

Research article

Does Environmental Information Disclosure Mediate the Effect of Environmental Cost on Environmental Performance?

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Abstract.

Environmental performance is a measure created by the Government to determine the company's concern for the environment. Environmental costs are sacrifices made by companies to obtain good environmental performance. In addition, companies can disclose information about the activities they have carried out to preserve the environment. The purpose of this study was to determine the effect of environmental costs on environmental performance, mediated by environmental information disclosure. Data were obtained from the annual reports of 12 manufacturing companies in Indonesia, registered from 2015-2019. These companies were selected using purposive sampling. The results indicated that: 1) environmental costs had no effect on environmental performance; 2) environmental costs had a positive and significant effect on disclosure of environmental information; 3) disclosure of environmental information had a positive and significant effect on environmental performance; and 4) disclosure of environmental information mediated the effect of environmental costs on environmental performance. Based on these findings, Indonesian manufacturing companies should increase the quality of their disclosure of environmental information.

Keywords: environmental cost, environmental performance, environmental information disclosure

1. Introduction

The problem of environmental damage caused by waste from the company's operational activities continues to occur, especially in Indonesia. This is because the company is still oriented to get the maximum profit possible, so that it ignores other aspects, especially the environment. Environmental pollution due to waste from operational activities, especially in manufacturing companies, is still in the spotlight. This is because the waste from the company's operational activities not only damages the environment but also has an impact on the community around the company. Companies must be able to maintain environmental sustainability in order to obtain acceptance (legitimacy) from stakeholders, especially the community and government [1]. The company must be able to preserve the surrounding environment so that the resulting waste does not disturb

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Published: 28 September 2022

Publishing services provided by
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Selection and Peer-review under the responsibility of the ICESRE 2021 Conference Committee.

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the community, so that the company obtains legitimacy from the community. In addition, companies must also be able to comply with applicable environmental regulations in order to gain legitimacy from the government. According to [2] these two things must be fulfilled to ensure the going concern company.

The Indonesian government has created various policies and regulations to encourage companies to maintain environmental sustainability. The efforts to monitor the company's concern level for environmental sustainability is the creation of PROPER. PROPER is Company Performance Rating Program in Environmental Management. The Ministry of Environment and Forestry (KLHK) made PROPER to measure company compliance with environmental laws and regulations. The PROPER rating shows the company's environmental performance in preventing and overcoming environmental damage. The PROPER rating is obtained by the company through a direct assessment. The Ministry of Environment and Forestry will measure all company waste to comply with the established regulations. This is a real effort made by the government to create a company with a profit, people, and planet orientation. Profit, people and the planet orientation is called the triple bottom line principle created by [3]. The company's success in realizing the triple bottom line principle will ensure the assurance of the concept of sustainable development (sustainability development). Sustainable development is the principle of ensuring the availability of resources for current and future generations, so that there is an equal amount of human ability to meet current and future needs. The principle of sustainable development focuses on the principle that humans at this time must also think about the availability of resources for the survival of future generations.

Academics, especially in the field of accounting, participate in realizing the triple bottom line principle by creating an environmental accounting system [4]. Environmental accounting focuses on disclosing information related to environmental costs, so that company orientation does not only generate profits but also pays attention to environmental aspects [5]. The application of environmental accounting in the company will result in better decisions taken by company management by taking into account the equality of profit, people, and planet. Environmental costs are an allocation of costs made by companies to preserve the environment. Efficient allocation of environmental costs will focus on the costs of preventing and detecting environmental damage so that waste management does not occur. Environmental cost efficiency must be successfully realized by the company in order to achieve harmony between the profits without sacrificing environmental aspects. The company's success in aligning profits with environmental concerns is a realization of the triple bottom line principle and can increase the environmental performance company's.

In addition to information related to environmental cost allocations, companies can convey information related to activities that have been carried out to prevent and mitigate environmental damage through environmental information disclosure. Environmental information disclosure contains information related to company policies related to environmental impacts generated by companies that aim to improve environmental performance [6]. The phenomenon of low awareness of manufacturing companies to disclose environmental information is an important topic [7]. Environmental information disclosure is a form of transparency of the company's concern for the environment that can increase the company's image, increase investor confidence, and consumer loyalty [8]. Environmental information disclosure provides information to external parties regarding the company's efforts to mitigate environmental damage and comply with government regulations in the environmental sector. This will improve the company's environmental performance and company legitimacy. Based on the explanation above, the researcher is interested in conducting research with the title "Does Environmental information disclosure Mediate the Effect of Environmental Costs on Environmental Performance?".

2. Literature Review

2.1. Legitimacy Theory

[9] define the concept of legitimacy which is the basis for the creation of the theory of legitimacy. The concept of legitimacy is a condition when the company's value system is part of a social value system. The legitimacy of the company will be threatened if there are differences between the two value systems. [10] states that legitimacy can be obtained if there is a match between the company's values and social values, so that the company's activities must be in accordance with the values/norms and regulations that apply in society. When the company's existence starts to be incompatible with the existing value/norm system in society, the company's legitimacy can be threatened [11]. Companies must be able to maintain their legitimacy to ensure the going concern company [2]. The disclosure of environmental costs carried out by the company will provide information related to the funds allocated as a corporate environmental concern [5]. This shows the synergy between the company and the environmental aspects, which indicates that the company has succeeded in gaining legitimacy from the community and has an impact on the company's survival. Environmental information disclosure and environmental costs must be carried out by the company as a step to gain recognition

in the community that the company cares for the environment [12]. The sacrifices made by the company through cost allocation and disclosure of environmental information will affect the level of company compliance with environmental regulations. The level of company compliance in complying with regulations or regulations related to the environmental sector will be assessed by the Ministry of Environment and Forestry through PROPER [13]. The PROPER rating results will show level of company compliance with applicable regulations. The higher the PROPER rating a company gets, the more it shows that the company cares about the environment. This will impact on increasing the legitimacy of the company and the survival of the company in the community [2].

2.2. Environmental Performance

[14] defines environmental performance as the company's achievements as a result of the efforts that have been made to preserve the environment. In Indonesia, environmental performance is measured using the PROPER rating organized by the Ministry of Environment and Forestry. The PROPER rating is obtained based on the results of the Ministry of Environment and Forestry's assessment of the company's efforts to comply with regulations set by the government, especially regarding environmental aspects and company innovation to preserve the environment [15]. The PROPER ranking is shown using five color levels, including gold, green, blue, red, and black. Gold indicates the highest-rated environmental performance, while black indicates the lowest-rated environmental performance.

2.3. Environmental Cost

Environmental costs consist of prevention costs, detection costs, internal and external failure costs which are the allocation of costs to carry out activities as an effort to preserve the environment [16]. This definition is supported by the opinion of [5] which states that environmental costs are costs allocated by companies as a result of operational activities carried out. Environmental costs have an influence on improving company performance. It has an impact on customer satisfaction, investors and success in meeting applicable regulations, especially in the environmental sector [17]. The company's environmental costs must be controlled in order to obtain efficient environmental costs, so that the company is still able to generate profits [18]. According to [17] in order for environmental costs to be efficient, companies must focus on prevention costs which

aim to prevent environmental damage. Environmental costs are sacrifices made by a company to prevent and overcome environmental damage for its operational activities. Company must control environmental costs so as not to threaten the company's ability to generate profits, so that environmental costs must be allocated efficiently and on target. The environmental cost allocated by the company is an effort to comply with government regulations related to the environmental sector. Researchers suspect that companies that succeed in allocating environmental costs efficiently are a form of compliance with government regulations in the environmental sector. This will have an impact on increasing the company's environmental awareness which can improve the company's environmental performance. The hypothesis proposed by the researcher based on the explanation above is:

H1: Environmental costs have a significant effect on environmental performance

According to [16] environmental costs are an allocation of costs to reduce environmental damage due to the company's operational activities. The company will strive to detect and prevent environmental damage to reduce the environmental costs, thus creating efficient environmental costs. Environmental cost efficiency needs to be carried out by companies so that there is harmony between the company's environmental concerns and the company's ability to generate profits [19]. Researchers suspect that companies that have allocated environmental costs will disclose environmental information as additional information related to activities that have been carried out to manage environmental damage. This is because the environmental information disclosure is a realization of the costs incurred by the company. The research's hypothesis based on this explanation is:

H2: Environmental costs have a significant effect on environmental information disclosure

2.4. Environmental Information Disclosure

Environmental information disclosure contains information about environmental activities carried out by companies to preserve the environment [20]. This definition is supported by [21] which states that environmental information disclosure is information that contains social responsibility activities carried out by companies, especially to prevent and overcome environmental damage. Environmental information disclosure includes voluntary disclosures that are measured using guidelines from the Global Reporting Initiative (GRI) by adding up the number of items disclosed by the company [22]. Environmental information disclosure is additional information about the company's

efforts to preserve the environment. Environmental information disclosure will provide information related to activities that have been carried out to prevent and manage environmental damage resulting from the company’s operational activities. Company’s Environmental information disclosure will prove the company’s concern for the environment, thereby enhancing the company’s image to external parties. Researchers suspect that the more information a company delivers regarding its concern for the environment, the better external parties’ perceptions of the company will be, so the company’s environmental performance will increase. The hypothesis proposed by the researcher based on this explanation is:

H3: environmental information disclosure affects environmental performance.

3. Research Method

Secondary data sourced was used in this study from financial reports and annual reports. The researcher obtained the data through the website of the Indonesia Stock Exchange (BEI) and / or the company website. The population of this research is all manufacturing companies listed on the IDX from 2015-2019.

Purposive sampling is used to select research samples. Certain criteria are used to select research samples using the purposive sample method that have been determined by the researcher. Several criteria were determined for selecting research samples, including manufacturing companies in Indonesia that published annual reports and financial reports from 2015 to 2019 through the IDX website and/or company websites, manufacturing companies that obtained a PROPER assessment and that presented environmental costs in the report, annual or financial reports, as well as, manufacturing companies that make financial reports using the rupiah currency and present complete data for research variables.

TABLE 1: Research Sample.

Information	amount
Manufacturing companies listed on the IDX from 2015-2019	159
Companies that do not match the sample criteria	(147)
Companies according to the sample criteria	12
Company as sample (5 years)	60
The data did not match the sample criteria	(11)
The amount of sample data used	49

Source: study sample criteria, 2021

The number of data samples obtained by researchers based on predetermined criteria were 49 company data. The Structural Equation Modeling (SEM) method is used to test research hypotheses using the WarpPLS software.

3.1. Environmental Cost

Environmental costs are an allocation of costs sacrificed by companies to manage environmental damage. The cost of preventing environmental damage, the cost of detecting environmental damage, the cost of internal failure, and the cost of external failure are the four components of environmental costs. Comparison of the total costs incurred for CSR activities with net profit after tax is a method used to calculate the environmental cost ratio [23]. The environmental cost ratio formula is as follows:

$$\text{Environmental cost ratio} = \frac{\sum \text{Environmental cost}}{\sum \text{Net profit after tax}}$$

3.2. Environmental Information Disclosure

Environmental information disclosure provides information about the activities carried out by the company to manage environmental damage that occurs as a result of the company's operational activities and to preserve the environment. Measure environmental information disclosure using the comparison of the number of items disclosed with all items in the sub-chapter of the environmental dimensions contained in the Global Reporting Initiative (GRI) G4 Guidelines. Environmental information disclosure consists of 34 items. The number of items disclosed by the company was assessed using the total score obtained [12]. Items disclosed by the company are given a value of 1, while items that are not disclosed by the company are assigned a value of 0. Environmental information disclosure is calculated using the following formula:

$$\text{Environmental information disclosure} = \sum \text{Items disclosed by the company}$$

3.3. Environmental Performance

Environmental performance is the company's success in reducing environmental damage caused by operational activities by making facilities and utilizing the company's capabilities. This research measure a company's environmental performance using The PROPER rating. The scoring for the PROPER ranking is presented in the table below:

TABLE 2: PROPER score.

PROPER level	Gold (Emas)	Green (Hijau)	Blue (Biru)	Red	Black
Score	5	4	3	2	1

Source: KLHK, 2021

4. Research Results

4.1. Descriptive statistical analysis

TABLE 3: Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Environmental Cost	49	0.0028	0.2635	0.0653	0.0725
Environmental Information Disclosure	49	4.00	14.00	9.510	2.6230

Source: processed data, 2021The values of descriptive statistical analysis are presented in table 3. The average value of environmental information disclosure is 9,510, meaning that manufacturing companies in Indonesia on average disclose environmental information are 9,510. The average value of the environmental cost variable is 6.53%, meaning that manufacturing companies in Indonesia have an average environmental cost of 6.53% of net profit after tax.

TABLE 4: Descriptive statistical of environmental performance.

PROPER level	Company Frequency
5 (Gold)	1
4 (Green)	12
3 (Blue)	34
2 (Red)	2
1 (Black)	0
Total	49

Source: processed data, 2021

4.2. The environmental performance variable is a variable with a nominal scale, so that the descriptive statistical presentation for environmental performance is presented using frequency. The frequency of companies obtaining Gold PROPER rating is 1; green as much as 12; blue as many as 34; red as much as 2; and neither has earned a black PROPER rating. Based on these descriptive statistics, the majority of manufacturing companies in Indonesia received a Blue PROPER rating, which means that Indonesian manufacturing companies have met the standards of the Ministry of Environment and Forestry. Goodness of fit test

TABLE 5: Goodness of Fit Model.

Result	P-Value	Criteria	
APC = 0,349	P < 0,001	Good if P < 0,05	Supported
ARS = 0,269	P = 0,002	Good if P < 0,05	Supported
AVIF = 1,292		P < 5	Supported

Source: Output WarpPLS The fit index model shows the suitability of the model with the data and shows the quality of the research model, so this measure is important in data management with WarpPLS. Fit indices are measured by the results of APC (Average Path Coefficient), ARS (Average R-Squared), and AVIF (Average Variance Inflation Factor). ARS and APC are said to be good if the P value is <0.05, while AVIF is accepted if the P value is <= 5 and ideally <= 3.3. The results in table 5, APC has a P value <0.001 which is smaller than <0.05 and ARS has a P value = 0.002 which is smaller than <0.05, so APC and ARS are supported. The AVIF value = 1.292 which is smaller than <5, so the AVIF value of this study is supported. Based on these results, this research model can be used to test the hypothesis because the interpretation of the research indicators has met the criteria for the goodness of fit model value [24]. Hypothesis Test

TABLE 6: Hypothesis Test.

Hypothesis	Variable	Path coefficient	P-value	Significance	Result
H ₁	RBL ↔ KLP	0.12	0.11	Not significant	Not supported
H ₂	RBL ↔ PIL	0.64	<0.01	Significant	Supported
H ₃	PIL ↔ KLP	0.29	<0.01	Significant	Supported

Source: processed data, 2021

RBL = Rasio Biaya Lingkungan (Environmental Cost)

PIL = Pengungkapan Informasi Lingkungan (Environmental Information Disclosure)

KLP = Kinerja Lingkungan Perusahaan (Environmental Performance)

Based on table 6, the results of the first hypothesis test have a significance value of 0.11 which is greater than the significance level of 0.05. This value proves that environmental costs have no significant effect on environmental performance, so it can be concluded that the first hypothesis is not supported. Environmental costs are funds allocated by companies to prevent and mitigate environmental damage. Environmental costs have no effect on environmental performance because companies in Indonesia have not reported environmental costs in a special report and the company's environmental performance tends to be consistent every year [17]. In addition, the environmental performance shown by the PROPER rating is directly assessed by the Ministry of Environment and Forestry regardless of the amount of costs incurred by the company. The PROPER assessment is carried out directly by the Ministry of Environment and Forestry by visiting the company and measuring the waste produced directly. The results of this study support the results of research by [5].

The result of the second hypothesis test has a significance value <0.01 which is smaller than the significance level of 0.05. This value proves that environmental costs affect the environmental information disclosure, so it can be concluded that the second hypothesis is supported. Companies that have allocated environmental costs will disclose environmental information as additional information related to activities that have been carried out to manage environmental damage. This is because the environmental information disclosure is a realization of the costs incurred by the company. The results of this study are in accordance with the results of research by [7, 25, 26]

The third hypothesis test results have a significance value <0.01 which is smaller than the significance level of 0.05. This value proves that the environmental information disclosure has a significant effect on environmental performance, so it can be concluded that the third hypothesis is supported. Environmental information disclosure by the company will strengthen the perception of external parties regarding the company's concern in protecting the environment. Environmental information disclosure delivered by the company will be proof of its concern for the environment and have an impact on improving the company's image, so that the company's environmental performance will

increase. The results of this study support the results of research by [27] which found that environmental information disclosure has an effect on environmental performance.

5. Conclusion

Based on the explanation regarding the hypothesis test results obtained in this study, it can be concluded that environmental costs have no effect on environmental performance, environmental costs have a positive and significant effect on environmental information disclosure, and environmental information disclosure has a positive and significant effect on environmental performance. These results indicate that the environmental information disclosure mediates the effect of environmental costs on environmental performance. This is based on the results of hypothesis testing which shows that there is no direct influence between environmental costs on environmental performance. This research has limitations regarding the number of data samples for the nominal disclosure of environmental costs and the environmental information disclosure from 2015 to 2019. This is because, there are still a few manufacturing companies in Indonesia that provide information related to costs incurred specifically for environmental management and environmental information disclosure. In addition, the PROPER ranking of manufacturing companies in Indonesia tends to be monotonous every year. Future research is expected to find a solution to the limitations of current research by increasing the number of samples of manufacturing companies in a wider area or using samples of companies in other fields.

Acknowledgment

The authors would like to thank the Institute of Research and Community Services Universitas PGRI Yogyakarta for funding this research. This research was funded by Beginner Lecturer Research Grant from Institute of Research and Community Services Universitas PGRI Yogyakarta, Indonesia.

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