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Original Article

The Impact of Environmental Performance, Corporate Governance, and Financial Performance on the Disclosure of Carbon Emissions

Siti Asiah Murni [1,*], Teguh Wijayanto [1] and Nur Fajrih Asyik [1]

[1] Doctoral Program in Management Science, School of Economics of Indonesia (STIESIA), Surabaya 60118, Indonesia; teguhwijayanto21@gmail.com (T.W.), nurfadjrih@stiesia.ac.id (N.F.A.)
* Correspondence: sitiasiahmurni@gmail.com (S.A.M.)

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Abstract: One of the primary contributors to global climate change that may threaten human survival is carbon emissions. As a result, businesses must consider how their actions including carbon emissions affect the environment. Carbon emissions are one of the main causes of global climate change, which can endanger human survival. Therefore, companies need to pay attention to the impact of their activities on the environment, including carbon emissions. Disclosure of carbon emissions by companies is becoming increasingly important because it can affect the company's image in the eyes of the public and investors. The study aims to analyze the impact of environmental performance, corporate governance, and financial performance on the disclosure of carbon emissions by manufacturing companies listed on the Indonesian Stock Exchange for the period 2020–2022. This research uses purposive sampling. The research data obtained came from the Indonesian Stock Exchange and the company's website, and data analysis techniques were used using regression analysis. The results of this study showed that environmental performance and financial performance affected carbon disclosure, while corporate governance variables did not affect carbon emissions.

Keywords: Environmental performance; Corporate governance; Financial performance; Carbon Emissions Disclosure

1. Introduction

The issue of climate change has led to increased implementation of national and international climate change mitigation policies, as well as mandatory processes and low-carbon product standards (Liu et al., 2023). Carbon emissions are one of the main causes of global climate change, which can endanger human survival. Therefore, companies need to pay attention to the impact of their activities on the environment, including carbon emissions. Disclosure of carbon emissions by companies is becoming increasingly important because it can affect the company's image in the eyes of the public and investors. Apart from that, disclosing carbon emissions can also be a consideration in making investment decisions; however, there are still many companies that have not disclosed their carbon emissions transparently. This can be caused by several factors, such as poor corporate environmental performance, a lack of good corporate governance, low profitability, and high corporate leverage.

Presidential Regulation (PP) Number 61 of 2011 concerning the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK), which allows the government to expand sectorial policies and possibly reduce carbon emission levels, is followed by Presidential Regulation Number 71 of 2011 and Presidential Regulation Number 82 of 2011, which regulates the implementation of the National Greenhouse Gas Inventory. The government sets rules on carbon emissions that allow companies to reduce their emissions through disclosure on carbon disclosure project (CDP) questionnaires, but it is still voluntary. The Ministry of the Environment created a program called the Company Performance Assessment Program (PROPER) to help companies achieve RAN-GRK targets. This program aims to increase the company's sense of concern for the environment. One important factor in a company's efforts to preserve the environment is its environmental performance. According to Saputra, (2020), environmental performance is a company's performance that can create a good environment. If industries do so, they will be more likely to disclose environmental problems, including carbon emissions (Eka Dewayani & Ratnadi, 2021). Disclosure of carbon emissions can legitimize various initiatives carried out by companies to obtain good ratings. According to Pradini & Kiswara, (2013), industries that disclose carbon emissions data create the basis for maintaining legitimacy, protecting company reputation, obtaining a good image, and participating voluntarily in sustainability programs. A company's image value is very much needed when information is provided transparently and with accountability to stakeholders. This is the basis for the company to remain committed to environmental disclosure.

Studies on corporate social responsibility (CSR) disclosure have shown that (pro) companies actively disclose their CSR information to improve information asymmetry between managers and stakeholders (Al-Tuwaijri et al., 2004); (Griffin et al., 2017); (Liesen et al., 2017); (Matsumura et al., 2014), benefiting from lower costs of equity (Albarrak et al., 2019); (Dhaliwal et al., 2014) and more accurate analyst estimates (Schreck, 2013). However, companies, especially those with poor environmental performance, are more likely to make environmental disclosures to reactively respond to social pressure (Cho & Patten, 2007); (Clarke & Gibson-Sweet, 1999); (Gray et al., 1995); (Patten, 1992) and avoid economic penalties (Matsumura et al., 2014). Consequently, disclosure is a fundamental tool for bad environmental actors to maintain organizational legitimacy (Pfeffer & Salancik, 2015) and is recognized as one of the key value-protecting CSR strategies, which is important but under-researched. Different from previous research (Al-Tuwaijri et al., 2004); (Liesen et al., 2017); (Matsumura et al., 2014), which has considered the interaction of environmental performance, environmental disclosure, and organizational performance, this research offers a further step to examine the mediating role of carbon disclosure. "The higher the company's profitability reflects the availability of funds to disclose carbon emissions" (Herinda et al., 2021). Apart from profitability, leverage is defined as the company's debt level. If the company's leverage is higher, the company cannot declare its carbon emissions to be higher (Herinda et al., 2021).

Previous studies regarding the implications of carbon emissions on company performance have provided inconclusive results. For example, with a sample of Standard & Poor's (S&P) 500 companies (Griffin et al., 2017), A company's disclosure is usually decoupled from its environmental performance (Bowen, 2014); (Cho & Patten, 2007); (Kim & Lyon, 2011); (Patten, 1992) and symbolically conforms to institutional regulatory policies and stakeholder pressures without necessarily improving its actual environmental performance (Haque et al., 2016). (Bae Choi et al., 2013)found an assessment of carbon emissions disclosure, and (Julianto & Sjarief, 2016) found that environmental performance influences carbon emissions disclosure; however, (Julianto & Sjarief, 2016) study shows that environmental performance has no impact. According to Kılıç & Kuzey, (2019), the board of commissioners and independent commissioners conducting research in Turkey were not affected. The board of commissioners and independent board of commissioners influence carbon emissions disclosure, but this is contrary to research by Zahra et al., (2020). Furthermore, (Herinda et al., 2021)found that carbon emission disclosure is influenced by profitability. In contrast, (Dewayani & Ratnadi, 2021) and (Julianto & Sjarief, 2016) show that profitability does not affect carbon emissions disclosure. (Kusumadewi & Karyono, 2019) and (Wiratno & Muaziz, 2020) revealed the influence of leverage on carbon emissions disclosure, whereas according to (Herinda et al., 2021)there was no influence on carbon emissions disclosure. From the explanation above, the aim of this research is to examine and analyze environmental performance, corporate governance, and financial performance as peroxide by profitability and leverage on carbon emissions disclosure. The assumption that is the basis of the research is that this company carries out more company operational activities, so it tends to produce more carbon emissions and exploit nature.

2. Literature Review

2.1. Underlying Theory

Stakeholder Theory Industrial stakeholder theory considers the interests of stakeholders to obtain benefits rather than the industry alone (Herinda et al., 2021). Stakeholders are all people involved in the industry so that they can influence industrial activities (Az'mi, 2015). These stakeholders consist of many parties, including suppliers, communities, self-help communities, the government, and public interest groups. In short, stakeholders can influence the sustainability and existence of a company. One alternative for managing company relationships with stakeholders is environmental disclosure and awareness (Cahya, 2017). Disclosure will enable the company to meet stakeholder needs and maintain harmony between the company and stakeholders.

Legitimacy Theory Perceptions related to the social contract implemented by the company towards the surrounding community are called legitimacy theories (Nazli Nik Ahmad & Sulaiman, 2004). The legitimacy theory to be used is not far from disclosing carbon emissions. Legitimacy can be obtained if there is a match between the existence of the company and the existence of the value system in society and the environment (Deegan et al., 2000). Companies exist because of this, and society knows that companies use a different value system than society's existing system. The difference between the value system of the company and society puts the company in an insecure position regarding corporate legitimacy. Companies provide information in order to run the capital markets as efficiently as possible (Rankin et al., 2011). A company's voluntary statement of carbon emissions connected to emissions emitted during social and environmental operations is known as the disclosure of carbon emissions. If the business provides this information, it may indicate that it is a serious player in environmental sustainability.

Environmental Performance or environmental performance is the degree to which a business preserves the environment. The Ministry of the Environment created the Company Performance Rating and Environmental Management (PROPER) Assessment Program, which assesses a company's environmental performance and compares it with other organizations in terms of the company's participation in environmental preservation (Haholongan, 2016). The PROPER rating system in businesses assigns a score, with gold indicators worth 5, green indicators worth 4, blue indicators worth 3, red indicators worth 2, and black indicators worth 1. In legitimacy theory, every industry carries out environmental performance to preserve the environment. A company can explain how its environmental performance is good. As pointed out by Clarkson et al., (2008); (Dawkins, 2012), and (Matsumura et al., 2014), disclosure of carbon emissions is carried out widely. As a result, its environmental performance improves, so the hypothesis is:

2.2. Environmental Performance Influences Carbon Emission Disclosure

Corporate governance has a considerable influence on the development of a company's capacity to create a more optimal alternative selection system, optimize the value of the company, optimize the confidence of investors, and raise the added value of shareholders and dividends at the same time (Arafat, 2008). A corporate governance mechanism is a policy that regulates the continuity between the decision-maker and the party with the authority to control such decisions to establish a corporate government that can provide a variety of benefits to the company. Corporate governance mechanisms can be the arrangement of the parties that have a link with the decisions taken, the authority of the shareholders in obtaining their rights, or the parties of creditors and employees in exercising their rights and obligations so that a company governance system can be formed that is qualified and free from conflict between the parties involved (Walsh & Seward, 1990); (Rahim, 2008) a company's governance policies have the power to affect how its stakeholders view and behave toward it, which may have an impact on the company's financial performance. It has been shown that managers are prepared to contribute to CSR initiatives in order to improve and preserve their organizations' reputations (Barnea & Rubin, 2010).

CEOs engage in CSR to improve economic performance, fortify their positions within the organization, and win over more stakeholders, according to Gong & Ho, (2021); (Klettner et al., 2014) claim that corporate governance has an impact on outcomes that both financial and non-financial. In this study, corporate governance was measured by the councils of commissioners and the council of independent commissioners. The board of commissioners is responsible for developing sustainable business strategies, monitoring the use of company assets more carefully (Jizi et al., 2014), and ensuring an optimal level of environmental risk monitoring (Ben-Amar et al., 2017). Therefore, the number of boards of commissioners is very important for disclosure to increase company value. There are not many studies that focus on the size of the board of commissioners for carbon emissions disclosure. One example is research conducted by Liao et al., (2015) and Yunus, (2016), who found a significant and favorable relationship between the board of commissioners and carbon emissions disclosure, so the hypothesis is as follows:

2.3. The Board of Commissioners influences carbon emissions disclosure

Legitimacy theory explains that carrying out various factory activities does not escape the applicable community rules (Amaliyah & Solikhah, 2019). Independent commissioners can create an effective management structure to disclose information to stakeholders, such as carbon emissions disclosure (Amaliyah & Solikhah, 2019) Because external directors have lower pressure than internal directors in stakeholder theory, independent boards have a relationship with sustainability reports (Hussain et al., 2018). Previous research shows that an independent board can improve carbon emissions disclosure (Liao et al., 2015); (Yunus, 2016), so the following hypothesis:

2.4. The Independent Board of Commissioners influences carbon emissions disclosure.

The profitability ratio is a measure of the ability of corporate decision-makers to obtain a rate of profit both in the form of company profits as well as the economic value of sales, net assets of the company, and equity (Putra, 2009). Higher industrial profitability will enable the disclosure of carbon emissions (Brammer & Pavelin, 2008). This legitimacy theory suggests that if corporate profitability is high, management can meet stakeholder demands for the legitimacy of environmental management. High corporate profits will enable expenditures related to corporate environmental performance. According to Cahya, (2017) and (Jannah & Muid, 2014), there is an influence between profitability and carbon disclosure, so the hypothesis is as follows:

2.5. Profitability affects the disclosure of carbon emissions.

The theory of stakeholders in this leverage emphasizes that companies should prioritize debt discharge rather than disclose carbon emissions because it can raise costs (Liao et al., 2015). The existence of leverage values can have an impact on the disclosure of carbon emissions, as a large debt can hinder the implementation of carbon disclosures (Wiratno & Muaziz, 2020) and (Koeswandini & Kusumadewi, 2019) helps with this.

3. Materials and Methods

Sample this research uses non-financial companies listed on the Indonesia Stock Exchange during the 2020–2022 period as the population. As a data collection method, purposive sampling was used to determine the sample size for this study. The sample criteria for the research are (i) Nonfinancial companies listed on the Indonesia Stock Exchange during the 2020–2022 period; (ii) Nonfinancial companies that publish sustainability reporting during the 2020–2022 period on the company website and on the Indonesian Stock Exchange and (iii) During the observation year, non-financial companies were given the proper colors blue, green, and gold because these colors can indicate the value of the company's good environmental performance. This is the PROPER assessment of the Ministry of Environment, where the colors gold, green, and blue indicate good value, with the best value being gold and the colors red and black being the worst value (environment-indonesia.com). The total sample in the research was 33 companies during 3 years of observation.

The dependent variable (Y) applies the (Bae Choi et al., 2013) index, with data results coming from sustainability reporting. The index consists of 5 categories that are equated to conditions of climate change and carbon emissions, namely risks and opportunities of climate change (CC/Climate Change), greenhouse gas emissions (GHG/Greenhouse Gas), energy consumption (EC/Energy Consumption), reduction greenhouse gases and costs (RC/Reduction and Cost), as well as accountability for carbon emissions (AEC/Accountability of Emission Carbon), totaling 18 points for each category using a checklist system. There are five independent variables, including environmental performance, board of commissioners, independent commissioners, profitability, and leverage. The collection procedure is to collect information in the form of archives or documents that are disclosed, and the information is reliable. Information can be scanned through website media, science blogs, and research review reports. Information on company annual reports and company sustainability reports is listed on the Indonesia Stock Exchange (Indonesia & Kav, 2008) or the company's original website. Data analysis technique uses multiple linear regression test, the independent variable and dependent variable are explained. The equation for conducting a multiple linear regression test is:

Y = α + β1X1+ β2X2 + β3X3+ β4X4+ β5X5 + e
Information:
Y: Disclosure of Carbon Emissions
α: Constant
β1 β2 β3 β4 β5 β6 β7: Regression Coefficient
X1: Environmental Performance
X2: Board of Commissioners
X3: Independent Commissioner
X4: Profitability
X5: Leverage
e : Error

4. Results and Discussion

The goodness of fit test (F test) shows that the p-value is 0.020, which is smaller than the significance level of 0.05, which means that there is an influence of all independent variables on the dependent variable (table 1). Hypothesis test results are as follows:

Table 1. Hypothesis Test

	Variable(s)	Statistics	Sig.
F-test		2,889	0,020
	Environmental Performance	-2,723	0,008
	Board of Commissioners	-,784	0,436
t-test	Independent Commissioner	1,640	0,106
	Profitability	-2,569	0,012
	Leverage	-2,007	0,049
	R-Square	0,180	

Table 1 above produces a significance value for environmental performance of 0.008, which is smaller than 0.05, which means environmental performance has an influence. The board of commissioners proved a significant value of 0.436, where this value is greater than 0.05, which means the board of commissioners has no influence. The significant value for independent commissioners is 0.106, which means that independent commissioners do not influence because the value exceeds 0.05. Furthermore, the results of the t test for the profitability and leverage variables prove that the significant value is below 0.05, meaning that profitability and leverage have a significant influence with values of 0.012 and 0.049 respectively.

The significant value of the environmental performance variable is 0.008, which is less than 0.05, so the hypothesis is accepted. With this, it can be concluded that environmental performance variables have an impact on carbon emissions. It is identified that the company's environmental performance with the PROPER rating proxy has an influence that causes the company to always work on the environmental conditions of the company, which is revealed as proof of the corporate responsibility to the public so that it can continue its existence and the public can be aware of the existence of the company operating. If a company gets a high PROPER rating as an award from the Ministry of Environment for environmental performance, then the company is also able to support performance so that it can be legitimized According to Julianto & Sjarief, (2016) research, as PROPER increases, more and more information related to the environment is disclosed, one of which is carbon disclosure. With the presence of emission disclosures, the results contradict the same (Cahya, 2017) who says that it is not affected by the environmental performance of the carbon disclosure because companies tend to inform investors and other stakeholders of related performance and financial performance.

The significance of the commissioner variable is 0.436, which means more than 0.05, which means the commissioner variable has no effect. This is because there is no pressure from stakeholders to practice environmental responsibility, so the board of commissioners does not make disclosures through several media. If you look at the results of the descriptive statistical analysis on the average board of commissioners in Indonesia, it shows 6 people, which number still looks small, so it can be said that there is no influence on the number of commissioners in the company. This is in accordance with (Kılıç & Kuzey, 2019)research, which proves that the number of board members does not convey an important position regarding the company's procedures for voluntary disclosure of carbon emissions. If the board of commissioners has a large number, it is likely that it will be difficult to reach the target of the decision-making process regarding carbon emissions disclosure, which will result in the performance of the board of commissioners being ineffective.

The significant value of the independent commissioner indicates 0.106, which is higher than the significant limit of 0.05, where the independent commissioner has no significant influence on carbon emissions. In this case, there is no influence because the independent board of commissioners cannot bring about good governance over the disclosure of company information, resulting in the implementation of the principle of transparency among stakeholders. But it's more about corporate financial performance than environmental performance. If you look at the results of the descriptive statistical analysis, it shows an average of 0.3975, which in those figures still seems small in the measurement of the independent commissioners in companies that tend not to implement voluntary carbon disclosure. Besides (Amaliyah & Solikhah, 2019), there is another thing that supports the idea that independent commissioners only have duties as supervisors who have limited time for their duties.

The research was supported by Kılıç & Kuzey, (2019), whose independent board of directors did not influence the disclosure of carbon emissions. The significant value of profitability indicates 0.012, where the value is smaller than the 0.05 alpha levels. In this case, profitability affects carbon emissions because it can meet stakeholder requirements such as environmental information, including disclosure of total carbon emissions emitted in operational activities, by classifying part of the profits obtained for the cost of disclosures to obtain legitimacy from the public. If viewed from a descriptive statistical analysis, the average company entered in the sample has a profitability value of 0.0751, or about 7%, where the company provides disclosure fees even though carbon disclosures are still voluntary. Companies that have good financial performance can then be assumed to be able to finance the cost of disclosing the company's carbon emissions (Brammer & Pavelin, 2008). This is backward with (Eka Dewayani & Ratnadi, 2021), who said that profitability is not affected by carbon disclosure because if the profitability rate is high, then it is not necessary to make or report disclosures.

In particular, carbon disclosure could interfere with information relating to the finances of the company. Table 1, the significant value of profitability indicates 0.049, where the value is less than the alpha level of 0.05. This is an influential leverage in carbon disclosure because companies prefer debt discharge to voluntary disclosures such as carbon disclosure. After all, the fact that a company discloses carbon emissions can increase the amount of costs it has to bear and can limit its ability to reveal carbon. If the company has a high level of leverage, then it will disclose less (Eka Dewayani & Ratnadi, 2021). This research, supported by Jannah & Muid, (2014), said there was a significant influence on the reason that companies could provide satisfaction to stakeholders related to the cost of making carbon disclosures that could imply on the company's finances.

5. Conclusions

According to the results discussed earlier, it can be concluded as follows: environmental performance significantly affects carbon emission disclosure; the commissioner does not influence carbon emissions disclosures; an independent commissioner does not influence carbon disclosure; profitability significantly influences carbon emission disclosure; and leverage significantly impacts carbon disclosure. With the explanation already presented in previous chapters, the author adds that further researchers are expected to be able to use samples from other sectors and increase the observation period so that they have a large number of samples. Next, researchers will be expected to use new variables to see other factors that influence the carbon discharge disclosures.

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