

## **Effect of Environmental Performance on Environmental Disclosures of Manufacturing, Mining and Plantation Companies Listed in Indonesia Stock Exchange**

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### **Abstract**

The issuance of Government Regulation No. 47 of 2012 on Social and Environmental Responsibility enables companies to take account of their activities in the social and environmental field and to report in the company's annual report. This study aims to obtain empirical evidence about the effect of environmental performance on environmental disclosure with Government Regulation. 47 of 2012 as a moderating variable. In this study, the variable of environmental performance was measured using Corporate Performance Rating Assessment Program (PROPER) which is one of State Ministry of Environment's efforts to encourage corporate compliance in environmental management through information instruments, and the variable of environmental disclosure was measured by GRI 3.0 (Global Reporting Initiative) score. The variable of Government Regulation No. 47 of 2012 is only used to divide the data group into 2 sub-groups, i.e. groups of data before and after government, regulation was issued. The populations of this research are mining companies, manufactures and plantations listed on the Indonesia Stock Exchange (IDX) and included in PROPER 2010-2013. Technique of collecting data was by using purposive sampling method. The total company in the observation was 92 companies. The hypotheses were tested by using linear regression analysis with moderation variable. The results of this study indicate that environmental performance has a significant positive effect on environmental disclosure, while Government Regulation No. 47 of 2012 has no effect on strengthening the relationship between environmental performance and environmental disclosure.

### **Keywords**

Government Regulation No. 47 of 2012, social and environmental responsibility, environmental performance, environmental disclosure

## 1. Introduction

Recent environmental damage has often been one of several issues that are often discussed in the public sphere (Anderson, 2001). Companies, especially those involved in extractive and manufacturing, are considered responsible for environmental destruction (Azapagic, 2004; Hammond, 1995). In a developing country like Indonesia, it is undeniable that the company growth is growing rapidly (Jomo, 2001). Although, it is a good indicator from the economic side, increasing the number of companies can be one contributor in environmental damage, from an environmental point of view. The company's waste as well as the company's activities have had many negative impacts to the environment (Basalamah & Jermias, 2005). Basically, the company itself does not want its activities to have a negative impact on the environment because of its negative image in the eyes of the public, investors, and other interested parties. However, some corporate activities are undeniable that would damage the environment, for example in the mining activity.

Efforts that can be done to overcome the impact of companies on the environment are the company's own seriousness in addressing or minimizing the impact of its activities on the environment through Corporate Social Responsibility activities or Social and Environmental Responsibility (Carroll & Shabana, 2010). In addition, the role of government is also important as the party who gives the regulation related to social responsibility and environment. Companies that already implement CSR will tend to disclose CSR activities in the annual report or sustainability report. The CSR activities disclosure which has been implemented can provide added value for the company in the stakeholders' view (Handayani, Wahyudi, & Suharnomo, 2017). This is in accordance with the principle of legitimacy theory, i.e. companies want to look legitimate in the public eye. In addition, partially in Indonesia, companies the CSR has to implement because the Ministry of the Environment in this case has a program to assess the performance of CSR which is devoted in the field of environment or Corporate Performance Rating Assessment Program (PROPER). In this study the disclosure of CSR is devoted to the environmental disclosure due to the performance measure used is environmental performance through PROPER (Wang et al., 2004).

Corporate Performance Rating Assessment Program (PROPER) is one of State Ministry of Environment's efforts to encourage corporate compliance in environmental management through information instruments. This program is conducted through various activities aimed at encouraging companies to comply with legislation through incentives and disincentives of reputation, and encouraging companies with good environmental performance to implement cleaner production (Ministry of Environment, 2011). The next problem is the possibility for companies to make the best possible environmental disclosure, but environmental performance may be poor. This is because companies tend to only want to be seen legitimate or good in the public eyes but the actual environmental performance may still be less good. In the end, there is a report or environmental disclosure which does not fit the truth. This is similar to that found by Chong and Freedman (2011) stating that the company tries to create a good reputation in the eyes of the public even though the actual performance is worse than revealed. It is therefore necessary to test whether the environmental responsibility has been disclosed in accordance with the company's environmental performance.

On the other hand, the government as one of the primary stakeholders, in this case issued a regulation related to the company's obligation to carry out its Social and Environmental Responsibility that is contained in Article 74 of Law No. 40 of 2007 regarding Limited Liability Company which is followed up by Government Regulation No. 47 of 2012 on Social and Environmental Responsibility of Limited Liability Company as its complement rule. With the regulation, the company is obliged to carry out the social and environmental responsibility which then its activities are reported in the annual report and accountable to

the General Meeting of Shareholders. Although some parties argue that the Social and Environmental Responsibility referred to in Government Regulation No. 47 of 2012 is less clear in explaining about the scope of social and environmental responsibility which as required, but with the issuance of government regulation is enough to be used as an excuse that the company should be more motivated to do social and environment responsibility with more better than before government regulation was issued. Based on this background, then the formulation of the problems in this research will be facilitated by elaborated into question whether environmental performance has an effect on the environmental disclosure and whether Government Regulation No. 47 of 2012 is capable of strengthening the relationship between environmental performance and the environmental disclosure.

## **2. Theoretical Review and Hypotheses**

### ***2.1. The effect of environmental performance on environmental disclosure***

One of forms of corporate responsibility to society and the environment is by doing environmental performance. According to Adams (2004), advanced companies now see environmental performance as a tool to increase ethical values in society, to meet workers' protection, response to government policies and stakeholders, and build new business policies in order to remain competitiveness in the competitive world of business. Companies that have good environmental performance tend to do environmental disclosure. In doing so, the parties concerned, such as communities, investors, government, and others, know about the company know that the company has carried out its environmental responsibilities (Deegan & Rankin, 1996; Al-Tuwaijri, Christensen & Hughes, 2004; Patten, 2002; Neu, Warsame & Pedwell, 1998). Once the parties know that the company has carried out its environmental responsibilities well, then the company will be considered legitimate and responsible.

The problem that arises is the facts from several studies which states there is no relationship between environmental performance and environmental disclosure. According to Chong and Freedman (2011), the company reveals extensive environmental reports are more likely to get good signals compared to actual environmental performance. Chong and Freedman (2011) argue that this disclosure ultimately supports the theory of legitimacy, but rejects the theory of voluntary disclosure. When the voluntary disclosure theory is applied, then the company which has bad environmental performance tends to hide the environmental disclosure. On the other hand there are several studies that prove a significant influence between environmental performance and environmental disclosure. Pratama and Rahardja (2013) states that environmental performance positively affects the environmental disclosure. This proves that extensive environmental disclosure is influenced by good environmental performance.

*H1: Environmental performance positively affects environmental disclosure*

### ***2.2. The influence of government regulation no. 47 of 2012 on the relationship between environmental performance and environmental disclosure***

With the issuance of Government Regulation No. 47 of 2012 on Social and Environmental Responsibility, the regulations requiring the company to carry out social and environmental responsibility are becoming stronger. To comply with government regulations, the company should seek to obtain the disclosure and improve the environmental performance. This is because one of the company's goals is to maximize its stakeholder benefits (Carroll, 1991; Falck & Heblich, 2007; Bhattacharya, Korschun & Sen, 2009; Du, Bhattacharya & Sen,

2010; Freeman, Wicks & Parmar, 2004). In this case, the government acts as a primary stakeholder. In addition, the company complies with the government regulation also because of its coercive nature, forcing in the sense that if the company violates the rules stated in the government regulation, then the company will be subject to legal sanctions in accordance with the provisions of legislation (Schulz & Held, 2004; Aalders, 1993; Buhmann, 2006).

The social and environmental responsibility in the regulation is clearly declared obligatory for a company that carries out its business activities in the field and/or related to natural resources and is sanctioned for the company that does not implement it (Garriga & Melé, 2004; Kleine & Von Hauff, 2009). While the environmental aspect is a part of social and environmental responsibility or CSR, the regulation on CSR will possibly affect the relationship between environmental performance on environmental disclosure. Companies that comply with Government Regulation No. 47 of 2012 will likely able to improve the environmental performance and the environmental disclosure alike. Explained by stakeholder theory and the theory of legitimacy, when companies carrying out social and environmental responsibilities well will automatically try to get a good performance and will likely disclose the results in the company sustainability report to add value to the company (Wheeler & Elkington, 2001).

*H2: Government Regulation No. 47 In 2012 strengthens the relationship between the environmental performance and environmental disclosure.*

### 3. Theoretical Framework

In this study, the independent variable is the environmental performance, while the dependent variable is the environmental disclosure. In addition to examining the effect of environmental performance on environmental disclosure, this study also examines the effect of Government Regulation No. 47 of 2012 as a moderating variable. The inclusion of government regulation as a moderating variable is to see the effect to the publication of the government regulation on the relationship between environmental performance and the environmental disclosure.

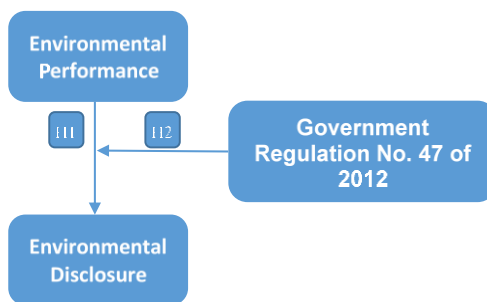


Figure 1: Research Framework

## 4. Methods

### 4.1. Variables and operational definition

The dependent variable in this study is the environmental disclosure, whereas its independent variables are environmental performance. The moderating variable is Government Regulation no. 47 of 2012. The environmental disclosure variable is operationally defined as the disclosure of information related to the environment in the company's annual report.

Environmental disclosure is measured by a score in accordance with the disclosure criteria based on the CSR index guidelines in the field of environment issued by the GRI (Global Reporting Initiative) that has been used in many countries. The number of CSR disclosure items by GRI is 79 which consisting of economy (9 items), environment (30 items), labor practices (14 items), human rights (9 items), community (8 items), and product responsibility (9 items). In this study the indicator used is only an environmental performance indicator (30 items), including biodiversity, environmental compliance, and other related information such as environmental waste and the impact of products and services.

The environmental performance was measured based on the Corporate Performance Rating Assessment Program (PROPER) issued by the Ministry of Environment. There are five categories marked with colors as ratings. The order of ratings from the smallest to the largest in PROPER is black, red, blue, green, and gold, respectively. Gold rating (score 5) is for businesses and or activities that have successfully implemented efforts to control pollution and or damage to the environment and or to carry out clean production and have achieved very satisfactory results; Green rating (score 4) is for business and or activities that have implemented efforts to control pollution and or damage to the environment and achieve better results than the requirements specified as stipulated in legislation; Blue rating (score 3) is for business or activity that has been carrying out efforts to control pollution or damage to the environment and has achieved results in accordance with the minimum requirements as stipulated in the legislation. Red rating (score 2) is for businesses and or activities that have implemented efforts to control pollution and or damage to the environment but have not reached the minimum requirements as regulated in the prevailing laws and regulations. The Black rating (score 1) is for businesses and/or activities that have not carried out significant pollution control and/or environmental damage measures. This study used ordinal data is the measurement of environmental performance using a score of 1 to 5. For companies that have many subsidiaries and get a different rating rank, then in this study the score is obtained by calculating the average value. Since PROPER score is in ordinal data form, it will be converted into interval data by using method of MSI (Method of Successive Interval), because in the regression analysis it is not allowed to use nominal or ordinal (non-metric) data.

Government Regulation no. 47 of 2012 on Corporate Social and Environmental Responsibility of Limited Liability Companies is a regulation from the government that contains the company's obligation to carry out activities of social and environmental responsibility. The CSR is required to a limited liability company which business activities are activities in the field and/or related to natural resources. In the regression analysis, this variable is assessed by the category of dummy variable (0 and 1). Score 0 is to represent companies that issue sustainability reports prior to the issuance of government regulation, while 1 is to represent the company that issued the sustainability report after the issuance.

#### **4.2. Sampling**

The sample of this research is taken by using purposive sampling technique which is manufacturing company, mining and plantation which listed in Indonesia Stock Exchange and which followed the Program of Rating of Company Performance in Environmental Management (PROPER) in 2010-2013 and published annual financial report and/or sustainability report in 2010-2013.

#### **4.3. Data collection**

The type of data in this study is secondary data, i.e. data obtained from other parties in the form of publication. The source of the data in this study is from publication of the annual report and sustainability report of each of company listed in the Indonesia Stock Exchange

(IDX) and data PROPER as of 2010 -201 3 taken from the website of the Ministry of Environment. To obtain environmental performance and environmental disclosure data, data collection is done by tracking annual report documents, sustainability reports, and PROPER. In addition, for the environmental disclosure, this study empirically used instrument in the form of check list items regarding the disclosure from GRI environmental indicators. Government regulation is only used as a marker of whether company's annual reports and/or sustainability report before 2012 and thereafter. It is worth noting that 2012 was the time of enactment of this government regulation.

#### 4.4. Data analysis

The method of analysis is performed in several ways. Descriptive statistics provide an overview or description of data viewed from mean, standard deviation, variance, maximum, minimum, sum, range, kurtosis and skewness (Ghozali, 2011). The classical assumption test for ANOVA was performed by normality test, heteroscedasticity. The regression model derived from the Ordinary Least Square (OLS ) method was conducted to produce the best linear unbiased estimate (BLUE ) estimator.

#### 4.5. Hypothesis testing

In testing the hypothesis, this study used regression analysis with moderating variables. There are 2 regression models that will be used. The first model used to measure the strength of the influence of independent variable to the dependent one and may indicate the direction of that influence. The second model is used to see the effect of moderating variable on the relationship between the independent and dependent variable. The equations to be tested are as follows:

$$\text{Ln. ED} = \alpha + \beta_1 \text{ EP} + \varepsilon \quad (1)$$

$$\text{Ln. ED} = \alpha + \beta_1 \text{ Ln. EP} + \beta_2 \text{ GR} + \beta_3 \text{ EP.GR} + \varepsilon \quad (2)$$

In which: Ln. ED = Natural Logarithm of Environmental Disclosure Ln. EP = Natural Logarithm of Environmental Performance EP = Environmental Performance GR = Government Regulation No. 47 of 2012 EP.GR = Environmental Performance x Environmental Disclosure  $\alpha$  = Constant  $\beta$  = Coefficient  $\varepsilon$  = Error.

## 5. Results

### 5.1. Description of research object

Companies that become the object of this study are all manufacturing, mining, and plantation companies listed on the Indonesian Stock Exchange and included in the PROPER of Ministry of Environment in the 2010 to 2013. This research focuses on corporate social and environmental responsibility, so that the selection of this sector is considered suitable because of the environment-related business field. In this research, the object of research is chosen by purposive sampling method. The object of this study is the annual report contained in the website of IDX or in that of related companies, sustainability report contained in the website of IDX or related companies, and PROPER issued by the Ministry of Environment. Total manufacturing, mining and plantation companies are 158. By purposive sampling criteria and within 3 years of observations, the total sample becomes 92 (Table 1).

**Table 1:** Selection Process of Research Sample

Process/year	2010	2011	2012	2013
Number of manufacturing, mining, and plantation companies	158	158	158	158
Number of manufacturing, mining and plantation companies not included in proper	(114)	(108)	(106)	(103)
Having incomplete data	(28)	(26)	(15)	(40)
Total sample	16	24	37	15

Since in the time of research, many companies had not participated in PROPER and had incomplete annual reports, or had not published their annual report or sustainability report, the total of companies included as sample is quite limited.

### 5.2. Description statistics

The environmental performance variable is measured by the PROPER score, initially reflected with color symbols and in this study, it was replaced with the 1-5 score. There are no sample gets the score of 1, so in the table the minimum value indicates the point 2, with mean value being 3.171. Accordingly, since the point show the score 3 (blue), it indicates that the selected companies meets the standard criteria of PROPER.

**Table 2:** Descriptive Statistics

	N	Min	Max	Mean	Std. Dev.
Environmental performance	92	2	5	3.17122	.651854
Environmental disclosure	92	1	30	8.48	7.728
Government regulation	92	0	1	.5652	.49844
Valid n (listwise)	92				

The variable of environmental disclosure as measured by a score of GRI in an environmental field indicates an average of 8.48, with the highest total score is 30 points. This suggests that sample has poor report on environmental reports. The variable of Government Regulation, using dummy measurement has the average score of 0.5652 (Table 2). Therefore, the proportion of the number of companies issuing more annual sustainability reports after Government Regulation No. 47 of 2012 than before the government regulation.

### 5.3. Normality test

The normality test aims to test whether in the regression model the residual variable has a normal distribution (Ghozali, 2011). A good regression model is supposed to have normal data distribution. To test this data, Kolmogorov-Smirnov (KS) with non-parametric statistical tests was used.

**Table 3:** One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual (Model 1)	Unstandardized Residual (Model 2)
N		92	
Normal Parameters <sup>a, b</sup>	Mean	.0000000	.0000000
	Std. Deviation	.83555204	.85026706
Most Extreme Differences	Absolute	.063	.098
	Positive	.060	.081

	Negative	-.063	-.098
Kolmogorov-Smirnov Z		.605	.938
Asymp. Sig. (2-tailed)		.857	.342

From the table 3, it can be seen that the regression model 1 has the KS value equal to 0.605 and significant at 0.857. Due to the significant value of  $0.857 > 0.05$  as the basis of normality, it means that the data residuals for regression models used to observe the effect of environmental performance on environmental disclosure is normally distributed. The normality test results of regression model 2 has the KS value of 0.938 and significant at 0.342, which means that residual data in the regression model used to see the effect of government regulation on the relationship between environmental performance and environmental disclosure is normally distributed.

#### 5.4. Heteroscedasticity test

Heteroscedasticity test aims to test whether in the regression model there is a variance inequality of the residual of one observation to another observation (Ghozali, 2011). A good regression model is that there is no heteroscedasticity. To test it, the Glejser test proposing to regress residual absolute values to independent variables is used.

**Tabel 4:** Glejser Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Model 1	(Constant)	.792	.156		5.062	.000
	EP	-.040	.056	-.076	-.724	.471
Model 2	(Constant)	.998	.231		4.323	.000
	Ln.EP	-.149	.215	-.123	-.693	.490
	ED	-.504	.343	-.527	-1.470	.145
	EP.ED	.087	.119	.261	.736	.463

\*EP: environmental performance; ED: environmental disclosure; GR: Government Regulation No. 47 of 2012

Glejser test results on regression model 1 is by analyzing the value of significance of independent variable, which is only environmental performance (EP). The significance value is 0.471 ( $> 0.05$ ), so it can be concluded that model 1 used to analyze the effect of environmental performance on environmental disclosure has no heteroscedasticity. Moreover, the independent variables used in the regression model 2 are environmental performance (Ln.EP), government regulation (GR), and interaction variables between environmental performance and environmental disclosure (EP.ED). The test shows that the significance values of all independent variables are 0.490, 0.145, and 0.463 ( $> 0.05$ ), respectively. Thus, there are no heteroscedasticity in model 2 used to see the effect of regulation on the relationship between environmental performance and environmental disclosure (Table 4).

#### 5.5. Autocorrelation test

The autocorrelation test aims to test whether in linear regression model there is a correlation between error in  $t$  period and error in  $t-1$  period (Ghozali, 2011). This test is generally performed for time-based data. To test the autocorrelation, the Run Test was used to see if the residual data occurs randomly. A good model is supposed to have the value of significance above 0.05.



**Table 5:** Autocorrelation Test

<i>Assessment</i>	<i>Model 1</i>	<i>Model 2</i>
<i>Test Value<sup>a</sup></i>	.56	.69
<i>Cases &lt; Test Value</i>	45	46
<i>Cases &gt;= Test Value</i>	47	46
<i>Total Cases</i>	92	92
<i>Number of Runs</i>	40	48
<i>Z</i>	-1.464	.210
<i>Asymp. Sig. (2-tailed)</i>	.143	.834

Based on the results of Run Test in Table 5, it can be seen that the value of significance in model 1 of 0.143 (>0.05), while in model 2 the value is 0.834. As a result, there is no autocorrelation in both regression models.

**5.6. Regression test**

The table 6 shows the t test results for regression for model 1 and model 2. The first regression model is used to see the effect of environmental performance to environmental disclosure, while model 2 used to see the effect of moderating variable (Government Regulation) on the relationship between independent variable of environmental performance to the dependent variable of environmental disclosure. Based on the test results, the t value of independent variable is 5.367 with a significance of 0.000 or smaller than 0.05, meaning that the environmental performance significantly influences the environmental disclosure. Then by looking at the value of regression coefficient with a positive direction of 0.528, environmental performance has a positive effect on the environmental disclosure. Thus, hypothesis one stating that there is a positive effect of environmental performance on the environmental disclosure is accepted.

**Table 6:** Regression test

<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
		Beta	Std. Error	Beta		
<b>1</b>	(Constant)	.303	.277		1.094	.277
	EP	.528	.098	.492	5.367	.000
<b>2</b>	(Constant)	1.331	.428		3.107	.003
	Ln.EP	.695	.399	.285	1.743	.085
	GR	-.763	.637	-.396	-	.234
	EP.GR	.124	.220	.184	1.198	.575

Dependent Variable: Ln.ED  
 EP: environmental performance; ED: environmental disclosure; GR: Government Regulation No. 47 of 2012  
 R<sup>2</sup>=0.234 (model 1)  
 R<sup>2</sup>=0.189 (model 2)

Based on the test results, the interaction value of variables (EP.GR) in the model 2 is 0.182 or above 0.05, and t value is 0.563 with a significance of 0.575 or greater than 0.05, meaning that moderating variable of the Government Regulation has no significant effect on strengthening the relationship between environmental performance (Ln. EP) and the environmental disclosure. on environmental disclosure (Ln.ED). Thus, the hypothesis two stating that there is a significant effect of the Government Regulation in strengthening the

relationship between environmental performance and the environmental disclosure is rejected.

Moreover, the table shows an adjusted value of R<sup>2</sup> of 0.234 in model 1. This means that the regression model has predictability result of 23 percent variation of the independent variable on the dependent, while the 77 percent is explained by other variables which are not included in this study. Furthermore, the adjusted R<sup>2</sup> for model 2 is 0.189 which means that the regression model has 18.9 variation of the dependent variable that can be explained by the independent.

## 6. Discussion

The results show that there is a positive influence of environmental performance on environmental disclosure. This shows that the size of the environmental performance positively affects environmental disclosure. The existence of this effect may be due to good environmental performance of respected companies, so the companies are willing to disclose the environmental report. This is consistent with the statement of Clarkson et al. (2008) and Chong and Freedman (2011) that based on the voluntary disclosure theory, companies having a good performance will reveal environmental report.

The second hypothesis which states that Government Regulation No. 47 of 2012 is capable to strengthening the relationship between environmental performance on the environmental disclosure is not provable. Theoretically, it is known that one of the areas of CSR is that contained in the environmental aspect, so that it can be linked the relationship between the environmental performance and environmental disclosure in terms of CSR rules contained in regulation. Basically, the government regulation is not stated directly about the environmental performance and environmental disclosure. It only contains a provision that requires the company that its business related to natural resources to carry out the environmental and social responsibility. In addition, the non-acceptance of hypothesis 2 may be due to normative rules in Government Regulation No. 47 of 2012 on Company which only requires companies to carry out environmental and social responsibility under the law. Whereas, the laws governing the environment itself are very broad in scope and are divided into many environmental categories. From, it is possible there is a mismatch between the environmental criteria used in this study with the environmental criteria in the law. Moreover, it is still possible that Government Regulation No. 47 of 2012 has nothing to do with environmental performance indicators or environmental disclosures used in this study. In addition to the differences in environmental criteria used, other possibilities causing the absence of influence of Government Regulation No. 47 of 2012 is possible because this regulation has not been implemented by the company, or has not been obeyed. Although the regulations contained in the Government Regulation are valid since the date of April 4, 2012, the company may still need to make adjustments.

## 7. Conclusion

The results of this study also accept the stakeholder theory in which companies seek to maximize profits for stakeholder interest. In this case, the company will strive to implement its environmental responsibilities. However, in this study, it cannot prove whether committed company in implementing the environmental responsibilities is in accordance with the theory of stake holders, especially in terms comply with the regulations issued from the government as primary stakeholder. This is because the results of this research cannot prove the significant influence of Government Regulation No. 47 of 2012 in the relationship between environmental performance and environmental disclosure.

## 8. Limitations and Suggestions

The limitations in this study are that only few companies use disclosure criteria using GRI. On other hand, the disclosure criteria with GRI are more commonly found in sustainability reports than annual reports. Future studies is expected to add the variable of Good Corporate Governance as the independent variable or a moderator. This is because good corporate governance is believed to give effect to the environmental performance and environmental disclosure. The influence can be explained by 2 of 5 GCG principles namely transparency and responsibility principles. While in this research is still using G3, the future study can use the latest GRI standard of G4 to measure the environmental disclosure. In addition, further research is expected to explore other relevant standards to assess environmental disclosure.

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