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The Effect of Environmental Accounting on the Increase in Firm Value

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Abstract

This study aims to analyze the factors of environmental accounting which consist of material inputs, non-product output, compliance aspects, transportation aspects, other aspects, supplier assessment, and environmental complaints mechanisms to increase firm value. The sample in this study was 71 respondents from companies in Banten which were determined based on the purposive sampling method. Then the data were analyzed using multiple linear regression methods. The results showed that environmental accounting which is proxied by non-product output, other aspects, and environmental complaints mechanisms have a significant positive effect on increasing firm value. Furthermore, it was found that there was a significant negative effect between material input and supplier assessment on the increase in firm value. Also, it was found that the compliance aspect had a positive and insignificant effect on the increase in firm value and the transportation aspect had a negative and insignificant effect on the increase in firm value. Finally, the results of this study found that environmental accounting simultaneously has a significant effect on firm value.

Keywords: firm value, environmental accounting, Banten.

I. INTRODUCTION

This research is based on several facts regarding the low awareness of companies in Indonesia in carrying out environmental management responsibilities, especially manufacturing companies in Banten Province. Environmental damage in Banten continues to increase until now, especially damage to agricultural land, destruction of mountains, environmental pollution, destruction of food sources to climate change. This is evident among others in the case of PT. Sentra Usahatama Jaya (SUJ) and the reclamation of Pantai Pulorida in Cilegon, pollution of the Sungai Ciujung, sand mining in the Lebak area, and the potential threat of sea sand mining on the North Coast of Banten [1].

In addition, there was a phenomenon of 418 industries in Tangerang Regency, Banten during the 2014-2018 period which were sanctioned by the Dinas Lingkungan Hidup dan Kebersihan regarding waste pollution. As for the waste pollution carried out by the industry, such as not having a liquid waste permit, chimneys that have an environmental impact and are not treated so that they do not have a TPS (Temporary Storage) [2]. Furthermore, the phenomenon of pollution of the Sungai Ciujung in Serang Regency, whose condition is getting worse with the blackening of the river, is caused by PT. Indah Kiat Pulp & Paper, which made Wahidin Halim (Governor of Banten) impose sanctions and report violations of the Law as of July 10, 2019, to be tried in court [3].

Sustainability, shifting the company's paradigm is no longer about profit, but about the company's going concern. Companies must focus on so that the operations carried out are beneficial to the community around the company (people), the environment around the company (planet), and finally the profit expected by the company (profit). This concept is known as the triple bottom line [4]. Especially for environmental aspects, it can be realized through the application of environmental accounting.

Besides, the application of environmental accounting can identify environmental costs that are often hidden in the accounting system in general [5]. The application of environmental accounting by a company will have a positive impact on the company itself in increasing company profits and value in the eyes of the community. Environmental accounting provides a more comprehensive approach than conventional accounting, this can be seen from the attention to non-reciprocal transactions such as pollution, environmental damage, or negative things from company activities [6]. The company's value is marked by a good image and image for the surrounding community so that the community can give legitimacy to support the company's operational activities. The company has a long-term goal to increase the value of

the company by increasing the prosperity of its owners or shareholders [7]. Firm value is investors' perception of value, which is often related to the company's stock price. Firm value also describes the financial performance carried out by management in managing their finances [8].

Accounting research regarding corporate environmental accounting is still relatively rare, especially in Indonesia, existing research only measures environmental accounting based on secondary data sourced from company annual reports, such as [9], [10], [11], [12]. But unfortunately, the research conducted is not deep, it only focuses on items that are disclosed in the company's annual report without showing how much the company's environmental performance has been carried out.

Therefore, a more in-depth research is needed with direct observation and interview approaches and questionnaires related to the application of environmental accounting using indicators adopted from derivatives of the Global Reporting Initiative (GRI) version 4.0 using 7 variables consisting of 12 dimensions with 17 indicators. and refer to research [13]. The seven variables are material input, non-product output, compliance aspects, transportation aspects, other aspects, supplier assessment, and environmental complaint mechanisms. Thus, a common thread can be found between environmental accounting and the increase in firm value in Banten.

This research was conducted to answer the formulation of the problems found, namely:

1. Does environmental accounting which is proxied by material input affect the increase in firm value ?;
2. Does environmental accounting which is proxied by non-product output affect the increase in firm value ?;
3. Does environmental accounting, which is proxied by the aspect of compliance affect the increase in firm value ?;
4. Does environmental accounting which is proxied by the transportation aspect have an effect on the increase in firm value ?;
5. Does environmental accounting which is proxied by other aspects affect the increase in firm value ?;
6. Does environmental accounting which is proxied by supplier assessment have an effect on the increase in firm value ?;
7. Does environmental accounting, which is proxied by the environmental complaint mechanism affect the increase in firm value ?;

8. Does environmental accounting which consists of material input, non-product output, compliance aspects, transportation aspects, other aspects, supplier assessment, and environmental complaint mechanisms simultaneously affect the increase in company value?.

The research literature which is the basis of reference for the use of this research variable is as follows [13], [14]. Based on previous research and the discussion that has been submitted, the researcher draws the following hypothesis:

H1. Input material influences the increase of firm value;

H2. Non-product output influences the increase of firm value;

H3. The compliance aspect influences the increase of firm value;

H4. The transportation aspect influences the increase of firm value;

H5. Other aspects influence the increase of firm value;

H6. Supplier assessment influences the increase of firm value;

H7. The environmental complaint mechanism influences the increase of firm value;

H8. Environmental accounting which consists of material input, non-product output, compliance aspects, transportation aspects, other aspects, supplier assessment, and environmental complaint mechanisms simultaneously influences the increase of firm value.

II. RESEARCH METHOD

The population in this study were all manufacturing companies located in Banten for the 2016-2018 period, totaling 1,695 companies. Based on the purposive sampling method that has been determined previously, obtained a sample of 71 respondents from 5 companies that have been determined as follows: PT. Polychem Indonesia, Tbk. (ADMG), PT. Japfa Comfeed Indonesia, Tbk. (JPFA), PT. Malindo Feedmill, Tbk. (MAIN), PT. Charoen Pokphand Indonesia, Tbk. (CPIN) and PT. Gajah Tunggal, Tbk. (GJTL).

The types of data used in this study are primary data obtained through surveys, direct interviews and questionnaires, and secondary data obtained through financial reports and company annual reports for the 2016-2018 period. Furthermore, testing the data using the SPSS (Statistical Package for Social Science) software version 26.0. Reference in processing research data using sources from [15], [16], [17], [18], [19]. Analysis of research data using multiple linear regression analysis by the following equation:

$$FV_{it} = \alpha_{0+}\alpha_1 MAI_{it} + \alpha_2 NPO_{it} + \alpha_3 KEP_{it} + \alpha_4 TRA_{it} + \alpha_5 LAI_{it} + \alpha_6 PEM_{it} + \alpha_7 MPL_{it} + E_{it}$$

Keterangan:

FV : *Firm Value* (Nilai Perusahaan)

α_0 : Constant

$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7$: Coefficient

MAI : Input Material

NPO : Non-Product Output

KEP : Compliance

TRA : Transportation

LAI : Others

PEM : Supplier Assessment

MPL : Environmental complaint mechanism

E : Standard Error

III. RESULT AND DISCUSSION

After all samples were processed using the analysis method mentioned above, the following results were obtained:

Table 3.1 Results of the Research Instrument Validity Test

Question	t-count	t-table	N	Description
Question 1	0,625	0,234	71	Valid
Question 2	0,624	0,234	71	Valid
Question 3	0,633	0,234	71	Valid
Question 4	0,620	0,234	71	Valid
Question 5	0,778	0,234	71	Valid
Question 6	0,790	0,234	71	Valid
Question 7	0,710	0,234	71	Valid
Question 8	0,757	0,234	71	Valid
Question 9	0,772	0,234	71	Valid
Question 10	0,795	0,234	71	Valid
Question	0,697	0,234	71	Valid

11				
Question 12	0,747	0,234	71	Valid
Question 13	0,671	0,234	71	Valid
Question 14	0,718	0,234	71	Valid
Question 15	0,708	0,234	71	Valid
Question 16	0,738	0,234	71	Valid
Question 17	0,641	0,234	71	Valid

Based on the results of running the research instrument validity test in Table 3.1 above, it can be seen that the values in the Corrected Item-Total Correlation (r-count) column are all greater than the r-table value, namely, 0.234 obtained from the equation value (df) = n-2, it is known that for a total sample (n) of 71, df = 71-2 = 69 is obtained. Based on the value in the r-table for df 69 with a significance level for the two-way test of 5% of 0.234. Therefore, it can be concluded that all the data used are valid.

Table 3.2 Reliability Test Results

Reliability Statistics

Cronbach's Alpha	*N of Items*
.948	17

Based on Table 3.2 above, the reliability test that has been carried out in this study is the alpha Cronbach's value of 0.948. To find out this reliability test, we refer to the book [16] which groups the scale into 5 (five). Cronbach's alpha value of 0.948 is included on a scale of 5, namely Cronbach's alpha value of 0.81 to 1.00, which means that this study is very reliable.

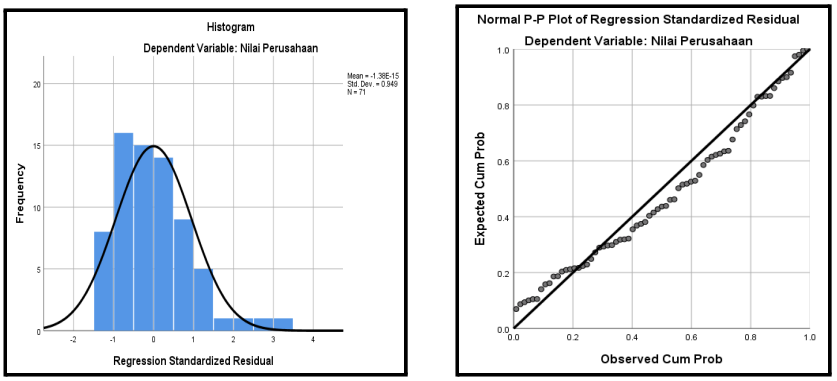

Figure 3.1 Normality Test Results

Based on the results of running research data, the normality test results were obtained in the analysis of the normal histogram and p-plot graph test as shown in Figure 3.1 above. The histogram graph test has a graph like a bell shape or does not experience skewness to the left or right. Furthermore, the p-plot graph test analysis shows that the dots spread around the diagonal line, and the distribution follows the direction of the diagonal line. This regression model is feasible to be used to predict firm value based on the input of material input variables, non-product output, compliance, transportation, other aspects, supplier assessment, and environmental complaint mechanisms as a proxy for the application of environmental accounting. Thus, this regression model fulfills the normality assumption.

Table 3.3 Data Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		71
Normal Parameters [a,b]	*Mean*	.0000000
	Std. Deviation	.57780318
Most Extreme Differences	*Absolute*	.089
	Positive	.089
	Negative	- .062
Test Statistics		.089
Asymp. Sig. (2-tailed)		.200[c,d]

The results of the normality test using the Kolmogrov-Smirnov statistical test are by looking at the Kolmogrov-Smirnov value and the significance of the processed data. From Table 3.3 above, it can be seen that the magnitude of the Kolmogrov-Smirnov value (statistical test) is 0.089 and significant at 0.200 or 20.0%, this means that the residual data is normally distributed because the significance is above 0.05 or 5%.

Next, Table 3.4 below describes the results of the multicollinearity test with the tolerance test results showing that no independent variable has a tolerance value of less than 0.10 (10%). The results of the Variance Inflation Factor (VIF) calculation also show that there is no one independent variable that has a Variance Inflation Factor (VIF) value of more than 10. Therefore, it can be concluded that there is no multicollinearity between variables in the regression model.

Table 3.4 Multicollinearity Test Results

Model		*Tolerance*	VIF
1	(Constant)		
	MAI	.271	3.696
	NPO	.216	4.621
	KEP	.482	2.075
	TRA	.397	2.517
	LAI	.423	2.367
	PEM	.401	2.493
	MPL	.509	1.967

The results of the heteroscedasticity test of this study can be seen in Figure 3.2 as follows:

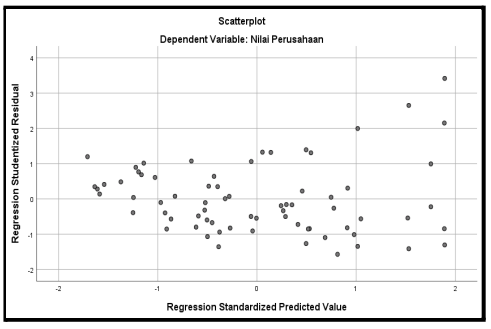

Figure 3.2 Heteroscedasticity Test Results

Based on Figure 3.2 above, it can be seen that there is no clear pattern, and the dots spread above and below the 0 on the Y-axis. Therefore, it can be concluded that there is no heteroscedasticity between the variables in the regression model.

Table 3.5 T-Test Result

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.727	.585		2.951	.004
	Input Material	-2.187	.554	-1.116	-3.949	.000
	Non Product Output	.961	.536	.598	1.793	.078
	Compliance	.014	.254	.011	.056	.956
	Transportation	-.182	.289	-.104	-.630	.531
	Others	1.740	.416	.895	4.179	.000
	Supplier	0	.283	-.548	-3.146	.003
	Assessment	-.891	.176	.268	1.940	.057
	Environmental	.342				
	Complaint					
	Mechanism					

a. Dependent Variable: Nilai Perusahaan

Based on Table 3.5 above, it can be seen that the variable non-product output (NPO), others (LAI), and environmental complaint mechanism (MPL) have a significance level of 0.078, 0.000; and 0.057 is less than 10% (<0.10) which indicates Hypothesis 2, Hypothesis 5, and Hypothesis 7 are ACCEPTED. This means that the application of environmental accounting through non-product output, etc., and environmental complaint mechanisms can be proven to have a significant positive effect on firm value. In addition, it was found that the input material variables (MAI) and supplier assessment (PEM) had a significance level of 0.000 and 0.003 <0.10 which indicated that Hypothesis 1 and Hypothesis 6 were ACCEPTED. These results indicate that the application of environmental accounting through material input and supplier

assessment can be proven to have a significant negative effect on firm value. However, the compliance variable (KEP) has a significant level of 0.956> 0.10 which means that Hypothesis 3 is DENIED, meaning that the application of environmental accounting through the compliance aspect has a positive but insignificant effect on firm value and the transportation variable (TRA) has a significant level of 0.531> 0, 10 which means that Hypothesis 4 is DENIED, meaning that the application of environmental accounting through the transportation aspect has a negative but insignificant effect on the increase in firm value.

Table 3.6

F-Test Result

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	*Regression*	24.771	7	3.539	9.540	.000[b]
	Residual	23.370	63	.371		
	Total	48.141	70			

a. Dependent Variable: Nilai Perusahaan

b. Predictors: (Constant), Material Input, Non Product Output, Kepatuhan, Transportasi, Lain-lain, Asesmen Pemasok, Mekanisme Pengaduan Lingkungan

Based on Table 3.6 above, it can be seen that the application of environmental accounting through variable material input (MAI), non-product output (NPO), compliance (KEP), transportation (TRA), others (LAI), supplier assessment (PEM), and the environmental complaint mechanism (MPL) simultaneously has a significant effect on increasing firm value so that Hypothesis 8 is ACCEPTED. This is evidenced by the test results in Table 3.6 above, where the significance level of 0.000 is smaller at α = 0.05 (<0.05). Thus, the application of environmental accounting which consists of material inputs, non-product output, compliance, transportation, etc., supplier assessment, and environmental complaint mechanisms jointly affect the increase in firm value.

IV. CONCLUSION

Input material and supplier assessment have a significant negative effect on the increase in firm value. Non-product output aspects, other aspects, and environmental complaint mechanism aspects have a significant positive effect on increasing firm value. In contrast, the compliance and transportation aspects have a positive and negative effect but not significant. Furthermore, based on the results of simultaneous testing (F test), it can be concluded that the application of environmental accounting through the material input aspects, non-product output aspects, compliance aspects, transportation aspects, other aspects, supplier assessment aspects, and environmental complaint mechanism aspects simultaneously have significant influence towards increasing firm value.

The application of environmental accounting is measured through direct surveys, interviews and distributing questionnaires which become novelty / renewable and answer gaps related to the application of environmental accounting, which so far is mostly measured from secondary data (company annual reports). The level of success and quality of the company's environmental accounting application is not only measured by the presentation in the company's annual report but can also be measured from the opinions of stakeholders (employees) as reflected in the answers to questionnaires and the results of surveys and direct interviews.

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