An Analysis Of The Effect Of Environmental Accounting On Environmental Performance On Mining Companies Listed On The Indonesian Stock Exchange

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ABSTRACT

This study aimed to examine the effect of environmental accounting on the environmental performance in mining companies listed on the Indonesia Stock Exchange. This type of research that is classified as associative researchwhere the study was to test an accounting environment variable, as variable X, while environmental performance as a variable Y. Associative Research is also referred to as a causal relationship that describes causal relationship.The population usedin this study is a mining company listed on the Indonesia Stock Exchange in the year 2015-2017 which follow PROPER for 3 years in a row.The data used in this research is secondary data obtained through the website of each Vendor mining in Indonesia. The sampling method used in this research is purposive sampling.Totalsamples used in this study were 13 mining companies with a total of 39 the number of observations in which the span of observation in this study for 3 years. Data analysis methods used in the form of panel data and using SPSS. These results indicate that environmental accounting variables affect the environmental performance, This result raises implications for the need for the company's accounting practices extended to include environmental aspects. Thus, accounting can contribute to environmental performance.

Keywords : Environmental Accounting, Environmental Performance, PROPER

Papertype - Research Paper .

1. INTRODUCTION

One of the issues that is currently becoming the public's attention is the large number of natural disasters, climate change and environmental problems. This can be seen from the frequent occurrence of natural disasters in Indonesia such as floods, landslides, and forest fires. Air and water pollution, noise, and pollution due to chemicals are some of the problems that are currently the center of attention. These problems arise due to environmental pollution, one of which is caused by the growing development of industrial activities that change the function of land into industrial areas and the company's low attention to the impact of environmental pollution from the company's industrial activities. Given the increasingly visible impact of poor environmental management, environmental problems that occur are important factors that need to be studied in depth so that appropriate preventive and corrective actions can be taken.

In the era of the movement of companies towards a green company, the industry was not only required to treat waste, but also the production process, from taking raw materials to disposing of products after consumption, without damaging the environment. In an effort to preserve the environment, accounting science plays a role through voluntary disclosure in its financial reports related to environmental costs or environmental costs. The accounting system in which there are accounts related to environmental costs is called environmental accounting or green accounting or environmental accounting (Aniela, 2012). Environmental management is a form of corporate social responsibility. Since the emergence of the concept of sustainable development, the issue of corporate social responsibility has begun to receive worldwide attention. Various cases of environmental damage that have occurred are early evidence that corporate environmental management in the world is still poor. In Indonesia, a similar incident occurred in Porong, Sidoarjo due to a mudflow by PT. Lapindo Brantas and river and sea pollution by tailings from a gold mining company, namely PT. Freeport. One of the phenomena of pollution caused by this coal mining company occurred in the Bandili River, Sangatta District, East Kutai Regency, East Kalimantan. PT Stanindo in Bangka, namely the case of tin mining at sea and the case has been decided by paying a fine of IDR 1.4 billion. Sixth, PT Selatnasik Indokuarsa in Bangka Belitung, namely a lawsuit for compensation for environmental damages amounting to Rp. 32 billion, and this case has come to an end.

To reduce and overcome the dangers of environmental damage, the Indonesian government through the State Ministry of Environment has created a program to manage the environment called the Company Performance Rating Program or PROPER (Katadata.co.id 21 January 2019) . The Ministry of Environment (KLH) has implemented a Corporate Performance Rating Rating Program in Environmental Management (PROPER). This program aims to encourage companies to comply with environmental regulations and achieve environmental excellence through the integration of the principles of sustainable development in production and service processes, by implementing an environmental management system, 3R (reuse, reduce, recycle), energy efficiency, resource

conservation, and ethical and responsible business implementation to the community through community development programs (KLH, 2015).

Through PROPER, a company's environmental performance is measured using colors, starting from the best gold, green, blue, red to the worst black which is then announced regularly to the public so that the public can find out the level of environmental management at the company by just looking at the existing colors. More complete PROPER assessment criteria can be seen in the Regulation of the State Minister for the Environment No. 5 of 2015 concerning the Company Performance Rating Assessment Program in Environmental Management. In terms of age, the PROPER performance rating is divided into 5 colors, namely gold, blue, green, red and black.

Good environmental accounting measurements will result in good environmental performance as well. Several studies have proven that environmental accounting is related to environmental performance of companies. Carolina (2011) found a positive relationship between corporate environmental performance as measured using PROPER. The following is data from several mining companies listed on the IDX and participating in the PROPER program:

2. STUDY LITERATURE AND HYPOTHESIS DEVELOPMENT

2.1 Theory *Stakeholders*

Stakeholder theory used as a basis for analyzing groups to whom companies should be responsible (Ghozali and Chariri, 2007: 84) This theory states that disclosure is made to accommodate the wishes and needs of stakeholders because companies need support from stakeholders to continue their existence. Stakeholders are divided into two groups by Clarkson. The first group is primary stakeholders and secondary stakeholders. Stakeholder theory has developed the range of corporate stakeholders to become not only financial stakeholders such as investors and creditors but also non-financial stakeholders such as suppliers, customers, regulators, environmental groups and the mass media.

2.2. *Voluntary/Discretionary Disclosure Theory*

Voluntary/discretionary disclosure theory explains that companies have an incentive to reveal more good things about the company (good news) to differentiate it from other companies that have bad things (bad news), with the aim of benefiting the company itself (Burhany, 2009 :87). Good environmental performance is good news for companies so that companies with good environmental performance will be encouraged to publish this matter to investors and other stakeholders by voluntarily disclosing more company environmental information. The information disclosed can be in the form of strategies, policies, activities, the performance itself, and expenses related to the environment.

2.3 Environmental Accounting

In the Environmental Accounting Guidelines issued by the Japanese minister of environment (2005: 3) it is stated that environmental accounting includes identifying the costs and benefits of environmental conservation activities, providing the best means or means through quantitative measurements, and to support communication processes aimed at achieving sustainable development. , maintain beneficial relationships with communities and achieve effectiveness and efficiency of environmental conservation activities.

2.4 Benefits of Environmental Accounting

Environmental accounting was developed to overcome the limitations of traditional accounting. Among the limitations of traditional accounting is that traditional accounting incorporates indirect costs including environmental costs. In overhead costs, IFAC explains that overhead costs are traditionally allocated to cost centers. Thus causing environmental costs to be hidden in overhead costs so that it will be difficult for management to get accurate information and management is difficult to trace it to related product processes which causes management to underestimate environmental costs (Hamzah, 2016: 35)

2.5 Scope of Environmental Accounting

Environmental accounting aims to measure social costs and benefits as a result of company activities and reporting of company achievements (Plumlee, 2010: 48). Environmental accounting is a flexible tool that can be applied in different scales of use and scope of coverage. The scale used depends on the needs, interests, goals and resources of the company. The problem in determining the scope of environmental accounting is how companies can determine environmental costs that arise as a result of their business activities, where these costs sometimes cannot be measured in accounting terms. The wider the scope, the company may experience difficulties in measuring it, as follows: *Green accounting* generally implemented by companies that have concern and interest in environmental sustainability, sustainability, environmental effectiveness (eco-effectiveness), environmental efficiency (eco-efficiency), and apply it directly with many marketing tools in strategic management (Ikhsan, 2008: 190).

Through the application of green accounting, it is hoped that the environment will be preserved, because in implementing green accounting, companies will voluntarily comply with government policies where the company does business. According to Schaltegger and Burritt (2006:240), one of the factors that influence the successful

implementation of green accounting in relation to economic activities is government regulations and policies and the industry in which the company conducts business activities. In addition, Seetharaman, Ismail, and Saravanan (2007) stated that the integration between green accounting and environmental management systems will also make companies voluntarily comply with environmental policies.

2.6. Environmental Costs

Environmental costs are costs incurred as a result of declining environmental quality as a result of the institution's operating activities. Environmental costs must be presented separately from the financial statements, meaning that companies must prepare environmental cost reports specifically to provide relevant information for the company and external parties as a guide in making decisions on existing environmental impacts. Environmental Costs are grouped into (Hansen, Mowen 2013: 413); Environmental prevention costs, environmental detection costs, internal failure costs, and environmental external failure costs.

2.7. Environmental Performance

a. Definition of Environmental Performance

Bennett and James, as cited by Dian, define environmental performance as "the company's achievement in managing any interaction between the company's activities, products or services and the environment." Bennett and James emphasized environmental performance as the company's achievement in managing the interaction or relationship between the company's activities, products or services and the environment.

b. Environmental Performance Measures

More complete PROPER Assessment criteria can be seen in the Regulation of the State Minister for the Environment No. 5 of 2011 concerning Programs for Assessment of Company Performance Ratings in Environmental Management. In general, the PROPER performance rating is divided into 5 colors.

Table 2.1. Environmental Performance Rating by PROPER

No.	Color	PROPER rating	Scale
1	GOLD	Very good	5
2	GREEN	Good	4
3	BLUE	Enough	3
4	RED	Not enough	2
5	BLACK	Bad	1

2.2 Hypothesis Development

According to Gurvy Kavei there are five advantages of practicing ethical environmental accounting, namely (1) better profitability and financial performance. strong, (2) increasing accountability and assessment from the investment community, (3) encouraging employee commitment because they are cared for and valued, (4) reducing vulnerability to turmoil with the community, and finally (5) enhancing reputation and corporate branding.Environmental preservation provides good benefits for the surrounding community and also for companies, especially companies that utilize the environment and benefit from the environment.
Based on this explanation the hypothesis developed is:
H: Effect of environmental accounting on environmental performance at Mining Companies listed on the IDX.

3. RESEARCH METHODS
Types of research

This research is an associative research, where this research examines between environmental accounting variables, as the X variable, while environmental performance as the Y variable. Associative research is also referred to as a causal relationship which describes a causal relationship.

Research sites

This research was conducted on mining companies listed on the Indonesia Stock Exchange for the 2015-

2017 period, where the IDX provides information on financial reports and annual financial reports on listed companies regularly.

Data Type

The type of data used in this research is quantitative data. Quantitative data is data in the form of numbers, or qualitative data that is numbered (Sugiyono, 2016: 14). Quantitative data in this study are in the form of annual reports and financial statements

3.4 Data Sources

This study uses secondary data. Secondary data is data obtained by researchers indirectly. The secondary data used in this study comes from annual reports or company financial reports obtained from the Indonesian stock exchange website.

Variable Classification and Operational Definition of Variables

ClassificationVariable

The variables in this study are the independent variables and the dependent variables, while the meanings of the following variables are:

1. The independent variable (X) is the variable that influences or causes the change or the emergence of the dependent variable (Sugiyono, 2016:4). The independent variable in this study is Environmental Accounting (X)

2. The dependent variable is the variable that is affected or which is the result because of the independent variable (Sugiyono, 2016:4). The dependent variable in this study is environmental performance (Y).

Data collection procedures

This study uses the documentation method in data collection techniques conducted by researchers. Researchers use financial report data and company annual reports that are accessed officially at www.idx.co.id.

Procedur Data analysis

Descriptive statistical analysis

Ghozali (2009) describes the definition of descriptive statistics as a method for organizing and analyzing quantitative data, in order to obtain an orderly picture of an activity. Descriptive analysis here is used to provide an overview of the research variables.

Classic assumption test

To find out whether the regression model used in this study is feasible or not, the regression equation must meet the classical assumptions (Damara, 2012). A good parameter if it can not be efficient and consistent.

Normality test

The Normality test aims to test whether the confounding variables or residuals in the regression model have a normal distribution. It is known that the t-test and F-test assume that the residual values follow a normal distribution. If this assumption is violated, the statistical test becomes invalid for small samples (Ghozali , 2005).

Heteroscedasticity test

Good regression should not occur heteroscedasticity. This test aims to test whether in the regression model there is an inequality of variance from the residual of one observation to another. The model used is the Glejser test with the assumptions (Gozali, 2006):

Simple Linear Regression Analysis

Simple linear regression analysis is a linear relationship between one independent variable (X) and the dependent variable (Y). This analysis is to determine the direction of the relationship between the independent variables and the dependent variable whether positive or negative and to predict the value of the dependent variable if the value of the independent variable increases or decreases. The data used is usually an interval or ratio scale.

Hypothesis test

Determinant Coefficient Test (R^2)

The coefficient of determination (R2) basically measures how far the model's ability to explain the variation of the dependent variable. The value of the coefficient of determination is between 0 and 1. A small value (R2) means that the ability of the independent variables to explain the dependent variable is very limited. A value close to 1 means that the independent variables provide almost all the information needed to predict the 9dependent variables (Ghozali, 2006).

Test of Significance of Individual Parameters (test statistic t)

According to (Ghozali, 2006) the t statistical test basically shows how far the influence of an independent variable individually in explaining the dependent variable. The test was carried out using a significance level of 0.05 (a=5%).

4. ANALYSIS RESULTS AND DISCUSSION

4.1.1 Descriptive Statistical Analysis

Descriptive statistics aim to provide an overview/description of a data seen from the average (mean), standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness (distribution skewed) (Ghozali, 2005: 19). The descriptive statistics on the research variables are shown in Appendix 1.

Table 4.1 Results of Descriptive Statistical Analysis

	N	Minimum	Maximum	Means	Std Deviation
Environmental Accounting(X)39		18.85	21.73	20,627	.892
Valid N (listwise)	39				

Data Source: Processed Secondary Data, 2019 (Appendix 4)

From table 4.1 it can be seen that of the 39 samples tested, namely from 2015-2017, based on environmental cost indicators, namely environmental prevention costs, appraisal costs, internal error costs and company external error costs, there is a minimum value of environmental accounting during the study period is 18 .85 This minimum value is obtained from the results of environmental cost calculations belonging to PT. Energy Mega Persada Tbk in 2015 which experienced a net loss of Rp. (80,400,000). While the maximum value generated is 21.73 which is obtained from the calculation of PT. Aneka Tambang Tbk in 2015.. The standard deviation value of 89.27 is greater than the mean value of 20.62, so this indicates that the performance variable datadistributed environment normally.

4.2. Classic assumption test
A. Normality test

The normality test is used to determine whether the data population is normally distributed or not. The normality test used in this study is the One Sample Kolmogrov-Smirnov test using a significant rate of 0.05. The data is declared normally distributed if the significance is greater than 5% or 0.05.

Table 4.2 Normality Test One-Sample Kolmogorov-Smirnov Test

	Unstandardized residual
N	39
NormalMean Parameters(a,b)	.0000000
std. Deviation	.55991207
MostExtremeAbsolute Differences	.118
Positive	.118
Negative	-.107
Kolmogorov-Smirnov Z	.738
asymp. Sig. (2-tailed)	.648

Data source: Processed secondary data, 2019 (Appendix 5)

Based on the results of the normality test in table 4.2, it can be seen that the Kolmogorov-Smirnov test statistic is 0.738 and asymp .(2-tailed) is 0.648 which is greater than 0.05 or 5%, so it can be concluded that the data is normally distributed.

B. Heteroscedasticity Test

The results of the heteroscedasticity test can be seen in table 4.3 below.

Table 4.3 Heteroscedasticity Test Results

Model	Unstandardized Coefficients		standardized Coefficients	Q
	B	std. Error	Betas	
1(Constant)-.870		1,353		-.643
Accountancy	063	.066	.155	.956
Environment (X)				

Data source: Processed secondary data, 2019 (Appendix 6)

Based on the results of the Heteroscedasticity test in table 4.3, it shows that the independent variable or environmental accounting that is statistically significant affects the absolute residual value of the dependent variable. These results are visible of the probability of significance above the 5% confidence level. So it can be concluded that the regression model does not contain heteroscedasticity.

C. Simple Linear Regression Test

This simple linear regression method is intended to determine how much the level of influence between environmental accounting and environmental performance. For this reason, the authors present the results of a simple linear regression test based on the following table:

Table 4.4 Simple Linear Regression Test Results

Model	Unstandardized Coefficients		standardized Coefficients	Q	Sig.
	B	std. Error	Betas		
1(Constant)-.870		1,353		-.643	.524
Accountancy	063	.066	.115	.956	.345
Environment (X)					

Processed secondary data, 2019 (Appendix 7)

In this output, the coefficient value of the regression equation is presented. In this case, the simple regression equation used is:

$$5. \quad Y = a + bx$$

Where :

Y = Environmental Performance (KL)

X = Environmental Accounting (AL)

From the output, the regression equation model is obtained:

$$6. \quad KL = 0.870 + 0.115 \ AL$$

The coefficients of the simple linear regression equation above can be interpreted as a regression coefficient for a constant of 0.870 indicating that if the environmental accounting variable is zero or fixed, it will increase environmental performance by 0.870 units or by 87%.

The environmental accounting variable of 0.115 indicates that if the environmental accounting variable increases by 1 unit, it will increase environmental performance by 0.115 units or by 11%.

Hypothesis testing

Determinant Coefficient Test (R2)

The coefficient of determination aims to measure how far the model's ability to explain the variation in the dependent variable. The greater the coefficient of determination, the greater the variation of

the independent variables in explaining the dependent variable. The results of the test for the coefficient of determination (R2) can be seen in table 4.5 below:

Table 4.5 Determinant Coefficient Test (R2) Model Summary

Model	R	R Square	Adjusted R Square
1	.155(a)	024	.020

Data source: Processed secondary data, 2019 (Appendix 8 Based on Table 4.5, the Adjusted R Square value shows 0.020.

Which means that environmental performance is influenced by the independent variable, namely environmental accounting by 2%. This indicates that the contribution of the independent variable to the dependent variable is 2%, while the rest is determined by other factors outside this research model.

D. Parameter Significance Test (Statistical Test t)

The t test was conducted to determine the effect of each independent variable on the dependent variable. This test was carried out to answer the hypotheses carried out in this study. Partial test results can be seen in table 4.7 below:

Table 4.7 Statistical Test Results t

Model	Unstandardized Coefficients		standardized Coefficients	Q
	B	std. Error	Betas	
1(Constant)-.870 Accountancy Environment (X) 3	06	1,353 .066	.115	.64 3 .95 6

Data source: Processed secondary data, 2019 (Appendix 9) The statistical hypothesis proposed is as follows:

In the table atabove, t count on environmental accounting is 0.956. At degrees of freedom (df) = N – 2 = 39 – 2 = 37, then a t table of 1.98 is found. Then it can be concluded that t count > t table (0.956> 1.98). Criteria in environmental accounting are as follows:

a. if t_{count}> t_{table}then $H_o$rejected is statistically significant, from the results of the t test the significant value is less than 0.05 (0.000 <0.05) meaning that there is a strong influence between environmental accounting on environmental performance.

b. Ift_{count}<t_{table}then $H_o$accepted, meaning that statistically there is no significant effect between environmental accounting on environmental performance.

c. Based on the criteria above, $H_o$rejected and $H_a$accepted. Means environmental accounting has a significant effect on environmental performance.

Interpretation of Research Results

Based on the results of the t test analysis above, the hypothesis is accepted where there is an influence on environmental costs so that it can be said that environmental accounting has a positive effect on environmental performance. This is in line with research by Puspita (2017) and Rakhmawati and Anang (2017). Information on environmental costs is useful for management in order to be able to control these costs so that efficiency can be carried out (Burrit, 2002). With regard to environmental management, there are still many companies that do not carry out environmental management properly as evidenced by violations of the principles, which include the low level of environmental performance as evidenced in the 13 companies studied, the majority of which obtained a PROPER rating of 3 (three) or blue.

5. CONCLUSIONS AND RECOMMENDATIONS
Conclusion

Based on the results of the research and discussion that has been carried out by the author regarding "Analysis of the Influence of Environmental Accounting on Environmental Performance in Mining Companies Registered on the IDX", the authors draw conclusions from the results of the research above, it can be explained that environmental performance can be increased if companies implement environmental accounting by means of calculating on environmental costs incurred. So this research supports research conducted by Puspita (2017) and Dian (2016) and does not support research conducted by Yanti (2015).

Limitations and Suggestions for Future Research

In this study there are several limitations and suggestions, namely:

1. For future researchers it is suggested to add to the research sample not only mining companies in Indonesia but in other countries.
2. For future researchers, it is expected to add other variables that might affect environmental accounting so that the results obtained are more varied.
3. For future researchers, it is hoped that they can use all the elements of environmental accounting in order to have more varied results.

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