

The Effect of Environmental Performance, Leverage and Company Size Towards Carbon Emission Disclosure on Rated Proper Company in 2015-2018

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Abstract: *Carbon emission disclosure is a form of communication that is important and necessary to fulfil the needs and interests of information to the company's stakeholders. That statement is caused by stakeholder theory, when the company conducts its operational company can't focus on company purposes or interests only, but company must pay attention to the stakeholder's interests and provide benefits for stakeholder which can be done by disclosing financial and non-financial information included carbon emission disclosure as a form of corporate responsibility to stakeholders.*

The purpose of this research is to analyze and provide empirical evidence about the effect of environmental performance, leverage and company size against carbon emission disclosure on rated PROPER company in 2015-2018. This research is a form of quantitative research with hypothesis testing. Technique used for data analysis is multiple linear regression. The results of this research explained that environmental performance and company size has positive and significant effect on carbon emission disclosure. On the other hand, leverage has no effect on carbon emission disclosure.

Keywords: *carbon emission disclosure, environmental performance, leverage, company size.*

INTRODUCTION

Growth and development of the industry having a significant and rapid improvement. In 2018, the growth of industry reached 4.07% from the previous year (Badan Pusat Statistik, 2019). The rapid growth of the industry not only demonstrates the success of a growing economic pace, but also one of the causes of significant environmental problems and globally impactful for life, namely climate change in the form of global warming (Satya, 2013; Pratiwi & Sari, 2016). Climate change that attributed in global warming is caused by increased levels of carbon dioxide emissions (CO₂) which produced from industrial activity resulting in a Greenhouse Gas (GHG) effect (Deantari *et al.*, 2019).

The operational activities from industry or a company produce large amounts of carbon emissions (Pratitri & Zulaikha, 2016). The International Energy Agency report (IEA) states that the largest contribution of world carbon enhancement that causes global warming is the consumption of fossil energy, about 70% of the world's carbon emissions are the use or consumption of fossil energy (GAPKI, 2017). Coal, petroleum and natural gas are some of the fossil energy that required and used by industry for carrying out its operational activities which resulting in increased carbon emissions on the air surface and caused air pollution (Suhardi & Purwanto, 2015). Air Quality Index (AQI), which provides data for air quality in various parts of the world, Indonesia has air quality that is unhealthy with a size of 170 US AQI or equivalent

to 170 micrograms/m³ which indicates that the condition of air quality is poor because of the substantial content of carbon emissions on the surface (Airvisual.com, 2019).

Industrial activities also resulted in the transfer of land function that caused carbon dioxide gas levels (CO₂) increasing in the air (Kementerian Lingkungan Hidup dan Kehutanan, 2012). The environmental statistics in 2017 which compiled by the Central Statistics Agency (Badan Pusat Statistik) states that Indonesia has a land deforestation occurring on average of more than 350,000 hectares per year. In 2017, The Global Carbon Project (GCP) stated that carbon dioxide emissions in Indonesia increased by 4.7% from the previous year as well as in the year 2018 increased again by 2% (Nirmala, 2019).

Indonesia's commitment and effort in reducing carbon emissions can be seen from government action that has been implemented and conducted by establishing Presidential Regulation of the Republic Indonesia No. 71 year 2011 about National Greenhouse Gas Investization and No. 61 year 2011 of National Action Plan of Greenhouse Gas Decline (RAN-GRK) (Jannah & Muid, 2014). In addition to the determination of the regulation, in the year 2016, Indonesia also became one of the countries that signed and participated in Paris Agreement (Regulation No. 16 year 2016) as a substitute for The Kyoto Protocol Agreement (Regulation No. 17 year 2004). The Paris Agreement is an international agreement that committed to lowering the world's carbon emissions levels (Apriliana *et al.*, 2019).

The company or industry can not only achieve or pursue its purpose and interests for corporate, but also conduct or running its business operations for concern and attention of stakeholders (Society and Government) to the issue environment resulting from increased carbon emissions that caused global warming that occurred until now (Cahya, 2016). The company or industry is required to have a concern and responsibility so that they can generate an operational activity which more effective, efficient and environmentally friendly to minimize the increase of carbon emissions (Cahya, 2016). A form of responsibility and environmental concern can be done by the company by conducting carbon emissions disclosure in company reports and showing the transparency of information, communication and environmental participation that has been Applied by the entity to stakeholders (Deantari *et al.*, 2019; Pratiwi & Sari, 2016). The carbon emissions disclosure in Indonesia is still included in voluntary disclosure so that the practice is not often done by the industry or the company (Jannah & Muid, 2014). Companies that perform or conduct carbon emissions disclosures have specific objectives of avoiding threats especially for companies that produce carbon dioxide or carbon gas emissions such as increased operating costs, risks of reputation, risk of lawsuits, fines and penalties related to environmental issues (Cahya, 2016).

The research about carbon emissions disclosure has also been done by Suhardi & Purwanto (2015), Jannah & Muid (2014), Cahya (2016), Deantari *et al.*, (2019) and Prafitri & Zulaikha (2016). The results that expressed by each researcher are also different or can be said to be inconsistent with the aspect of environmental performance, leverage and size of the company against the carbon emissions disclosure. This environmental phenomenon or issue becomes a continuing problem that is still happening and quite significant affects the business and needs to be considered the impact. The objects that some previous studies used also had a difference.

Some of these things are the considerations and motivation for researcher to conduct research on the influence of environmental performance, leverage and company size against the carbon emissions disclosure further.

On the basis of a statement from the background problem that has been elaborated and spelled out, the problem formulation of this research is "whether environmental performance, leverage and company size affect the carbon emissions disclosure on rated PROPER company period 2015-2018? ". Based on the problem formulation, the research aims to analyze and provide empirical evidence of the influence of environmental performance, leverage and company size against the carbon emissions disclosure on rated PROPER companies period 2015-2018.

Framework and Formulation of Hypothesis

Stakeholder Theory

The term of the stakeholder is used and introduced by The Standford Research Institute (SRI) in 1963 (Lindawati & Puspita, 2015). Hadi (2011) states that stakeholders are all the parties, both internal and external parties, that may affect or be influenced by the company directly or indirectly. This theory states that the organization or the company is not an entity that only operates for its own or corporate benefit, but also to provide benefits forstakeholders (shareholders, creditors, customers, suppliers, governments, community, analysts, and other parties) (Ghozali & Chariri, 2007).

This theory is a concept that explains the continuity of an industry or company is related and concerned with the role of stakeholders both from internal and external with different or diverse background interests of each stakeholder (Lindawati & Puspita, 2015). The statement means that the existence of a company is influenced by the involvement or participation given by the stakeholders to the company (Suhardi & Purwanto, 2015).

According to Mardikanto (2014) theory of stakeholders is a strategic management concept that aims to assist the company in strengthening relations with external parties as well as developing a competitive advantage. Deegan (2004) says stakeholder theory is a theory or concept that explains all stakeholders have the right to obtain information relating to the activities of the company that could influence the stakeholder's decision making interests (Nur'ainun & Lestari, 2017). Essentially, stakeholders have control or ability to manage the use of economic resources which used and managed by companies such as access to influential media, capital and labor, regulate and control the company in operation including the matters of relating to disclosure (Ghozali & Chariri, 2007). These abilities provide direct or indirect pressure on the company's expectations and interests of different stakeholders including issues regarding environmental disclosure (Suhardi & Purwanto, 2015).

The company in obtaining support to meet the expectations or expectations of current stakeholders is an environmental-related report as relevant information in the company's performance analysis so that the investment decision making is done by Precisely namely marked with the maximum return earned by the investor (Perez, 2015). The information disclosure about environment is a part of means communication with stakeholders to increase

trust and information asymmetry (Handoko, 2014). Environmental disclosure also indicates that the company is implementing a good environmental responsibility where it can maintain the relationship with the company's stakeholders that are expected to fulfill the various interests and desire of stakeholders so that can be fulfilled appropriately and create a harmonious relationship between the company and its stakeholder which positively impacts the achievement of sustainability (Cahya, 2016).

Carbon Emission Disclosure

The meaning of disclosure is to delivering a relevant information in addition to the financial statement including the delivery of interpretive means. Disclosure is also meaningful as a provision of information broader than can be conveyed through financial statement (Suwardjono, 2005).

Information disclosure either contained or obligate in financial statements or additional information i.e. footnotes, subsequent events or information about events after the date of reporting, management analysis on operations Future organizations, financial forecasts and other information (Nuswandari, 2009). The purpose of disclosure is to provide information that is deemed important and necessary to achieve the objectives of financial reporting and to fulfill the expectations and interests of the diverse stakeholders (Suwardjono, 2005). Disclosure can be differentiated into 2, mandatory disclosure and voluntary disclosure (Suwardjono, 2005).

The carbon emissions disclosure is information about the carbon emissions which attached and provided by the company from the annual report or annual report as well as the company's sustainability report (Jannah & Muid, 2014). The disclosure of emissions information in the annual report demonstrates the transparency and accountability of a corporation for its operational activities (Deantari *et al.*, 2019; Pratiwi & Sari, 2016). carbon emissions disclosure is a form or example of the disclosure of environmental information that is the unity of additional reports as voluntary disclosures made by the company and in PSAK No. 1 has also been described (Prafitri & Zulaikha, 2016).

Environmental Performance

Environmental performance is defined as an overview of the company's performance in conducting business or efforts to create good environmental conditions and preservation of the natural environment applied by the company as a potential party resulted in a negative impact on the environment and social (Suratno *et al.*, 2006; Wijaya & Amin, 2014). Good environmental performance is a reflection of the activities or environmental conservation activities that have been done by a company. Environmental performance can also be said as a mechanism or action of a company that is voluntarily conducted to integrate attention and concern for the environment in business operations and interactions inter stakeholder companies that exceed the organizational responsibilities in the field of law. Environmental performance is said to be good if the company is integrating such performance with the operational activities of the company (Putra & Utami, 2017).

The International Organization for Standardization (ISO) or The National Standardization Agency (2004) states that environmental performance is a result created or can be determined from the application of environmental management systems about handling or oversight of the environmental field. Policies, objectives and environmental targets are the basis of the assessment for environmental performance (ISO, 2004). Lakonski (2000) in Sulistiawati & Dirgantari (2016). states that the level of environmental damage caused by company's operating activities to be a reference to the implementation of environmental performance concepts. The low level of environmental damage indicates that the environmental performance of the company is better while the high level of environmental damage indicates that the company's environmental performance is poor (Sulistiawati & Dirgantari, 2016).

Leverage

Harahap (2016) suggests that leverage is a ratio that serves to measure how far a company is financed by debt with the company's ability to be described by equity. Leverage describes the relationship between liabilities and equity firms. In addition, Leverage can also be said as a comparison of the total debt with the total assets owned by the company (Suhardi & Purwanto, 2015). Leverage can demonstrate the capability of a company in fulfilling various liabilities or liabilities owned by the company, both short-term and long-term (Subramanyam & Wild, 2013). Companies that use most of the debt as its source of funding and used to conduct business activities have a large level of risk due to the high level of leverage indicating corporations have large debt levels so that the business or business risk is increasing as well as can the emergence of contingency obligations that must be fulfilled by the company in the future (Subramanyam and Wild, 2013). A high leverage rate indicates that the company's performance is poor or even considered bad and have a high risk rate of failure or bankruptcy due to capital structure or capital composition owned by most companies or more are dominated by debt so that the sustainability of the company becomes less secure (Irwhantoko & Basuki, 2016). Companies with high leverage, generally conduct voluntary disclosures which relate to environmental disclosures, this is intended as a provision of information that must be fulfilled to stakeholders, particularly creditor or investor (Saputra, 2016).

Company Size

The company size is a comparing scale or classifying large or small businesses that can be seen based on total assets, total sales, stock market value and so on (Hery, 2017). The company's size reflects the resources owned by the company. The larger the scale or size of the organization, the more resources owned by the organization are related to assets and sales. Assets or large sales indicate that the embedded capital and turnover of assets that create profit in the company is high (Hery, 2017).

The corporation which scaled large has operational activities with a higher significance rate toward the impact on the environment due to more variative operational activity compared to small-scale companies (Irwhantoko & Basuki, 2016). The activity or interaction of large-

scale companies has a high level of visibility so that operational activities are more noticeable and perceived by various parties, especially external (media, policymakers, government and society). A high level of visibility is an aspect that encourages large companies to conduct carbon emissions disclosures (Deantari, *et al.*, 2019).

The larger the company size, the larger the assumptions or expectations given to the company, so that large-scale enterprises tend to have greater and special attention (Hery, 2017). Indirectly, large-scale companies are required to conduct environmental disclosure which is carbon emissions because stakeholders have high expectations related to the company's environmental responsibility (Suhardi & Purwanto, 2015). Large-scale companies also have a higher ability to provide environmental information of carbon emissions (Irwhantoko & Basuki, 2016).

The Influence of Environmental Performance Towards Carbon Emission Disclosure

Companies with good environmental performance have a tendency to present the disclosure of higher carbon emissions information compared to companies that have poor environmental performance (Suhardi & Purwanto, 2015). Poor organizational environmental performance levels have the intention of not conducting emission disclosures to avoid the negative views of the stakeholders. Meanwhile, organizations that have a good environmental performance will reveal the environmental information of carbon emissions voluntarily as differentiator elements from other organizations as competitive strategies. In other words, an organization with good environmental performance has a high level of carbon emissions disclosure will be conveying carbon information on the company's financial statement about carbon disclosure (Prafitri & Zulaikha, 2016).

Good environmental performance shows that the company is more proactive towards its environmental strategy. Proactive forms of the company's environment can be observed from the Company's initiative in implementing pollution prevention programs or using renewable energy and so on. This proactive strategy that encourages corporations to conduct carbon emissions disclosures to investors and other stakeholders as additional information that demonstrates good corporate credibility (Jannah & Muid, 2014). The disclosure made by the company with a good level of environmental performance is a good news for the company that can fulfill the expectations of the stakeholders (Suhardi & Purwanto, 2015). Research by Prafitri & Zulaikha (2016) and Deantari *et al.* (2019) found results and proved that environmental performance has a positive effect on the carbon emissions disclosure (greenhouse gases). Based on the explanation, hypotheses in this study can be formulated as follows:

H1 : Environmental performance has positive effect on the company's carbon emissions disclosure

The Influence of Leverage Towards Carbon Emission Disclosure

Corporations or companies with high levels of leverage have a big obligation of debt and payment of fees or interest expense to external stakeholders i.e. creditors (Prafitri & Zulaikha, 2016). High leverage can pose a greater risk of debt failure so that sustainability or the

continuity of the companies threatened or less-secured, and companies can even be bankrupt if it fails to make repayment at the appointed time (Irwhantoko & Basuki, 2016). The risk arises because the company with a high level of leverage has a composition or capital structure more derived from debt and has a high dependence on that debt (Saputra, 2016). The problem of continuity or sustainability of business which caused by the high leverage value of the company also pose a relatively high risk to implement or invest in the company's capital (Saputra, 2016). The risk arising from the high value or leverage of the company can be prevented or avoided by disclosing information wider or more than what is required by the accounting standards or applicable regulations (Irwhantoko & Basuki, 2016). Broader disclosure to stakeholders especially creditor and investor helped them to understand the company's performance moreover if the company has high leverage (Saputra, 2016). Conversely, if a company with high leverage suspends or reduces or avoids disclosures it will cause concerns or doubts can even complicate stakeholders because of the lack of information needed as a form of accountability and explanation for the purpose of the use great funding or debt (Irwhantoko & Basuki, 2016). On the other hand, companies that increase debt to spur performance and finance productive activities such as environmental information disclosure, policy to encourage increased portions of debt are considered very appropriate performed (Saputra, 2016). Carbon emission disclosure is an effort or way of the company in preventing or controlling the risk of debt failure caused by the magnitude of the company's obligations (Irwhantoko & Basuki, 2016). The conclusion is if the level of leverage is high then the higher the carbon emission disclosure and the applies opposite. D'amico *et al.* (2014) and Saputra (2016) state that leverage has a positive or direct influence on carbon emission disclosure. Based on the description above, it can be compiled formulation of hypotheses as follows:

H2: Leverage has a positive effect on the company's carbon emissions disclosure

The Influence of Company Size Towards Carbon Emission Disclosure

Interactions and activities generated by large-scale companies have a broad and influential impact or contribute significantly to the environment. Activities and interactions as well as complex and diverse policies of large corporations are also more noticeable and perceived as the impact by external parties namely the media, policy-making agencies, governments and communities (Suhardi & Purwanto, 2015). Therefore, large companies face high pressures or social and political demands, as well as the supervision and application of strict regulations so that the company is required to concerned or sensitive and responsible for environmental issues or concerns. Including the implementation of carbon emissions disclosure (Deantari *et al.*, 2019). Large-scale companies get greater demands or pressure to conduct carbon emissions disclosures due to their operational activity producing large carbon emissions levels, which makes large-scale enterprises being a subject of public supervision (Deantari *et al.*, 2019). These aspects that make the corporation or large industry more responsive to conduct carbon emissions disclosure as a form of responsibility and fulfillment of its environmental impact activities (Prafitri & Zulaikha, 2016; Deantari *et al.*, 2019).

Another aspect that makes large companies have a high level of carbon emissions disclosure is that stakeholders have a big expectation of the company. These expectations relate to the disclosure of the company's environmental performance in the practice of carbon management because the company is deemed to have more capacity and resources (Suhardi & Purwanto, 2015). Based on the details that have been explained can be concluded that the greater the company size then the percentage of carbon disclosure also will be high (Suhardi & Purwanto, 2015). The research conducted by Jannah & Muid (2014), Prafitri & Zulaikha (2016), Deantari *et al.* (2019) and Suhardi & Purwanto (2015) concluded that the company size positively affects the carbon emissions disclosure. Based on the statements that have been outlined and explained can be compiled hypotheses as follows:

H3: Company Size has positive effect on the company's carbon emissions disclosure

METHOD

Research Design

The research uses a hypothesis testing design with a quantitative approach. The data used is secondary data obtained from the sustainability report and/or the annual report of non-service companies rated PROPER and listed on the IDX. The observation period in this study was 2015-2018.

Research Variables

The dependent variable i.e. carbon emissions disclosure (CED) is measured using the previously developed techniques or measuring methods of Choi *et al.* (2013), a CDP Checklist divided into five sections or groups of categories with a total 18 of the disclosure items shown in the following table 1 (Irwhantoko & Basuki, 2016).

Each disclosure item will be given a "1" if the company performs the disclosure and the "0" score is granted if the company does not perform the disclosure item. Then, the score calculated using this following formula (Deantari *et al.*, 2019):

$$CED = \frac{\text{Total Items disclosed}}{18} \times 100\%$$

Environmental Performance (KL) is measured by using PROPER (the company's performance rating assessment Program in environmental management), which is an environmental performance gauge developed by the Ministry of Environment and Forestry. In PROPER consists of 5 color rankings which the explanation or description of each rating can be seen in the following table 2.

The measurements are done by scoring each category or criteria of the color rating as follows (Suhardi & Purwanto, 2015; Deantari *et al.*, 2019): (1) PROPER gold rank is rated "5", (2) PROPER Green rank is rated "4" Score, (3) PROPER Blue rank is rated "3", (4) PROPER red rank is rated "2", (5) PROPER Black rank is given a "1" score.

Leverage (LEV) is a ratio that reflects the relationship between the company's debts to the company's equity by measuring the extent to which the company is financed from the debt with the company's ability to be described by equity or Capital (Harahap, 2016). Leverage variable is proscribed through Debt to Equity Ratio (DER) with the following formula (Deantari *et al.*, 2019):

$$LEV = \frac{Total\ Debt}{Total\ Equity}$$

The company size (SIZE) is a scale for classifying large or small companies determined based on total assets, total sales, stock market value and so on (Hery, 2017). The company size is proscribed with total assets using the following formula (Deantari *et al.*, 2019):

$$SIZE = \ln(Total\ Asset)$$

Analysis Method

The Data that has been collected is analyzed using a statistical analysis tool which is a multiple linear regression analysis with the following equation models:

$$CED = \alpha + \beta_1 KL + \beta_2 LEV + \beta_3 SIZE + e$$

Description :

CED	= Carbon Emission Disclosure
α	= Constant
KL	= Environmental Performance
LEV	= Leverage
SIZE	= Company Size
e	= <i>Error Term</i>
β	= Regression coefficient of models

RESULTS

The research object is a non-service industry or company that is rated PROPER and registered at IDX in 2015-2018. The population acquired was 55 companies, meanwhile for samples acquired as many as 38 companies in 2015, 41 companies in 2016, 39 companies in 2017 as well as in 2018 obtained as much as 40. Thus, the samples obtained in the four-year observation period are 158 samples of the company. A description of the sample determination is presented in the following table 3.

Variables description

The test results from descriptive statistics can be seen in the following table 4.

Carbon emissions disclosures (CED) are measured using the CDP checklist with a total of 18 disclosure items having the highest value of 0,833 whereas the lowest value of the CED is 0,111. The mean or average value of the carbon emissions Disclosure (CED) is 0,368 with a standard deviation of 0,215. These results indicate that the average company or industry reveals

6 to 7 items related to carbon emissions in accordance with the Carbon Emission Disclosure Project Checklist. Environmental performance (KL) measured by PROPER rating has a maximum value of 5 and a minimum value of 1. The average value of environmental performance is 3,010 with a standard deviation of 0,867 indicating that the average company has a blue PROPER rating ("3"). Leverage measured using the Debt to Equity Ratio (DER) has a maximum value of 11,274 and a minimum value of 0,076. The mean or average leverage value is 1,094 with a standard deviation of 1,281 indicating that the average company has a capital structure or funding source that is derived from debt and can also be said that the company's debt is greater compared to the equity company-owned. Company size measured by the natural logarithm of total assets owned by the company resulted in a maximum value of 32,387, while the minimum value of 27,183. The average or mean value of the company's size is 29,812 with a standard deviation of 1,252.

DISCUSSION

Based on the results of the test by using multiple linear regression analyses obtained the following results. According to table 5 above, multiple linear regression equations are compiled as follows:

$$CED = -1,709 + 0,097KL + 0,008LEV + 0,060SIZE + e$$

The results showed that the environmental performance and size of the company were significantly influential. The conclusion is stated because both of these variables are environmental performance and the company size generates or has a lower significance level or below 0,05 (5%). Meanwhile, the leverage variable has no significant effect on the disclosure of carbon emissions as it has significant levels above 0,05 (5%).

The results of the analysis using multiple linear regression with SPSS software showed that environmental performance (KL) had a significant positive effect on the carbon emission disclosure (CED). The results of this study were consistent with the research conducted by Prafitri & Zulaikha (2016) and Deantari *et al.* (2019). Environmental performance has a positive effect on the disclosure of carbon emissions because when the company has good environmental performance, it has a high level of concern or sensitivity and enthusiasm in controlling or managing the environment well, so the company tends to reveal information about carbon emissions levels (Deantari *et al.*, 2019; Prafitri & Zulaikha, 2016). Companies with good environmental performance perform disclosure as a means of notification or delivery of activities and as a form of responsibility for the environment that is related to emissions to the stakeholders (Deantari *et al.*, 2019; Prafitri & Zulaikha, 2016). The disclosure with this superior environmental performance is good news for the company's stakeholders (Prafitri & Zulaikha, 2016). The disclosure of information about the environment is about emissions will also increase transparency and reduce information asymmetry between the company's stakeholders (Handoko, 2014).

The results of analysis using multiple linear regression with SPSS software state that leverage (LEV) has no effect on the disclosure of carbon emissions (CED). The results of this research are consistent with those expressed by Suhardi & Puwanto (2015). The preceding statement or argument stating that if the level of leverage is high then the company tends to make disclosure as a form of accountability for the use of large funds or debts and to prevent or mitigate risk of debt failure resulting in the threat of sustainability or continuity of the company so that the level or the intention to conduct high disclosures is not proven in this research. These conditions or situations may occur because companies with high or low leverage are more cautious about conducting carbon emissions disclosures which are voluntary disclosures as they will increase operational costs company higher (Suhardi & Purwanto, 2015). These costs increase resulting in the company's financial burden of increasing and exacerbating the company's financial condition. Companies with high leverage are more considering and deciding to use resources aimed at improving productivity than implementing carbon emissions disclosures (Suhardi & Purwanto, 2015). In addition, the company has limited funds or resources to conduct emissions disclosures so that the company tends to suppress or save costs by using resources for operational quality improvement purposes (Suhardi & Purwanto, 2015). The results of analysis using multiple linear regression with SPSS software provide a statement that the company size (SIZE) has a significant positive effect on the carbon emissions disclosure (CED). The results were consistent with those presented by Jannah & Muid (2014), Prafitri & Zulaikha (2016), Deantari *et al.*, (2019) and Suhardi & Purwanto (2015). Companies with a large size or scale have more diverse and complex interactions and activities that have a large and negative impact on the environment (Suhardi & Purwanto, 2015). The activities of large companies are also more visible or have a high level of visibility and perceived impact by various external stakeholders, namely the media, policymakers, governments and communities (Suhardi & Purwanto, 2015). Therefore, this large company encounters or confronts both political and social demands and gets strict provisions or regulations from external parties so that the company cares more about environmental issues including carbon emission disclosures (Deantari *et al.*, 2019; Suhardi & Purwanto, 2015). Large corporations are also being subject to public surveillance because of its operational activity resulting in more carbon emissions (Deantari *et al.*, 2019). These aspects that make large-scale companies always strive to reduce carbon emissions through disclosure as a means of communication and supervision for stakeholders to the company in order to know the form of Responsibilities and environmental activities undertaken by the company (Deantari *et al.*, 2019; Suhardi & Purwanto, 2015). Large corporations have adequate and more resources to conduct carbon emissions disclosures so that large enterprises have high capability in disclosing such emission information to meet the high expectations of stakeholder (Suhardi & Purwanto, 2015).

Conclusions and Limitations

Based on the results of analysis and discussion that has been done in this research, it can be inferred that environmental performance and company size proved to be positive and

significant impact on the carbon emission disclosure. While for leverage in this research was not proved to have an effect negatively and significantly.

This research has some limitations that can be observed and considered for subsequent researchers. First, the object used in this research is a non-services industry or company rated PROPER and listed in the IDX period 2015-2018. Secondly, the carbon emission disclosure in this research is only measured by the use of CDP checklist adopted from previous research i.e. Choi *et al.* (2013), moreover the carbon emission disclosure in Indonesia itself is still a form of voluntary disclosure so that application and implementation is certainly not maximized.

With the conclusions and limitations outlined, researchers provide some suggestions for subsequent research. First, for subsequent studies, the addition of other independent variables that could affect the carbon emission disclosure and rarely researched for example the quality of corporate governance. Secondly, for further research can add a sample of research by using a population of all companies or non-services industries listed in the IDX as a research object.

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Appendix

Table 1

Carbon Emission Disclosure Project Checklist

Category	Item	Description
Climate Change (CC): risks and opportunities	CC1	Assessment/description of the risks (regulatory, physical or general) relating to climate change and actions taken or to be taken to manage the risks
	CC2	Assessment/description of current (and future) financial implications, business implications and opportunities of climate change
Greenhouse Gas Emissions (GHG)	GHG1	Description of the methodology used to calculate GHG emissions (e.g. GHG protocol or ISO)
	GHG2	Existence external verification of quantity of GHG emission- if so by whom and on what basis
	GHG3	Total GHG Emissions – metric tones CO ₂ -e emitted
	GHG4	Disclosure of scopes 1, 2, 3 or scope direct GHG emissions
	GHG5	Disclosure of GHG emissions by sources (e.g. coal, electricity, etc.)
	GHG6	Disclosure of GHG emissions by facility or segment level
	GHG7	Comparison of GHG emissions with previous years
Energy Consumption (EC)	EC1	Total energy consumed (e.g. tera-joules or peta-joules)
	EC2	Quantification of energy used from renewable sources.
	EC3	Disclosure by type, facility or segment
Reduction and Cost (RC)	RC1	Detail of plans or strategies to reduce GHG emissions
	RC2	Specification of GHG emissions reduction target level and target year
	RC3	Emissions reductions and associated costs or savings
	RC4	Cost of future emissions factored into capital expenditure planning
Carbon Emission Accountability (ACC)	ACC1	Indication of which board committee (or other executive body) has overall responsibility for actions related to climate change
	ACC2	Description of the mechanism by which the board (or other executive body) reviews the company's progress regarding climate change.

Source: Irwhantoko & Basuki (2016)

Table 2

PROPER Rankings

No	Rangking Category	Description
1	Gold	Companies that consistently demonstrate the excellence of the environment in the production or service process, as well as conduct business that is ethical and accountable to the community. The company has also had an effort to do 3R (Reduce, Reuse, Recycle).

No	Rangking Category	Description
2	Green	The company conducts environmental management more than the provisions or requirements apply or is called beyond compliance through the implementation of environmental management systems and efficient utilization or use of resources with the implementation of 3R efforts as well as carrying out social responsibilities well.
3	Blue	The company has implemented the required environmental management efforts in accordance with the provisions or regulations stipulated and applicable.
4	Red	The company conducts environmental management efforts, but only partially has achieved a result in accordance with the terms or conditions in the legislation.
5	Black	The company deliberately commits an omission that has an impact on pollution or environmental damage or violation of law rules or does not commit administrative sanctions.

Source: Kementerian Lingkungan Hidup dan Kehutanan (2014).

Table 3

Sample Selection Criteria

Description	Number of Companies
The non-services industry or company rated PROPER and listed on IDX	55
Total Observation	4 Tahun
Company Samples	220
Companies that do not meet the sample criteria:	
1. Non-service industry or company listed on the Indonesia Stock Exchange (IDX) period 2015-2018.	-
2. Non-service company or industry that rated PROPER in the period 2015-2018	
Year: 2015	-
Year:2016	-
2017	(4)
2018	(4)
3. Non-service companies or industries that provide and issue a complete sustainability report and/or annual report in the period 2015-2018.	-
4. Non-service companies that reveal carbon emissions or have carbon emissions policies.	
2015	(9)
2016	(6)
2017	(4)
2018	(3)
5. Non-service companies that use rupiah currency in reporting of financial information.	(32)
Total samples	158

Source: IDX Site (Processed)

Table 4

Descriptive Statistical Results

Variable	N	Minimum	Maximum	Mean	Std. Deviation
CED	158	0,1111	0,8333	0,3684	0,2152
KL	158	1	5	3,010	0,8670
LEV	158	0,0761	11,2739	1,0943	1,2813
SIZE	158	27,1833	32,3870	29,8122	1,2516

Source: (Processed, 2019)

Table 5

Test t

Variable	Unstandardized Coefficient		t	Sig.
	β	Std Error		
Constant	-1,709	0,340	-5,021	0,000
KL	0,097	0,017	5,584	0,000
LEV	0,008	0,011	0,664	0,508
SIZE	0,060	0,012	5,094	0,000

Source: (Processed, 2019)