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THE RELATIONSHIP BETWEEN ENVIRONMENTAL PERFORMANCE AND THE EXTENT OF ENVIRONMENTAL DISCLOSURE

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ABSTRACT

This study examines the relationship between environmental performance and the extent of environmental disclosure. Sample of this study consists of thirty-five high profile companies. The environmental performance is measured based on the results of the PROPER assessment and the extent of environmental disclosure index by using GRI checklist items. This research applies content analysis, descriptive and inferential statistical analysis. The result shows that on average, the extent of environmental disclosure is low (22.5%). Mining companies provide highest environmental disclosure (58.2%) followed by chemicals (21.4%), utilities (19.0%), pulp and papers (16.5%), industrial (11.0%), and oil and gas (4.2%). The analysis also presents that environmental performance doesn't have effect on level of environmental disclosure. This result suggests that high environmental performance may not encourage companies to communicate more environmental issues. This finding indicates that motivation for company to disclose environmental information is not always based on the legitimacy perspectives but might be as accountability form.

Keywords: environmental performance, environmental disclosure, legitimacy, high profile industry, PROPER

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1. INTRODUCTION

Currently, issues on environmental disclosure and environmental performance are still attracted the attention of academics. This is because the findings of the prior studies are still varied (Campopiano and Massis (2015); Patten, 2005; Plumlee, Brown, Hayes, and Marshall, 2015). Knowing to what extent environmental disclosure and environmental performance is important, as it can provide additional information to assess corporate performance (Clarkson, Fang, Li, and Richardson, 2013). Corporate environmental performance provides useful information to stakeholders (K.E. Hughes, 2000). Previous studies suggested that corporate environmental performance as a form of ethical actions of corporate (Cormier, Magnan, and Morard, 1993), moral responsibility (Woodward, Edwards, and Birkin, 1996), compliance with regulations, corporate longterms performance indicator (Clarkson *et al.*, 2013). One of the corporate performance indicators is financial benefits. For example, PT. Bukit Asam Tbk has financial benefits such as increased in profit, community empowerment and competitiveness after transformed from coal mining company into a provider of environmentally renewable energy (PROPER¹,2015).

¹ PROPER is an environmental management performance appraisal program based on the Ministerial Decree of State Minister for the Environment No. 35 (1995).



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The report released Program Peningkatan Kinerja Perusahaan (PROPER) in 2016 suggested that the environmental performance of Indonesian companies is still low. In addition, from 1930 companies, the majority of companies (73.68%) recently categorized as blue (fairly well). It shown by the low level of utilization of hazardous materials and toxic waste (reduce, recycle, refuse/3R) in industry sectors. For example, in 2016, the utilization of B3 in mining, oil and gas industries is only 18.16% and manufacturing is 13.46%. Based on the findings of the report, it showed that the environmental performance of Indonesian companies has not been satisfactory. The low of the performance may be caused by low of awareness and adherence to the regulations.

In terms of studies on the relationship between environmental performance and environmental disclosure, the findings of previous studies are varied. Some studies suggested that company that has a good environmental performance tend to disclose more information (Clarkson, Li, Richardson, and Vasvari, 2008, 2011; Plumlee *et al.*, 2015; Staden and Hooks, 2007). In contrast, Patten (2002) found a negative correlation between environmental performance and the extent of environmental disclosure, while Ingram and Frazier (1980) and Patten (2005) concludes there is no correlation. Due to the inconsistency of these findings, this study is aimed to investigate the relationship between environmental performance and environmental disclosure. Heirs *et al.* (2017) and (Waris *et al.*, 2017) argued that the existence of a difference public pressure in environmental responsibility between developing countries (such as Indonesia) and developed countries. This study focused on high profiles companies listed companies on Indonesia Stock Exchange (IDX) in 2016. The high profiles companies such as mining, pulp and paper, oil and gas, chemicals, utilities, were chosen as their operations have a significant impact on environment conditions (Clarkson *et al.*, 2008, 2011; Faisal and Achmad, 2014) (Hasseldine, Salama, and Toms, 2005; Patten, 2005).

2. LITERATURE REVIEW

Deegan (2007) and Hasseldine *et al.* (2005) argued that company with bad reputation will left behind by the market. Furthermore, they explain that company that is not operating in harmony with the environment and society can lead to high costs until absence of approval from community. Corporate environmental disclosure is one of media communications to stakeholders in order to legitimize corporate's operations (Cho and Patten, 2007; Neu, Warsame, and Pedwell, 1998; Patten, 2005) and fulfilling social contract by complying with regulations in order to achieve corporate accountability (Tilt, 1994; Woodward *et al.*, 1996). Environmental disclosure can also improve the perception of stakeholders about corporate environmental management (Cho and Patten, 2007). Level of sensitivity to impact of company operation on environmental may affect extent of environmental disclosure (Cowen, Ferreri, and D.Parker, 1987; Hackston and Markus J. Milne, 1996; Patten, 1991, 1992; Plumlee *et al.*, 2015). Past studies showed that company that potentially cause damage to environment such as high profile companies disclosed more information than low profile companies (Clarkson *et al.*, 2011; Clarkson *et al.*, 2013; Hasseldine *et al.*, 2005).

Environmental performance can also drive the extent of environmental disclosure. The impact of environmental performance disclosure, whether it brings favorable, neutral, or unfavorable to company performance will become company's risks (Cormier and Magnan, 1999). Environmental disclosure can be used as a means of legitimizing the company (Cho and Patten, 2007). In addition through the disclosure of the environment, the company's attempt to gain legitimacy is by participating in environmental performance assessments conducted by external parties. A good environmental performance is ideally followed by extensive disclosure. Positive correlations were found between the ratings conducted by



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external and independent party regarding the company's environmental responsibilities and the disclosure levels of CSR (Clarkson *et al.*, 2008, 2011; Plumlee *et al.*, 2015; Staden and Hooks, 2007).

The disclosure of actual performance on pollution emissions, conservation and recycling efforts provides critical information for stakeholders to assess environmental performance, assess long-term company commitment, and for investors can also be used to assess the impact of environmental compliance related to future operations and financial performance (Clarkson *et al.*, 2013). Environmental performance based on toxic emissions can be used by external management and stakeholders to examine the relationship of future environmental liability disclosure and the market value of the company's equity (K.E. Hughes, 2000). The risks caused by company's operation related with the level of environmental disclosure. Based on the information content revealed, (Cormier and Magnan, 1999) found companies producing high levels of pollution such as pulp and paper revealed more environmental information than oil, chemical and steel, metals and mining companies. Pulp and paper mills become the target of pollution-consuming stakeholders, because they consume large amounts of water and are usually located near rivers that are often located near population centers. Plumlee *et al.* (2015) also shows that industries with a large impact on the environment have higher disclosure values and firms more often disclose positive environmental information than neutral and negative ones. Cho and Patten (2007) show different findings. Environmental-sensitive companies often disclose negative information rather than neutral disclosure, but vice versa for companies in insensitive industries, in order to improve stakeholders' perceptions of environmental management.

The former researches showed that the increasing of environmental performance disclosure correlate with the extent of environmental disclosure. A positive correlation between an external rating based on the UK Index Environmental Engagement and the extent of disclosure was found (Staden and Hooks, 2007). These findings suggest that environmental disclosure reflects company responsibility to the environment and is a form of support for the development of legitimacy theories. Result findings of (Clarkson *et al.*, 2008) and (Clarkson *et al.*, 2011) are consistent, i.e. there is a positive relationship between environmental performance and the level of discretionary environmental disclosure for the five companies classified as the most polluting industry in the United States. High pollution-generating industries, based on Toxics Release Inventory (TRI) measurements, provide a wider discretionary environment disclosure, and vice versa. Variations in disclosure levels among the five types of industries (i.e. pulp and paper, oil refineries, chemical and steel, metals, and mining) aligned also with findings (Plumlee *et al.*, 2015). These results show that the company seeks to legitimize, if its activities threaten the environment (Clarkson *et al.*, 2011).

Plumlee *et al.* (2015) also found a positive correlation between environmental performance and environmental disclosure. In his research, companies with good environmental performance have good environmental disclosure, whereas companies with poor environmental performance have poor environmental disclosures as well. Good environmental performance is measured by the sum of environmental performance strengths, while poor environmental performance is measured by the number of concerns of the company's environmental performance (the sum of environmental performance concerns). Environmental performance instruments refer to Kinder, Lydenberg, and Domini's (KLD's) Socrates database.

3. RESEARCH METHOD

This research is characterized as descriptive and exploratory, as seek to identify the application of content analysis, descriptive statistics and correlation analysis. This research takes a quantitative approach



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to examine the relationship between Environmental Disclosure Index (ENVID) and Environmental Performance. Such an approach is used because it is focused on explaining associations between the two variables and addressing specific questions about a clearly defined topic. By using a quantitative approach in such a disclosure study, the findings may be more objective and informative for stakeholders and other parties. The stated purpose of this research is to describe the environmental performance, the extent of environmental disclosure and analyze the relationship between environmental performance and the extent of environmental disclosure of companies. Legitimacy theory is the theoretical framework within which these purposes will be pursued. The research approach adopted to achieve these purposes encompasses population of the study, data collection, measurement variables, and statistical analysis.

This study is a population study. It means that all members of the population are observed in accordance with the research variables. Thus there is no sampling, and therefore the results of the analysis are the conclusions for the population. The population of this study is public companies in Indonesia that cause high pollution for the environment, namely companies engaged in the field of pulp and paper, chemicals, oil and gas, metals and mining, and utilities as investigated by (Clarkson *et al.*, 2008, 2011; Clarkson *et al.*, 2013). The companies were also classified based on PROPER criteria and Bloomberg database. The PROPER classification include the following type of companies, that are, chemicals, pulp and paper, industrial metal and mining, mining, oil and gas, and utilities (PROPER, 2016), while classification according to Bloomberg database include basic industry and chemicals (animal feed; cement, ceramics, and glass porcelain; chemicals; pulps and paper; metal and allied products); mining (crude petroleum and natural gas production, coal mining, and metal and mineral mining) and infrastructure utility & Transportation (Bloomberg, 2018). Another criterion for members of the population is companies listed in the 2016 PROPER attendance list which are also listed in Indonesia Stock Exchange (BEI) for the period of 2016 and publish their annual report 2016 through www.idx.co.id.

There are three steps in determine the member of the target population. First, identify the membership criteria based on (Clarkson *et al.*, 2008, 2011; Clarkson *et al.*, 2013) and also PROPER (2016). In this step, among 1930 companies listed in PROPER 2016, there are 578 companies include 52 chemical companies, 31 pulp and paper companies, 63 industrial metal dan mining companies, 88 mining companies, 216 oil and gas companies, and 128 utilities companies. The Second step, we identify companies that follow PROPER 2016 and at the sometimes are also listed in BEI 2016. This second step result 22 companies. Finally, in the third step we identify companies based on (Clarkson *et al.*, 2008, 2011; Clarkson *et al.*, 2013) Clarkson *et al.*, 2008) criteria adjusted by Bloomberg (2018) classification which result 35 companies. The list of companies that are member of the population is in Appendix 1. The use of 2016 data is due to the importance of a one-year delay to observe company responses to GRI statements (2015) that reports published after 31 December 2015 should be prepared in accordance with G4 guidelines.

After selecting the companies and in order to operationalize this study, the data were collected. 35 annual report from 35 companies were read and content analysis was applied to identify the required data. It should be noted that not all of the 578 high risk companies listed in PROPER were included in the target population. It is because the PROPER assesment can be followed by subsidiary companies or company branches at a specific area, but the company annual reporting listed in BEI is done by the parent company. It is why 578 companies reduced to 35 companies as the member of the target population. This research was done by assumption that if one parent company has PROPER rank from more than one subsidiary company in 2016 than we choose the highest rank as the data.



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In order to analyze the data, we have used the content analysis technique which seeks to reveal the description of messages contents based on systematic and objectives procedure (Bardin, 2004 as cited in Altoe, Panhoca, and Espejo (2017)). The information content in the messages was recorded (measured). The recording is the specific segment of content that characterized by placing it in a given category.

This research focusing on two main variables, that are, environmental performance and the extent of environmental disclosure. The measurement of environmental performance research variables is taken from the PROPER 2016 assessment data under the control of the Ministry of Environment and Forestry of the Republic of Indonesia. Environmental performance is measured by the following rankings: score of five (gold predicate / excellent), score of four (green predicate / good), score of three (blue predicate / enough), score 2 (red predicate / bad), and score 1 (black predicate / very bad).

Measurement of the extent of environmental disclosure refers to the indicators according to GRI 2013 that are presented in detail in Appendix 2. The reasons for the use of GRI guidelines by 2013 because they meet global standard qualifications that are internationally accepted and universal (Laine, 2009). Schaltegger (1997) adds that internationally recognized ecological standards have the certainty and guarantee the minimum level of information quality. Thus, the measure indicator of the extension levels has met the validity test requirements. The results of the measurement of the extension levels are expressed in index numbers. Index provides a uniform system of input and coding and is essential for organizing data in each study for a computerized database (Clarkson, 1995). Furthermore, index was given generally to check for the presence or absence of specific items of information. The Environmental Disclosure Index for company j (ENVD $_j$) is defined as follows:

$$ENVD_j = \frac{\sum_{i=1}^{n_j} x_{ij}}{n_j}, \quad x_{ij} = \begin{cases} 1 & , \text{if } i \text{ th item is disclosed} \\ 0 & , \text{if } i \text{ th item is not disclosed} \end{cases}$$

This research employ several statistical technique to pursue the objectives of the study. Descriptive statistics and cross classification technique will be used to elaborate the characteristic of the companies based on several aspect such as environmental risk categories that mostly disclosed by the companies. It can also be used to study the trend and indeph analysis concerning the consistency of environmental performance and the extent of environmental disclosure. Gamma coefficient is used as the main statistical techniques to explore wether there is ascociation between environmental performance and the extent of environmental disclosure or not. This nonparametric techniques proposed by Goodman and Kruskal (1979). is used because we consider variable that measured in ordinal scale i.e the environmental performance. To do so, the disclosure index measured in ratio scale has to be converted into ordinal scale by applying rank transformation so that the two variables both have the same scale of measurement.

4. FINDING AND DISCUSSIONS

The aims of this study were to explore the level of environmental disclosure and the relationship between environmental performance and environmental disclosure in high risk population companies in Indonesia. This section provides an overview of the environmental disclosure and environmental performance of the 35 population companies that contains many types of company as shown in Figure 1. The type of companies is dominated by chemical and industrial metal and mining, followed by mining, pulp and paper utilities and finally oil and gas.



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Figure 1. Number companies by type of industry

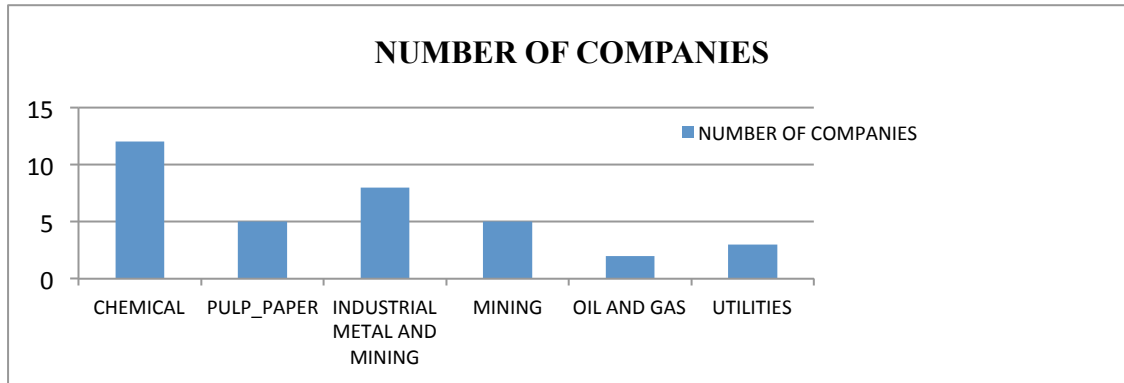


Table 1. PROPER rank by type of industry

TYPE OF COMPANY	PROPER RANK				TOTAL
	RED	BLUE	GREEN	GOLD	
CHEMICAL	0	9	3	0	12
PULP AND PAPER	0	5	0	0	5
INDUSTRIAL AND MINING	1	7	0	0	8
MINING	0	2	2	1	5
OIL AND GAS	0	1	0	1	2
UTILITIES	1	2	0	0	3
TOTAL	2	26	5	2	35
Percentage (%)	5.7	74.3	14.3	5.7	

Based on environmental performance represent by PROPER rank (Table 1), most companies achieve Blue (74.3%), followed by Green (14.3%), Red and Gold 5.7% each. It shows that most of the target population companies have already follow the regulation and a small number of companies (2 companies) has already exceed the regulation and having efficient resources management and well implementation in social responsibility. The two companies that achieve gold rank show their excellency and consistency in environmental management, ethics, and social responsibility. This finding shows that Indonesia high risk companies have already follow the Indonesia environmental management regulation (PROPER, 2016). This finding is also support the former result that regulation may improve the environmental performance (Ika *et al.*, 2017). The small number of companies that achieve green and gold rank indicates that the implementation of social responsibility normatively is still challenging (Ketaren, 2014). Furthermore, programs that empowering the environmental awareness is needed (Waris *et al.*, 2017).



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Table 3. Descriptive statistics by PROPER rank

PROPER rank	Mean of disclosure index	Standard deviation
RED	0.114	0.081
BLUE	0.186	0.171
GREEN	0.417	0.233
GOLD	0.357	0.384
TOTAL	0.225	

Table 3 shows the mean of disclosure index based on their proper rank. Generally, it indicates the low level of environmental disclosure (grand mean 0.2245). This fact support the former research result that were done in Indonesia (Mirfazli, 2008; Setiawan and Darmawan, 2011). The reasons of this condition can be describe as follows, 1) the implementation of environment disclosure in Indonesia is still voluntary and haven't yet regulate base on Finance Accounting Standard (SAK) (Fauzi, 2014). The consequence is that company report the disclosure content freely (Laan, 2009); 2) The Company has only few social activity (Mirfazli, 2008); 3) CSR's disclosure content in Indonesia provide only information about clarity activities, philanthropy and social involvement (Fauzi, 2014; Gunawan, 2007; Hermawan and Mulyawan, 2014; Sharma, 2013) and most of them have incomplete (quantitatively and qualitatively) information disclosure with respect to material, energy, water, biodiversity, emission, waste or garbage, product and services, compliance, pollution, expenditure and environmental investment, supplier assement environmental, and environmental complaint mechanism, as global requirement (GRI, 2015), and 4) environmental disclosure haven't yet treated as a measure of environmental performance like finance performance which happened in developed countries (Sharma, 2013). Furthermore, Waris *et al.* (2017) say that in developing country people give lower pressure to the company in term of environmental responsibility due to the lack of environmental awareness rather than in developed countries.

Table 4 shows the number and their percentage of companies that disclose any categories with respect to environmental issues. The table shows that waste and garbage is disclosed by 68.6% companies. It means that waste and garbage is the most important category that prioritized by companies to be disclosed. Infact, there are four other categories that also have quite high priority (more than 50%), i.e emission, energy, expenditure and environmental investment. This findings indicate that companies have implement good environmental management system to improve the absolute efficiency of reducing waste (PROPER, 2015). Also, it support Clarkson *et al.* (2013) who stated that the performance indicator disclosure with respect to emission, actual pollution, conservation, and recycle activities give critical information to the stakeholders in evaluate the long term environmental performance and environmental compliance impact.

Table 4. Descriptive statistics by disclosure category

Category	Number of company	%	Category	Number of company	%	Category	Number of company	%
Material	6	17.1	emmission	22	62.9	transportation	5	14.3



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Energy	22	62.9	effluents and waste	24	68.6	expenditure and environmental investment	19	54.3
Water	9	25.7	product and service	15	42.9	supplier	9	25.7
Biodiversity	20	57.1	compliance	13	37.1	complaint mechanism	9	25.7

Table 5 shows the cross classification between the type of company and the environmental disclosure represented by the category of the extent of disclosure. In the last column present the mean value of disclosure index. It shows that mining company is the most (58.29%) in disclosing environmental information followed by chemical (21.43%) and others with less than 20 percent on the average. Based on Table 5, there is a big discrepancy between type of company in disclose environmental information which is also consistent with Tan, Benni, and Liani (2016) and Trireksani and Djajadikerta (2016). Test of association between type of company and the category of the extent of disclosure using contingency coefficient (Table 6) shows the same conclusion (significant under $\alpha=0.05$).

Table 5. A cross classification between type of company and environmental disclosure

Type of Company	The category of the extent of disclosure			Total number of company	Mean of disclosure index
	1	2	3		
CHEMICAL	9	3	0	12	0.2143
PULP AND PAPER	4	1	0	5	0.1657
INDUSTRIAL AND MINING	8	0	0	8	0.1107
MINING	0	1	4	5	0.5829
OIL AND GAS	2	0	0	2	0.0429
UTILITIES	2	1	0	3	0.1905
Total	25	6	4	35	

Table 6. The extent of disclosure using contingency coefficient

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	0.688	0.000

The mining company presented moderate level of disclosure information support is consistent with Trireksani and Djajadikerta (2016). The mining company disclose more than other type of company because they have greater operation area that may impact to the larger environment. This finding support the legitimacy theory that the greater the impact of company to the environment, the more widespread its environmental disclosure (Clarkson *et al.*, 2008).



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Table 7. Extent of Disclosure by category

PROPER RANK	The category of the extent of disclosure			
	1	2	3	Total
RED	2	0	0	2
BLUE	20	5	1	26
GREEN	2	3	0	5
GOLD	1	0	1	2
Total	25	8	2	35

Table 7 shows cross classification between environmental performance which is represented by PROPER RANK and environmental disclosure which is represented by the category of the extent of disclosure. Numbers in the cells is the number of company satisfied the cross category. The extent of disclosure is categorized into three categories in term of the percentage of environmental indicator being disclosed, i.e 1= less than 30%, 2=disclose 30%-60%, and 3=disclose more then 60%. Generally, the table demonstrate the awareness of companies in disclosing environmental issues in their annual report. Most of the companies, which are 25 out of 35 (71.42%), disclose only less than 30% with respect to environmental issues including 20 companies having blue PROPER rank and, unfortunately, include one company with gold rank. On the otherhand, there is one company with gold rank disclose more than 60% as what we expected that PROPER rank should be consistent with the extent of disclosure. This finding shows that companies having good environmental performance (blue, green, and gold) are not otomatically have high percentage (more information) in disclosing the environmental issues (Waras, 2017). Most of the companies inform their environmental performance in the annual report but do not describe their environmental activities in detail.

The above description is also supported by the statistical test of association between environmental performance and environmental disclosure. The Gamma coefficient of association showed in table 4.7 is not significant under $\alpha=0.05$.

Table 8. The Gamma Coefficient of Association

Gamma	Asymp. Std. Error	Approx. Tb	Approx. Sig.
0.642	0.215	1.847	0.065

Strictly speaking, environmental performance is not associated with environmental disclosure. This finding is the same as the conclusion resulted by Sutantoputra, Lindorff, and Johnson (2012) who say that there is no evidence that good performers disclose more as a way of promoting themselves and separating themselves from poor performance.

Sutantoputra *et al.* (2012) state that, in general (not specifically), disclosure is a company way of promoting environmental awareness to the society and there is an untested complex range of forces that imply non-significance relationship between environmental performance and environmental disclosure. The low extent of environmental disclosure is also show that most of the companies do not reference GRI



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as a reporting standard. It means that most of company annual report haven't shown sustainability oriented yet. Some researches showed that social responsibility disclosure content in Indonesia is dominated by information about clarity activities, philanthropy and social involvement (Fauzi, 2014; Gunawan, 2007; Hermawan and Mulyawan, 2014) and that Indonesia companies haven't treat equivalently environmental performance, social performance, and finance performance like in developed countries (Sharma, 2013). The low level of environmental disclosure found in this research is also matching with the fact found by Waris *et al.* (2017) that community in developing countries have low awareness with respect to the importance of environmental disclosure.

5. CONCLUSION, LIMITATION AND IMPLICATION

Based on PROPER ranking (PROPER, 2016), most companies have blue rank in environmental management (according to the law), the second largest is green (environmental management goes beyond regulation and efficient in utilizing resources and performs social responsibility well), and the smallest is gold rank (superior and consistent in environmental management and ethical and responsible to the community) and red (environmental management is not in accordance with legislation).

The extent of environmental disclosure referred to GRI (2013) is low. The extent of disclosure and the content varies over type of company. The low level of disclosure indicates that most companies have not follow the standard of sustainability reporting, since the disclosure is still voluntary. Based on disclosure index, the mining companies present the broadest disclosure rate followed by chemical companies, utilities companies, pulp and paper companies, industrial metal and mining companies, and oil and gas companies. Based on the category of environmental disclosure contents, most companies disclose about waste and garbage issues followed by emissions and energy, biodiversity, environmental expenditures and investments. The relatively few are products and services, suppliers, and complaints mechanism, while the least is about material and transportation.

This study found no correlation between environmental performance and the extent of environmental disclosure. That is, high company performance is not always followed by extensive disclosure, and vice versa. The fact that the company's environmental performance and the extent of environmental disclosure are uncorrelated, while environmental performance is still predominantly blue and the environmental disclosure is low level may explain that the company's environmental activities are intended to enhance the company's reputation that ultimately achieves legitimacy.

The result of this study is limited on a small number of target population and focusing on the high risk company with respect to environment. In the next study need to increase the size of the population, the study period, and add the type of company that has a low risk. The environmental performance used in this study is based on the results of the environmental management performance assessment (PROPER) rating in 2016. In the next research can be developed by using other environmental performance measurements, such as CO₂ concentration and greenhouse gas emission rate.

This study show that one parent company can follow the rating program performance assessment of environmental management as much as subsidiary companies or the number of operating units. Therefore, the ranking of a company varies. This study assumes that the best ranking of environmental performance achieved is being used as the data analysis. Given the use of these assumptions, then in the next research we suggest to use rating assumption that better represents the condition of the company.

In this study, the measurement of the extent of environmental disclosure use the following rule, that is by giving a score of one when the annual report contain information and zero otherwise based on the sub categories of GRI. Considering the contents in each subcategory contains many elements, a score



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of one will be given when there is at least one element disclose by the company. In subsequent research, scoring may use more gradations in the form of a more representative scale.

Awareness of environmental management by high risk companies with respect to the environment is increasing. The awareness is showed by the fact that most companies have achieved good enough ratings until very well. In contrast, the facts show that the extent of environmental disclosure is still low. One reason is that environmental disclosure for companies in Indonesia is still voluntary. Sutantoputra *et al.* (2012) also states that voluntary disclosure is not a reliable way of assessing company environmental behavior. For this reason, the government needs to introduce mandatory reporting that will produce publicly available information on the company's environmental performance with various indicators. The implication is to encourage mandatory disclosure of the environment, so that disclosure is not only broad but increasingly qualified.

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