which show that the government has the power to encourage every company to be responsible in terms of reporting carbon emissions, thus giving rise to allegations that companies that are under pressure from the government will try to disclose information related to carbon. Emission disclosure is a form of responsibility in the social and environmental fields.

H2: Regulator has a positive effect on Carbon Emission Disclosure

Media is defined as a means of communication by certain parties to provide information systematically to the public. The media has an important role in influencing the activities and mobility of the community, such as in certain groups who are interested in the environment, then these groups will try to disseminate information related to the environment. Dissemination of information with the media is considered to have the potential to encourage an increase in the company's image for the public (Nur & Priantinah, 2012). The company as a party highlighted by the media will strive to maintain its good name and reputation through positive news presented by the media.

Although not all information can be disclosed by the company, this can be an opportunity for the media to be more active in supervising company activities related to environmental issues for the public interest so that companies can disclose their activities, especially regarding carbon emission disclosures. In stakeholder theory, it is argued that the company's existence as a partner is not only intended for its own interests, but also to benefit stakeholders (Jannah & Muid 2014). The information conveyed by the media becomes part of the information communicated to the public, so that it can determine public attitudes and influence stakeholder decisions related to the company's operational activities (Septriyawati & Anisah 2019). Media exposure has a major role in encouraging companies to publish their operational activities, especially those related to social and environmental aspects as a form of the company's concern for reducing carbon emissions. This statement is also in accordance with research from Agung Ulupui *et al.* (2020); Ulfa & Ermaya (2019); Winarsih & Supandi (2020) which showed a significant influence between media exposure and carbon emission disclosures.

H3: Media Exposure has a positive effect on Carbon Emission Disclosure

Institutional ownership is the ownership of a company whose shares are owned by certain institutions or institutions such as banks, insurance, and others. The relationship between institutional ownership and carbon emission disclosures can be seen from the positive side where institutional ownership is considered to be able to minimize agency conflicts that occur between managers and stakeholders through effective control in determining decisions taken by managers. The main role of institutional ownership is the management and supervision of managers to encourage more optimal performance improvements in the company (Krisnawanto & Solikhah, 2019). The greater the ownership of shares by institutions in a company, the greater the control and supervision carried out by the management to improve company performance, especially those related to environmental performance. In stakeholder theory, it also explains the relationship between companies and stakeholders (Depoers *et al.* 2016). This requires management to apply the principle of transparency to stakeholders for all company operational activities, especially in terms of disclosure of carbon emissions. The research conducted by Saptiwi (2019); Widianto & Sari (2020) showed a positive relationship between environmental performance and carbon emission disclosure, while the research conducted by Agung Ulupui *et al.* (2020); Solikhah *et al.* (2021) stated there is no an influence between environmental performance on carbon emission disclosures. To strengthen the relationship between the two variables, a moderating variable is given, namely institutional ownership. This is in accordance with Pratiwi (2018) which explains that institutional ownership is able to increase optimal supervision of management so that it can improve performance and conduct carbon emission disclosures.

H4: Institutional Ownership moderates the effect of Environmental Performance on Carbon Emission Disclosure

Regulators are one of the roles of the government to balance community activities through regulations and create policy strategies that can be useful for people's lives, especially in the economic field. The government includes actors whose duties are as regulators of the course of economic activity, providing service facilities, implementing economic policies to protect the public interest, and supervising every policy made by other economic actors. Therefore, the government is also considered as a stakeholder for the company. The roles of government and institutional ownership have in common, namely as stakeholders who can oversee the company's operational activities and influence managers in making decisions related to company policies. In stakeholder theory, companies have relationships with stakeholders to meet the needs of their stakeholders, so that in carrying out operational activities, companies can be controlled by stakeholders, especially those related to company disclosure (Prafitri & Zulaikha, 2016). The relationship between regulators and carbon emission disclosures is closely related because the government is the party who holds the highest power to formulate policies, especially those related to environmental problems, so that it will pressure companies to carry out their obligations. Peng *et al.* (2015) also stated that pressure from regulators is one of the main factors for companies to make disclosures. Through pressure from regulators, which is strengthened by supervision from institutional ownership, it is hoped that it will be able to encourage companies to be more open in providing information related to carbon emission disclosures. Research conducted by Hermawan *et al.* (2018); Pratiwi (2018) shows a positive influence between regulators and carbon emission disclosures, in contrast to research conducted by Herdiawan & Dewi (2020) which shows a negative effect between the two variables. Through the role of institutional ownership, it is suspected that it can increase the influence of regulators on carbon emission disclosures.

H5: Institutional Ownership moderates the influence between Regulators on Carbon Emission Disclosure

Media is a party whose role is to provide information about a matter to the public or certain parties. As a means of communication, media exposure can influence the public's view of matters relating to the information, especially regarding certain issues such as environmental issues. Likewise, company activities often cause environmental problems. In this case, media exposure plays an important role in disseminating information about the company's activities to the public, so companies must be wary of the media to maintain their company's reputation (Ulfa & Ermaya 2019). Stakeholder theory also states that the company's existence as a partner is not only for its own sake but also to provide benefits to stakeholders (Jannah & Muid 2014). So that the company will strive to maintain its reputation for the benefit of stakeholders. Information provided by the media is considered capable of influencing stakeholder decisions because stakeholders can find out the condition of the company through published information. In this regard, the supervision carried out by institutional ownership will improve the company's performance so that management is also more open about company information including carbon emission disclosures. This can be an opportunity for the company to spread positive information about the company in order to gain legitimacy from stakeholders. This is in accordance with the research of Agung Ulupui *et al.* (2020); Ulfa & Ermaya (2019) which showed a positive effect between media exposure and carbon emission disclosure, in contrast to the research by Laksani *et al.* (2020) which showed a negative effect between media exposure and carbon emission disclosure. With institutional ownership, it is suspected that it can strengthen the influence of media exposure on carbon emission disclosures.

H6: Institutional Ownership moderates the effect of Media Exposure on Carbon Emission Disclosure

2. Methodology

2.1. Sample

The research sample is all mining companies as well as basic and chemical industries listed on the Indonesia Stock Exchange (IDX) in 2018-2020 which are determined using a purposive sampling technique with the condition that they meet the criteria as a sample (1) are listed consecutively on the exchange during the observation period; (2) report a complete annual report; (3) all data available for research variables. Based on the identification results, the unit of analysis that meets the criteria as the research sample is 57 companies.

2.2. Variable Measurement

Carbon emission disclosure, which is the disclosure of information about the environment, especially those related to carbon emissions and attached to the annual report and sustainability report, is determined as the dependent variable in this research. As for the measurement indicators, it refers to the 18 indicators developed by Bae Choi *et al.* (2013) which are adjusted to the information request sheet from the Carbon Disclosure Project (CDP). The CDP measurement index consists of five categories, namely climate change: risks and opportunities, accounting for greenhouse gas emissions, energy consumption, costs and reductions in greenhouse gas emissions, and accountability for carbon emissions.

Environmental performance is the independent variable in this research. Environmental performance is proxied through a program held by the Ministry of the Environment, which is useful in improving the company's environmental performance and complying with any legislation related to environmental sustainability. PROPER is categorized into 5 types of ratings, namely gold, green, blue, red, and black ratings. The highest rank is gold which indicates very good company performance, while the lowest rank is black which indicates very poor company performance. This research uses a measurement scale of 1-5 based on the type of PROPER rating.

The proxy used on the regulator variable is by using a dummy variable through grouping between state-owned and private companies. If the type of company is included in a state-owned company, it gets a score of 1 and a private company gets a score of 0. The use of this proxy is based on empirical evidence that has been documented from developing countries that compared to private companies, state-owned enterprises (BUMN) are more sensitive to regulatory pressure so that they are often act as a pioneer in implementing carbon emission disclosures (Peng *et al.* 2015). This measurement also aims to find out how much pressure is given by regulators to state-owned and private companies in implementing carbon emission disclosures. The measurement of media exposure in this research was carried out through a checklist item in the Carbon Disclosure Project, which Bae Choi *et al.* (2013) had previously developed. The media exposure variable is measured using online media such as company-owned websites and news published on online media sites such as Kompas.com, Detik.com, Tribunnews, and other sites. Measurement of media exposure variables is done by analyzing news content related to environmental disclosures that have been published by the media. Technically, the measurement is (1) to score all checklist items in accordance with disclosures related to carbon emissions; (2) all items get a score of

1, when the relevant media discloses all news items presented, so the company will get a score of 18. If it does not disclose then the score is 0; (3) the score results will be added up and divided by the maximum score (18 indicators). This measurement is carried out to find out how much the company's responsibility to the environment is through media publications.

Data analysis This analysis is used to find out how much influence the moderating variable has in strengthening or weakening the relationship between the independent variable and the dependent variable. This research applies hypothesis testing through moderate regression, which requires additional tests which are often referred to as classical assumption tests (Wahyudin, 2015). The moderation regression equation model used in this research is as follows:

$$CED = \alpha + \beta 1ENV + \beta 2REG + \beta 3MED + \beta 4ENV*INST + \beta 5REG*INST + \beta 6MED*INST + e$$

Note:

α	: Constant
β1- β6	: Regression coefficient
CED	: Carbon Emission Disclosure
ENV	: Environmental Performance
REG	: Regulator
MED	: Exposure Media
ENV*INST	: Interaction between Environmental Performance and Institutional Ownership
REG*INST	: Interaction between Regulators and Institutional Ownership
MED*INST	: Interaction between Media Exposure and Institutional Ownership
e	: Error

3. Result and Discussion

3.1. Descriptive Statistics

The descriptive test results show that the variables of carbon emission disclosure, environmental performance, media exposure, and institutional ownership have a mean value of more than the standard deviation, so that the distribution of data on these variables is homogeneous. This shows that the data on each variable does not have a large data deviation. Meanwhile, the average value of the regulatory variable is smaller than the standard deviation so that the distribution of the data on the variable is heterogeneous.

Carbon emission disclosure is the dependent variable which is measured through the carbon disclosure project with a total of 18 items. Table 1 shows that the variable carbon emission disclosure has a distribution between 0.06 to 0.94. The minimum value of carbon emission disclosure is 0.06 from the 3 analytical units of the company, while the highest value (maximum) is 0.94 which is owned by 2 analytical units. The average value of disclosure is 0.454 with a standard deviation of 0.286 or explains that companies tend to disclose carbon emissions by 45% or about 7 to 9 items with a total of 18 disclosure items. There are 30 companies or 52.6% that disclose below the average value. Meanwhile, the number of units that reported above the average were 27 or 47.4% of the total research sample. Thus, it can be concluded that there are still many companies that do not fully disclose their carbon emissions.

Environmental performance has an average value of 3.38 and a standard deviation of 0.67. With an average value that is greater than the standard deviation value, it shows that the environmental performance variable data is not much different or can be interpreted quite well. The total units of analysis that have a value below the average are 39 units of analysis or 68.4%, then for units of analysis that have a value above the average are 18 companies or 31.6%. From these data, it can be interpreted that companies tend to get a blue rating on PROPER so that the environmental performance applied by the company is considered quite good. Based on Table 1, it is found that the average value for the regulatory variable is 0.21 and the standard deviation is 0.41. The number of analysis units with BUMS status is 45 or about 78.9% of the total sample, and analysis units with BUMN status are 12 or around 21.1%. This shows that most of the ownership of mining companies, basic industries and chemicals in Indonesia is controlled by the private sector.

Based on the contents of Table 1, the media exposure is distributed in the range of 0.06 to 0.33, with the lowest value being 0.06 out of 7 units of analysis. The unit of analysis that publishes mass media is below the average score of 22 or 38.6% of the total sample. As for the number of units of analysis that have a value above the average, namely 35 units or 61.4%. This shows that companies tend to disclose carbon emissions through media exposure which ranges from 4 to 6 items from the total total items disclosed.

Table 1. Results of Descriptive Statistical Analysis

	Min	Max	Mean	Std. Deviation
ENV	2.00	5.00	3.3860	.67492
REG	.00	1.00	.2105	.41131
MED	.06	.33	.1647	.07347
INST	.4801	.9998	.858631	.1375459
CED	.06	.94	.4542	.28621

Source: Secondary data processed, 2022

Table 1 shows that institutional ownership has a distribution with a range between 0.4801 to 0.9998. The institutional ownership variable has an average value of 0.8586 and a standard deviation of 0.1375. The number of units of analysis with an institutional ownership level below the company average is generally 21 units of analysis or 36.8%, then the number of units of analysis above the average is 36 units or 63.2% of the total. The results of the analysis show that companies tend to load shares for institutions with a higher number than other types of shares.

3.2. Hyphotesis Testing Result

Before testing the hypothesis, the classical assumption is first tested. The results of the normality test with the Kolmogorov-Smirnov test showed a value of 0.112 with an asymp.sig (2-tailed) value of 0.075 which indicates that the value is above 0.05 so it can be interpreted that the residual data is normally distributed. The multicollinearity test showed that there was no correlation between the independent variables, because there was no variable with a tolerance value below 0.10. In addition, the VIF value in the test results shows that the independent variables do not find multicollinearity in the regression model, because the VIF value is above 1 and below 10. The Durbin Watson value of 2.148 is above the dU limit of 1.7253 and below (4- dU) or 2.2747, so it can be concluded that there is no autocorrelation between periods in the regression model. Based on the results of the heteroscedasticity test using the Glejser test, the significance value of the environmental performance (ENV), regulator (REG) variables, media exposure (MED), and institutional ownership has been above a significance value of 0.05 so that the conclusion that can be drawn is that in the regression model There were no signs of heteroscedasticity. The next step is to test the hypothesis. The value of Adjusted R square in the regression equation is 0.555, so it can be interpreted that 55.5% of the independent variables can explain the variation of the dependent variable. This means that environmental performance variables, regulators, media exposure and institutional ownership as moderating variables can explain 55.5% of carbon emissions' disclosures, while the remaining 44.5% is explained by other variables not included in this research.

Table 2. Moderation Regression Test Results

Variable	B	t	Sign.	Hyphotesis	Adj R^2
(Constant)	.285	4.899	.000		
ENV	.117	3.212	.002	Accepted	.555
REG	-.003	-.067	.947	Rejected	
MED	.080	2.777	.008	Accepted	
INST	.003	.116	.908	Rejected	
Moderating Effects of Institutional Ownership:					
ENV*INST	-.062	-1.448	.154	Rejected	
REG*INST	.155	3.397	.001	Accepted	
MED*INST	.049	1.237	.222	Rejected	

Source: SPSS Output, 2022

Based on the results from Table 2, the moderating regression equation model is as follows:

CED = 0,285 + 0,117ENV – 0,003REG + 0,080MED – 0.062ENV*INST + 0,155REG*INST + 0,049MED*INST + e

3.3. Discussions

Effect of Environmental Performance on Disclosure of Carbon Emissions

The results of this study prove that environmental performance has a significant positive effect on the disclosure of carbon emissions. This supports the stakeholder theory which states that companies are socially responsible to stakeholders. Environmental performance is a performance that is described as a moral form to be responsible for the preservation of the surrounding environment (Krisnawanto & Solikhah 2019). Through the PROPER program the company tries to perform best in the surrounding environment. So that the management will try to

make the company's performance always increase from the previous year. This is an impetus for companies to manage the environment as a concern for the environment as well as a means of information to stakeholders. The better the environmental performance applied, the higher the rating obtained. Therefore, environmental performance can be a reflection as an effort to preserve the environment and meet the needs of stakeholders in matters relating to the information environment (Peters Romi 2011). Datt *et al.* (2019) in his research found that carbon performance has a positive effect on owning carbon, companies that produce both carbon emissions are less so are more likely to disclose more carbon information in the Carbon Disclosure Project (CDP) report to avoid biases that are detrimental to uninformed investors. Good environmental performance is significantly associated with good economic performance and is also linked to the wider environmental performance (Al-Tuwaijri *et al.* 2004; Iatridis 2013).

Regulator's Effect on Carbon Emission Disclosure

The results obtained in this study indicate that there is no influence between regulators on carbon emission disclosures. The results of this study do not support the stakeholder theory which states that the company does not become an entity that runs its operations for its own sake but must also be useful for stakeholders (stakeholders). The regulator is one of the stakeholders who has the authority to pressure the company through regulations and policies regarding the company's operational activities that have a negative impact on the environment. Companies with private status have the right to regulate and manage the company's internal policies without interference from the government, in this case the government is only authorized to apply regulations and act decisively against companies that cause broad negative impacts. This condition allows companies to be free from the obligation to disclose information, especially those related to carbon emissions. In practice, the government as a regulator has not implemented regulations that require companies to make carbon emission disclosures so that disclosure is still voluntary.

Effect of Media Exposure on Carbon Emission Disclosure

The results of this study prove that media exposure has a significant positive effect on carbon emission disclosures. This supports the stakeholder theory which states that companies are socially responsible to stakeholders. Media exposure plays an important role in responding to company policies related to the environment through published news, so that it can encourage companies to expand information on carbon emission disclosures in annual reports and sustainability reports. The company as a business actor is obliged to provide information related to its operational activities, including other matters concerning the interests of the wider community and stakeholders. The information submitted to the public aims to maintain the company's reputation and obtain a positive response from stakeholders and the public. Public attitudes towards the company can also be influenced by the news presented by the media so that it can influence the decisions of stakeholders (Septriyawati & Anisah 2019). The more active the role of the media in supervising the company's activities, it will encourage companies to disclose information, especially those related to the disclosure of carbon emissions.

The Role of Institutional Ownership in Moderating the Effect of Environmental Performance on Carbon Emission Disclosure

The results of hypothesis testing in Table 2 show that the significance value is above 0.05, which means that institutional ownership cannot strengthen the influence of environmental performance on carbon emission disclosures. This study does not support the stakeholder theory, because institutional ownership which acts as the party that oversees the company has not provided optimal supervision of management actions in terms of carbon emission disclosures. These findings are assumed because institutional ownership encourages management to focus on other company performance such as financial performance which is considered to have a direct impact on profits so that pressure from institutional ownership on carbon emission disclosures is not a top priority for companies. This is contrary to the research of Kordsachia *et al.* (2022) who found that the preferences and influence of institutional investors are not only related to financial performance but also to environmental performance, the relevant shareholder groups in the capital market play a key role in strengthening the environmental activities of companies listed on the European Exchange. Because they have large voting rights and the ability to obtain information from management, institutional investors can easily exercise active oversight and encourage environmental performance improvements (Calza *et al.* 2016; Pagano & Volpin 2005).

The Role of Institutional Ownership in Moderating the Effect of Regulators on Carbon Emission Disclosure

The results of this study prove the influence of institutional ownership in strengthening the influence of regulators on carbon emission disclosures. Referring to stakeholder theory, companies have relationships with stakeholders to meet the needs of their stakeholders, so that in carrying out operational activities, companies can be controlled by stakeholders, especially those related to company disclosure (Prafitri & Zulaikha 2016). In addition, the roles of government and institutional ownership have in common, namely as stakeholders so that they can oversee the company's operational activities and influence managers in making decisions related to company policies, including disclosures related to the environment. Based on the results of the frequency distribution of regulators, the sample in this study is included in the category of privately owned companies, which is 78.9%, while the results of the frequency distribution of institutional ownership are 63.2% and quite high. The results of the study that mention institutional ownership can strengthen the impact of regulators on carbon emission disclosures are assumed because the pressure exerted by regulators on institutional shareholders and high supervision from institutional ownership can encourage management to be more open in providing information regarding carbon emission disclosures.

The Role of Institutional Ownership in Moderating the Effect of Media Exposure on Carbon Emission Disclosure

The results obtained in this study, found that institutional ownership can moderate the effect of media exposure on carbon emission disclosures. The results of this study are in accordance with the research conducted by Krisnawanto & Solikhah (2019) which showed that institutional ownership was not able to moderate the effect of media exposure on carbon emission disclosures. This is also supported by the results of a study conducted by Deegan (2002) which found that in some industries, environmental disclosure is not associated with positive or negative news spread by the media. The results of this study are assumed because institutional shareholders do not give more pressure and support to management to respond to news related to environmental issues published by the media, so that it has an impact on management's low enthusiasm to expand information on environmental disclosure through media exposure, especially in terms of carbon emissions disclosure. The results of this study also indicate that media exposure has not been able to provide awareness to shareholders regarding environmental problems.

Conclusion

Based on the research results, the factors that are proven to influence carbon emission disclosures are environmental performance and media exposure. Meanwhile, the regulator has not been proven to affect carbon emission disclosures. Institutional ownership can strengthen the influence of regulators on carbon emission disclosures but is unable to moderate the influence of environmental performance and media exposure. For further research, it is recommended to add other variables that can affect carbon emission disclosure by using different proxies and adding an observation period to get more accurate results and can represent the extent to which carbon emission disclosures are made.

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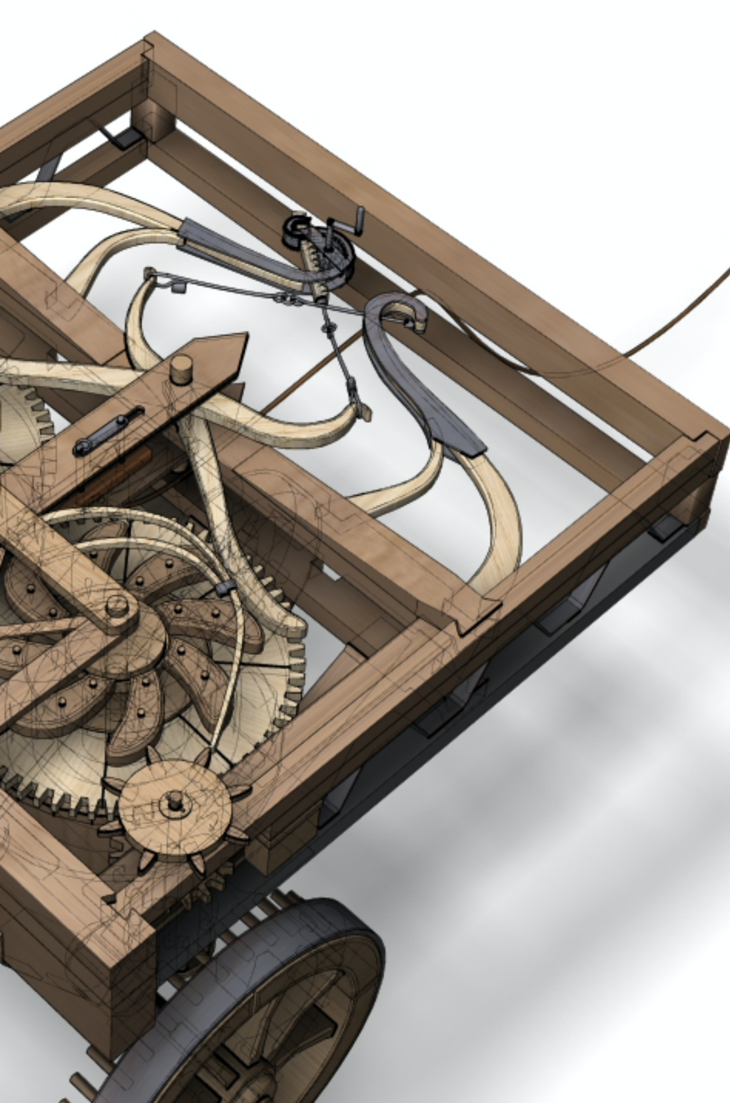

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