FINANCIAL PERFORMANCE ANALYSIS OF COMPANIES IN INDONESIA WITH SECOND ORDER SEM-PLS METHOD
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Abstract
This study aims to determine the pattern of environmental disclosure, environmental performance and economic performance in manufacturing companies listed on the Indonesia Stock Exchange 2013-2016. This research used second order SEM-PLS method. The results showed that the indicators that can measure the economic performance are the ratio of profitability, solvency ratio and liquidity ratio. The result of hypothesis testing shows that environmental performance has an effect on economic disclosure, environmental disclosure has an effect on economic performance and environmental disclosure mediates environmental performance relation to economic performance. The influence of environmental performance on environmental disclosure is strong, while the influence of environmental performance and environmental disclosure to economic performance is weak. The results of the research inform that the assessment of environmental performance is an important aspect in assessing a company to improve corporate image in the eyes of the public so as to attract investors to invest capital that will impact on improving corporate financial performance.

Introduction
The corporate social responsibility disclosure principle is in line with the corporate social responsibility (CSR) principle which emphasizes that the company not only focuses its attention on stockholders and bondholders who directly contribute to the company but also discloses the company's social activities and environmental performance. Transparency of CSR disclosure in financial report becomes important for stakeholder to analyze how far attention and responsibility of company in doing business. Expense for CSR implementation which become burden and reduce income so that company profit level will decrease, but by implementing CSR, image the company will get better so that the loyalty of consumers and stakeholders is getting higher. The company considers that the role of stakeholders is very influential for the company so that it can affect and be considered in disclosing an information in their financial statements. Stakeholders are a key consideration for companies because they hold a strong position within the company [1].

The company's environmental performance can be assessed by looking at the rank of color obtained by the company through the Corporate Performance Rating (PROPER) organized by the Ministry of Environment. Environmental performance assessed through PROPER has an effect on CSR disclosure. Companies with good environmental performance are also shown to have greater social awareness both to the community and to their workforce [2]. The better the environmental activities undertaken by the company will lead to increased confidence in the eyes of stakeholders that will improve the financial performance of the company. [3] concludes that Corporate Environmental Disclosure is currently still voluntary, causing mutual accusations and throwing responsibility between government, corporations and society against environmental damage. This phenomenon occurs because the disclosure is considered self-serving and not careful in reporting the financial performance of the company. Now days, there is no universally agreed system and format based on the theory of stakeholders seen from the measurement of environmental disclosure and environmental performance have an effect on the economic performance.

Several previous studies have different opinions in analyzing or examining the relationship between environmental performance, environmental disclosure and economic performance. [4,5] found that environmental disclosure and environmental performance have an effect on economic performance while [6,7] found that environmental disclosure and environmental performance does not affect economic performance. The results of
other studies showing different results, such as [8,9] are environmental disclosure with environmental performance, while [10] found that environmental disclosure has no effect on environmental performance.

In this study, the environmental disclosure measurements use Corporate Social Responsibility Disclosure Index based on Global Reporting Initiatives (GRI) indicator as done by some previous research, such as [11,12]. Environmental performance measurements in the study using PROPER. Some previous researchers using PROPER to measure environmental performance include [4,13]. While the measurement of economic performance in this research use 4 financial ratios, that is, profitability ratio, solvency ratio, liquidity ratio and activity ratio based on [14,15].

Multiple linear regression is one of the parametric regression with the assumption of test to get a good model called BLUE (Best Linier Un bias Estimation), that is, a condition of model that can be believed and able to represent its true conditions. If one of the assumptions is not met, then the model obtained is less reliable in its accuracy. SEM-PLS is one of the non-parametric regression models. SEM-PLS does not require classical assumptions. SEM-PLS can also construct structural equations as well as the validity, reliability and influence relations between latent variables. Several research on factors influencing financial performance using SEM-PLS method, such as [16,17,18,19]. Most researchers use multiple linear regression method, such as [6,7,13,20,5].

Research Methods
This research is a quantitative research to find out the pattern of environmental performance, environmental disclosure and economic performance relationships at manufacturing companies listed in Indonesia Stock Exchange 2013 - 2016. This study use purposive sampling method. The sample of this research is manufacturing company listed on Indonesia Stock Exchange 2013 - 2016 who joined PROPER, using rupiah currency in consolidated financial statements. The data of this study is secondary data in the form of financial statements obtained from the IDX website www.idx.co.id and ICMD 2013-2016. Variable in this research consist of 3 variable, that is, exogenous variable (environmental performance), endogenous variable (Economic performance) and intervening variable (Environmental disclosure).

The method of this study is second order structural equation modeling partial least squares (Second order SEM-PLS). Second order SEM-PLS is divided into 2 stages of analysis, that is Outer model and Inner model. The Outer model is divided into 2, which is explanatory factor analysis (EFA) (used if the indicator that measures the latent variable is formative and the confirmatory factor analyses (CFA) (used if the indicator that measure the latent variable is reflective). The indicators in this study are reflective, so that the outer model analysis in this study used CFA method. Outer model analysis with CFA method is used to analyse the validity and reliability of the indicator against the latent variable. An indicator is valid and reliable if the loading value of the indicator > 0.4 and the average variance extracted (AVE) value > 0.5 and the value of the composite reliability (CR)> 0.7. Inner model in this research is used to analyses significant path / influence test between latent variables. The path is significant if the value of T-statistic > 1.96.

Results and Discussion
SEM-PLS analysis in this research is divided into 2 stages, namely, outer model and inner model. Outer model is used to analyse the correlation between indicator to latent variable, indicator able to measure well variable if validity and reliability criteria fulfilled while inner model used to analyse relation between latent variable.

Outer Model
Outer model in this research using Confirmatory Factor Analysis method. Confirmatory Factor Analysis is used because the variable of the study is reflective latent variables and has more than one indicator. Confirmatory Factor Analysis is divided into 2 stages of validity and reliability. The validity criteria are met if the value of loading factor is more than 0.4 and the Average Variance Extracted (AVE) value is more than 0.5 while the reliability criteria are met if the composite reliability value is more than 0.6.

Table 1 in field initial model informs that all values of loading factor indicator of solvability, liquidity and activity variables greater than 0.4, whereas in profitability variables there are indicators that have a factor loading value less than 0.4, ie OPM = 0.219 and ROI = -0.134 so that the indicator removed from the model. Table 1 informs that the AVE value of solvability, liquidity and activity is more than 0.5 while the AVE value of
profitability is less than 0.5. Consequently, it requires a modification process that is expected to raise the AVE value more than 0.5. One way to increase the value of AVE by dropping an indicator of a model t at have a loading factor value of less than 0.4. If still not fulfilled AVE criteria (less than 0.5), then we drop one by one indicators whose value is less than 0.7.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator</th>
<th>Initial Model</th>
<th>Modify Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LF</td>
<td>AVE</td>
</tr>
<tr>
<td>Profitability</td>
<td>GPM</td>
<td>0.763</td>
<td>0.313</td>
</tr>
<tr>
<td></td>
<td>OPM</td>
<td>0.219</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NPM</td>
<td>0.698</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>ROI</td>
<td>-0.134</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>ROE</td>
<td>0.658</td>
<td>-</td>
</tr>
<tr>
<td>Solvability</td>
<td>DR</td>
<td>0.814</td>
<td>0.662</td>
</tr>
<tr>
<td></td>
<td>DER</td>
<td>0.814</td>
<td>-</td>
</tr>
<tr>
<td>Liquidity</td>
<td>CR</td>
<td>0.741</td>
<td>0.549</td>
</tr>
<tr>
<td></td>
<td>QR</td>
<td>0.741</td>
<td>-</td>
</tr>
<tr>
<td>Activity</td>
<td>ITO</td>
<td>0.756</td>
<td>0.572</td>
</tr>
<tr>
<td></td>
<td>TATO</td>
<td>0.756</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1 in field initial model informs that all of the loading values of indicator of profitability, solvency, liquidity and activity variables are greater than 0.4 and all AVE values of profitability, solvency, liquidity and activity variables are greater than 0.5 so it can be concluded that the criteria of validity are met. Table 1 in field Modify also shows that the composite reliability value of profitability, solvency, liquidity and activity variables is greater than 0.7 so it can be concluded that the reliability criteria are met. Next analyze of the second order variable of economic performance where economic performance is measured with profitability, solvency, liquidity and activity.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Initial Model</th>
<th>Modify Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LF</td>
<td>AVE</td>
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<tr>
<td>lv_Profitability</td>
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<td>lv_Solvability</td>
<td>0.754</td>
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<tr>
<td>lv_Liquidity</td>
<td>0.842</td>
<td>0.833</td>
</tr>
<tr>
<td>lv_Activity</td>
<td>0.401</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2 in field initial model informs that all of the loading values of indicator of economic performance variables are above 0.4 whereas Table 2 in field initial model informs that the AVE economic performance value is below 0.5 so in need of modification model to meet AVE criteria more than 0.5. One way to modify is by dropping an indicator that has the loading value of the smallest factor, that is lv_activity = 0.401. Table in initial model informs that all of the loading values of indicator of economic performance variables are more than 0.4. Table 2 in field modify model shows the result of modification by dropping the lv_activity indicator. After modifying the model, initially AVE value = 0.413 as seen in field initial model rose to 0.528 which is seen in field modify model, AVE of economic performance value greater than 0.5 so it can be concluded that the criteria of
validity are met. Table 2 in field modify model also informs the value of composite reliability economic performance = 0.761 greater than 0.7 so it can be concluded that reliability criteria are met.

**Inner Model**

Inner model describes the relationship between latent variables. Inner model is divided into 2 stages of hypothesis testing and coefficient of determination. In the hypothesis test, the relation of the variable is significant if the value of P value <α = 0.05, whereas the coefficient of determination is divided into three criteria, the influence between latent variables is strong if the value of R² > 0.67, moderate if the value is 0.33 <R² ≤ 0.67, weak if the value of 0.19 <R² ≤ 0.33 and very weak if the value of R² ≤ 0.19.

<table>
<thead>
<tr>
<th>Path</th>
<th>Path coeff</th>
<th>P values</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnvP --&gt; EcoP</td>
<td>0.15</td>
<td>0.04</td>
<td>Significant</td>
</tr>
<tr>
<td>EnvP --&gt; EnvD</td>
<td>0.87</td>
<td>&lt;0.01</td>
<td>Significant</td>
</tr>
<tr>
<td>EnvD --&gt; EcoP</td>
<td>0.32</td>
<td>&lt;0.01</td>
<td>Significant</td>
</tr>
</tbody>
</table>

H1 : Environmental performance affects Economic Performance

The result of the first hypothesis test shows that the relationship of environmental performance variable (EnvP) with economic performance (EcoP) shows the coefficient value of path equal to 0.15 with P value = 0.04 smaller than α = 0.05. These results indicate that environmental performance significantly affects economic performance (Hypothesis 1 accepted) and environmental performance has positive relationship to economic performance which means that any change in the improvement of environmental performance will influence the change of economic performance improvement and vice versa.

H2 : Environmental performance affects Environmental Disclosure

The result of the second hypothesis test shows that the relationship of environmental performance variable (EnvP) with environmental disclosure (EnvD) shows the coefficient value of path 0.87 with p value <0.01 smaller than α = 0.05. These results indicate that environmental performance is significantly affects economic performance (Hypothesis 2 accepted) and environmental performance has positive relationship on environmental disclosure which means that any change in environmental performance improvement will affect the change of environmental disclosure improvement and vice versa.

H3 : Environmental disclosure affects Economic Performance

The result of the third hypothesis test shows that the relationship of environmental disclosure variable (EnvD) with economic performance (EcoP) shows the path coefficient value of 0.32 with P value <0.01 smaller than α = 0.05. These results indicate that environmental performance is significantly affects economic performance (Hypothesis 3 accepted) and environmental disclosure has positive relationship on economic performance which means that any change in environmental disclosure will affect changes in economic performance improvement and vice versa.

H4 : Environmental disclosure mediates the relationship of environmental performance and economic performance.

The results of the first, second and third hypothesis testing show that environmental performance has an effect on economic performance, environmental performance have an effect on environmental disclosure and environmental disclosure have an effect on economic performance. Furthermore, a mediation test was conducted to analyses the mediation of environmental disclosure variable on the influence of environmental performance variable on economic performance variable. The VAF method is used with the condition of all significant paths with the formula VAF = indirect effect / (direct influence + indirect influence). Table 11 and Figure 1 indicate that all paths are significant with p value of each path <α = 0.05.
Based on the Table 8 and figure 1, the value of indirect effect of environmental performance on economic performance is 0.87 * 0.32 = 0.2784 whereas the direct influence of environmental performance to economic performance is 0.15 so that VAF value = 0.2784 / (0.2784 + 0.15) = 0.6498 or 64.98%. VAF values are between 20% and 80%, indicating that environmental performance is a partial mediation variable. VAF calculation results inform that environmental performance mediate relationship of influence of environmental performance to economic performance (Hypothesis 4 accepted).

Figure 1 shows that the R² value of environmental disclosure is 0.76 which means environmental performance variable can explain environmental disclosure equal to 76% while R² = 0.20 which means environmental performance and environmental disclosure able to explain 20%. This concludes that the influence of environmental performance on environmental disclosure is strong because the value of R² ≥ 0.67 while the environmental performance and environmental disclosure effect on the economic performance is weak because the value is 0.19 < R² ≤ 0.33.

Environmental performance on Economic Performance

The result of hypothesis test shows that environmental performance (EnvP) variable has an effect on economic performance (EcoP), this is in accordance with previous research conducted by [8,9]. Environmental performance is one of the company’s important steps in achieving business success. Environmental performance is a measurable result through an environmental management system based on environmental policy and environmental targets [30]. Environmental management systems have standards that describe a system that helps companies to achieve better environmental performance.

In carrying out activities the company must consider all stakeholders because the influence of these stakeholders is very large for the survival of a company. This is in line with the theory of legitimacy, that is, company wants to survive in the long term. In addition to pursuing economic benefits the company must also consider the existing assessment in the environment. The community will recognize the authority and policies of the companies that upheld the community and engaged in the fulfillment of the welfare of stakeholders and contribute actively in preserving the environment. This will impact on improving financial performance.

Environmental performance on Environmental Disclosure

The result of hypothesis test shows that environmental performance has an effect on environmental disclosure. The results of this hypothesis test are in line with the research conducted by [9,31] The results of this hypothesis
test is also directly proportional to the theory of CSR which states that companies that care about environmental performance will disclose social activities.

Companies with good PROPER ratings show good environmental performance. This is revealed by the company in the annual report of the company's efforts to meet the PROPER assessment indicators can increase corporate CSR disclosure because in the CSR index there are indicators of corporate concern to the environment but different indicators with the assessment of PROPER. If the achievement of the environmental performance of the company announced by the environment ministry to the public gets a good PROPER color rating then the company's business at the time of PROPER assessment should be disclosed by the company during the preparation of the annual report. Consequently, the community or the stakeholders of the company will know how much attention the company to the environment and the communities around the company. It is also one way to maintain corporate legitimacy in the eyes of its stakeholders.

Companies that have good environmental performance tend to have a high social concern compared to companies that have poor environmental performance or who do not follow PROPER, the proof is a company that has a good environmental performance not only expresses its concern for the environment but also expressed concern for the energy work, community products and also its stakeholders. CSR disclosure itself is part of the achievement of three successes of the company consisting of social, environmental, and financial success. This concept is called a triple bottom line success of a company. In addition to the pursuit of profit, the company must also pay attention and be involved in the fulfillment of people's welfare (people) and contribute actively in preserving the environment [33]

Environmental Disclosure on Economic Performance

The result of hypothesis test shows that environmental disclosure has an effect on economic performance. The results of this hypothesis test in accordance with research conducted by [8,9]. Disclosure of environmental information disclosure is expected to provide additional information to investors, thus impacting on improving financial performance. CSR can help improve the company's financial performance, lower the company's operating costs by increasing efficiency, improving its brand image and reputation, improving customer sales and loyalty, resulting in higher productivity and product quality, attracting and retaining employees, accessing capital, helping ensure product safety, and lower the legal obligations of an organization.

According to [9], good environmentalists believe that expressing their environmental performance illustrates good news for market participants. Companies that have good news will increase the disclosure of the company's financial performance in its annual report. Good news is expected to get a positive response from investors who will have a positive impact on the economic performance of the company. According to [32], rising corporate image will have strategic implications for the company itself because good reputation is one of the competitive advantages. Reputation is the accumulation of corporate image, both between stakeholders and over time (over the time). The measurements of the success of the program activities can be seen from the number of local and national media coverage of CSR activities. While communication intensity with local community can be measured by indicator in the form of quantity of company communication with local community and company communication quality with local community with benchmark of success in the form of communication model to be used and support the availability of the channel of communication media.

From an economic perspective, the company will disclose an information if the information will improve the company's financial performance. By applying environmental disclosure, it is expected that the company will gain legitimacy and maximize its financial strength in the long term. It is hoped that the stakeholders consider the environmental disclosure information disclosed in the company's annual report, so that in decision-making the investor is not solely based on profit information alone.

Environmental disclosure mediates the relationship of environmental performance on economic performance.

The result of the mediation test informs that environmental disclosure mediates the influence of environmental performance on economic performance. Economic decision-making for the moment can not be seen from the financial condition alone. But with the existence of CSR is able to provide positive image of the community and
also stakeholders so as to improve financial performance. Companies disclose environmental disclosure have a great opportunity to improve the company's financial performance.

The government expects the company to care about the environment around the company, by issuing PROPER. If the company succeeds in achieving good environmental performance, proven with good PROPER rating then the company is able to perform better CSR disclosure because according to [9], companies with good environmental performance need to disclose more environmental quantity and quality information compared to companies with worse environmental performance. In other words, environmental performance, CSR disclosure, and good financial performance are required by a company for the sustainability of its business.

Conclusion

The results of this study indicate that the environmental performance and environmental disclosure variables are not measured by Confirmatory Factor Analysis due to environmental performance and environmental disclosure measured by one indicator. Confirmatory Factor Analysis on economic performance variable eliminates one indicator, that is activity ratio, so that indicator able to measure economic performance variable, that is profitability ratio, solvency and liquidity. The result of hypothesis test shows that environmental performance has an effect on economic performance (H1 accepted), environmental performance has an effect on environmental disclosure (H2 accepted) and environmental disclosure has an effect on economic performance (H3 accepted). Environmental performance variables mediate the relationship of environmental performance variable to the economic performance variable (H4 accepted). The result of the coefficient of determination shows that the influence of environmental performance on environmental disclosure is strong, while the environmental performance and environmental disclosure effect on the economic performance is weak. The results of the research suggested that the assessment of environmental performance is an important aspect in assessing a company with its environmental performance rating. The company's sustainability will be more secure because the company's image in the eyes of society will be better so it can attract investors to invest capital that will improve the company's financial performance.

References


