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The Role of Financial Performance in Increasing Environmental Performance with Firm Size as Moderating Variable

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ABSTRACT

This study aims to analyze and obtain empirical evidence about the effect of profitability and leverage on environmental performance with size as a moderating variable. This research is a quantitative study with data collection technique through documentation in the form of annual financial reports. The population of this study is 143 manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2016-2018. Based on purposive sampling technique were obtained a sample of 65 companies and 195 analysis units. The data analysis technique used is moderated regression analysis (MRA) with IBM SPSS 25 software. This study found a significant negative effect between profitability and leverage on environmental performance and firm size is able to moderate the effect of profitability and leverage on environmental performance. Based on the results, this study concludes that the large company will try to improve their environmental performance when profitability and leverage conditions increase or decrease. Future research is suggested to use the amount of carbon produced, the amount of water used, and the number of work accidents as a measurement of environmental performance.

INTRODUCTION

Environmental performance is a company effort in carrying out its obligations to the environment. One of these efforts is realized through the implementation of CSR (Corporate Social Responsibility). CSR is an activity done by a company as a form of corporate responsibility and concern for society and the environment (Yanto, 2012). Hadiyanti & Widarsono (2015) revealed that environmental concerns arise because of the push from outside companies such as the government, stakeholders, and competitors. This encourages companies to create a proactive approach to minimize the occurrence of environmental damage caused by company operations through the implementation of environmental management activities.

Vasanth et al.(2015) argued that the increase in the number of industries contributes to changes in environmental conditions caused by the results of industrial operating activities. This will result in a reduced supply of natural resources needed for production activities. Lack of natural resources will make it difficult for companies to improve their financial performance, as they need to spend more costs to obtain resources. For this reason, companies need to carry out CSR activities to maintain the availability of natural resources.

Currently, companies are still only focused on improving financial performance, so that without realizing it, it will threaten the sustainability of the company's business. Central Bureau of Statistics (2018) conveyed that from 2016 to 2017, there was a decrease in water quality in Indonesian rivers, as many as 18 rivers were indicated to have good quality and 14 other rivers had poor quality. This is caused by piles of garbage that are not properly managed, causing liquid which then enters the river through waterways and causes water pollution. Ferdianto (2019) stated that thousands of manufacturing companies in Central Java do not have permits to manage hazardous and toxic waste materials (B3). This is revealed based on the data obtained by the Environment and Forestry Service of Central Java (DLHK) from 1,975 manufacturing companies in Central Java, only 500 companies that have processed B3 waste management permits. Pintea et al., (2014) also revealed that developing countries like Indonesia tend to have low environmental awareness and culture.

Based on the existing gap phenomena, it can be

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concluded that company performance currently is not only seen from the financial aspects but also the non-financial aspects such as corporate environmental performance. This requires companies to be able to establish the right concept in running their business so that company goals can be achieved. The key to achieving corporate environmental performance and financial performance is the implementation of green manufacturing. Green manufacturing is a concept used to realize a green company and further will increase the potential for business sustainability and the company's financial performance.

Financial performance is an analysis concerning the ability of a company to carry out its role as an economic agent relating to managing its finances to achieve company goals. Profitability is one of the factors of financial performance as seen based on the company's ability to earn profits on the amount of the company's share capital, the amount of assets owned, or the company's total sales (Sari & Ulupui, 2014). A high level of profitability in a company will drive the company to carry out activities related to the environment. This is due to stakeholders who consider companies with high profitability to make decisions. Hadiyanti & Widarsono (2015), Wulandari & Kiswanto (2016), Vasanth et al.(2015,) and Laguir et al.(2018) stated in their findings that environmental performance is affected by the level of corporate profitability. In contrast to Yesika & Chariri (2013) and Sari & Ulupui (2014) who stated that profitability does not affect management to carry out environmental activities.

Another financial performance used as a proxy in this study is leverage. Sarumpaet et al., (2017) stated that leverage is the amount of debt a company has to finance or buy company assets. Companies with high levels of leverage will be careful in allocating their financial resources. Companies in this condition are more motivated to conduct environmental activities to improve their environmental performance and disclose more non-financial information. Considering stakeholders currently do not only assess the company in the financial aspect will help the company to divert negative issues related to company performance. Hadiyanti & Widarsono (2015), Palupi et al.(2014), and Laguir et al.(2018) agreed that leverage affects the company's efforts to improve its environmental performance. On the other hand, Yesika & Chariri(2013) and Sari & Ulupui (2014) had another opinion, they stated that leverage does not affect the company's efforts to conduct activities related to the environment.

This study aims to examine financial performance that is profitability and leverage in influencing corporate environmental performance. Research that examines the effect of profitability and leverage on environmental performance still needs to be conducted to find out the effect direction of profitability and leverage on environmental performance. Besides that, there have been many studies related to this, but the results are inconsistent. This motivates this study to present a moderating variable that is firm size which refers to the research conducted by Sari & Ulupui(2014), Biswas et al.(2018), Giannarakis et al.(2017), Dewi & Yasa (2017), and Dewi et al.(2013) which state that firm size plays a role in influencing corporate environmental performance. Based on the findings regarding the consistent effect of firm size on environmental performance from several studies, it is assumed that firm size can moderate the effect of profitability and leverage on environmental performance.

The effect between profitability and leverage on environmental performance can be explained by stakeholder theory and legitimacy theory. Stakeholder theory explains that the goal of establishing a company is not only to meet the needs and welfare of its owners but also for stakeholders (Sawitri, 2017). This indicates that company goals currently focus on three aspects namely profit, people, and planet. Expanding company goals drive managers to set the right strategy in order to achieve the goals efficiently. Yook et al., (2017) stated that the importance of right business sustainability strategies would encourage managers to increase costs to carry out environmental activities. The implementation of CSR activities will improve environmental performance so that it can be the right strategy to be implemented by managers. Social responsibility activities carried out by a company can be interpreted as a long-term investment that will support the company's competitive advantage (Sawitri, 2017).

Legitimacy theory reveals that there must be a common perception or assumption between the company and the values that exist in society. Every action or decision taken by the company in carrying out its operational activities is expected to provide reciprocity in accordance with the wishes of the community. The community expects that the company can carry out its operational activities properly and minimize the impact of these activities on environmental damage. The alignment of values between the company and the community will create a good relationship between the company and the community. This good relationship will be a supporting factor for the smooth of corporate operating activities considering that the community is part of the stakeholders whose trust must be built by the company. This indicates that when the company experiences an increase or decrease in profitability and leverage, the company must still meet obligations to environmental management and improve environmental performance.

Environmental performance is an assessment of a series of activities in the environmental sector carried out by a company at the expense of its resources, both financial and non-financial. Environmental performance is the result of activities done by companies in maintaining and improving environmental sustainability as a form of corporate responsibility to the environment. The implementation of these environmental activities will have an impact on the availability of natural resources which will further support the sustainability of the company in the future.

Profitability indicates the company's ability to manage company resources to generate profits. A high level of profitability indicates that the company has the ability to increase the company's financial resources through corporate operating activities properly. This is supported by stakeholder theory which explains that a company must run its operations to meet the needs and welfare of shareholders and stakeholders. Thus, an increase in the company's financial resources from an increase in profits, the company will allocate these financial resources to conduct environmental management activities. This environmental activity is done in order to increase the company's competitive advantage and reputation (Sarumpaet et al., 2017). This research is in line with the research conducted by Hadiyanti & Widarsono (2015), Vasanth et al.(2015), Wulandari & Kiswanto (2016), and Laguir et al.(2018) who found a positive effect between profitability on environmental performance.

H_1: Profitability has a significant positive effect on corporate environmental performance

Leverage is the company's capacity in managing financial resources that come from debt to finance the acquisition of company assets. Companies with high levels of leverage will be more careful in allocating their financial resources so that the company can fulfill its obligations in paying debts and achieve company goals efficiently. This condition will drive managers to choose an effective strategy to divert negative issues about the company and prove corporate responsibility.

Usmar (2014) revealed that positive accounting theory plays a role in helping managers to determine effective strategies to meet their obligations to shareholders and stakeholders. This theory provides guidelines for managers to be able to predict and consider the implementation of environmental activities as an appropriate strategy in diverting negative issues and proving the company's concern for the environment. The implementation of environmental activities determined by managers as a strategy will improve the company's performance in the environmental sector which in turn will increase the company's value. In addition, good environmental performance will increase the potential for business sustainability so that the company has the ability to increase profits and pay debts in the future.

Stakeholder theory states that company goal is to meet corporate economic and social needs. This encourages managers to conduct environmental management and improve environmental performance, both when corporate leverage is high and low. Companies with good environmental performance tend to disclose more information and gain economic benefits from the publication of information related to positive activities conducted by the company (Tadros & Magnan, 2019). This will reduce corporate pressure from shareholders and creditors and build good social relations with the community. Legitimacy theory also states that environmental performance is a company's strategy in proving its legitimacy to the community. This is supported by the previous research on leverage and environmental performance conducted by Hadiyanti & Widarsono (2015), Palupi et al.(2014), and Laguir et al.(2018) which state that there is a positive relationship between leverage on environmental performance.

H_2: Leverage has a significant positive effect on corporate environmental performance

Firm size is a corporate description through a scale seen from several factors, one of which is the number of assets owned by the company. Legitimacy theory states that the larger the scale of a company tends to get attention from the public so that the company is more careful in making every decision. Public attention to large companies drives the companies to contribute to the implementation of environmental management and preservation. It is expected that the implementation of environmental activities will be carried out in the long term so that the companies need to budget costs for the implementation of these activities. The high cost of implementing environmental activities means that this activity can only be carried out by companies that have a high amount of assets (Laguir et al., 2018). This indicates that large companies are able to conduct environmental management activities and improve their environmental performance both when the companies have an increase and decrease in the level of profitability. The idea of firm size that will strengthen the effect of profitability on environmental performance is supported by Sari & Ulupui(2014), Biswas et al.(2018), Dewi &Yasa (2017), and Giannarakis et al.(2017) who proved that there is a positive effect between firm size and environmental performance.

H_3: Firm size positively and significantly moderates the effect of profitability on environmental performance

Firm size is a big or small size of a company. Large companies tend to have good public images and get more supervision from shareholders and stakeholders. This supervision creates an obligation for companies to be more careful in making decisions. Shareholders and stakeholders put pressure on the company to meet their needs that is increased financial performance and environmental performance. This condition pushes management to carry out environmental management and disclose this information to show that the company has fulfilled its obligations to the environment (Giannarakis et al., 2017). In addition, the increase in environmental performance will increase corporate business sustainability in the long term. This indicates that when the company has the ability to pay debt is high or low, the company will continue to conduct environmental management and preservation activities. This research is in line with the research conducted by Biswas et al.(2018), Giannarakis et al. (2017), Dewi & Yasa (2017), and Sari & Ulupui(2014) that found a positive effect between firm size and environmental performance, where the companies that disclose environmental information are companies that have good environmental performance.

H_4: Firm size positively and significantly moderates the effect of leverage on environmental performance.

RESEARCH METHODS

This research was a quantitative research with explanatory research type which will explain the relationship or effect between independent variables on dependent variable. This study used secondary data with objects of manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2016 to 2018. The research object was chosen since the manufacturing companies were the companies that utilize half of the total B3 produced (Central Bureau of Statistics, 2018). This indicated that compared to other sectors, manufacturing had a good environmental performance, so this research would reveal how much financial performance played a role in improving environmental performance in the manufacturing companies. The sampling technique used purposive sampling technique which has been determined by predetermined criteria in table 1.

This study used two independent variables, one dependent variable, and one moderating variable. In summary, the definition of each variable and the measurement of the variables used in this study are illustrated in table 2.

The research data were collected using a documentation technique by collecting corporate documentation in the form of annual reports published by the IDX and companies. Data analysis used two analysis techniques, namely descriptive statistical analysis and MRA (moderated regression analysis) as a regression analysis model of the moderating variable. The analytical tool used was IBM SPSS version 25 software and a previously classical assumption test with a significance level of testing (α) of 0.05 or 5% is conducted. The following is the formulation of the regression model seen in equation 1.

$$KL=\alpha+\beta_1 X_1+\beta_2 X_2+\beta_3 X_1M+\beta_4 X_2M+e \quad (1)$$

Table 1. Results of the Research Sample

No.	Sample Criteria	Elimination	Total
	Population		143
1.	Manufacturing companies listed on the IDX 2016-2018	(0)	143
2.	Companies that published annual financial statements in 2016-2018	(5)	138
3.	Companies that disclosed CSR costs in 2016-2018	(73)	65
	Observation years		3
	Total samples		195
	Outlier data		(41)
	Total analysis units		154

Source: Secondary data processed (2020)

RESULTS AND DISCUSSIONS

This study examines 65 manufacturing companies listed on the IDX for three years. Descriptive statistical tests are carried out to know the description of the research data used through the minimum, maximum, mean, standard deviation, variance, sum, range, kurtosis, and skewness values (Ghozali, 2013). The results of the descriptive statistical test are shown in table 3.

The Kolmogorov Smirnov test (K-S) is a normality test used in this study. The result of this test shows a significance value of 0.200 and this number is greater than the specified significance value of 0.05. The result implies that the research data are normally distributed. The multicollinearity test results in a VIF (Variance Inflation Factor) value that is less than 10 and a tolerance (T) value greater than 0.1. The result concludes that the research data does not have a multicollinearity problem. The result of the autocorrelation test using Durbin-Watson results in a Durbin-Watson value of 2.233. Based on the test, it can be seen that the research model does not occur autocorrelation because it meets the decision-making criteria, namely dU <d <4-dU (1.7629 <2.233

Table 2. Operationalization of the Research Variables

No	Variables	Definition	Indicators	Measurements	Scale
1.	Profitability (X_1)	The ability of a company to generate revenue that is greater than expenses (Vasanth, et.al 2015).	ROE	ROE = (Net profit after tax)/(Total Capital) (Vasanth, et.al, 2015)	Ratio
2.	*Leverage* (X_2)	The ability of companies to finance their assets through debt (Sarumpaet, et.al, 2017).	DAR	DAR = (Total debt)/(Total asset) (Laguir, et.al, 2018)	Ratio
3.	Firm Size (M)	Firm size describes small or large size of a company. (Laguir, et.al 2018)	Total asset	Firm Size =log(book value of total asset) (Laguir, et.al, 2018)	Ratio
4.	Environmental Performance (KL)	The efforts of companies to create environmentally friendly operations (Yook, et.al 2017).	CSR costs in one period	Environmental Performance = Total CSR costs (Yook, et.al, 2017)	Nominal

Source: Secondary data processed (2020)

Table 3. Results of Descriptive Statistics Test

	Min	Max	Mean	Std. Deviation
Environmental Performance	3.12	12.68	7.47	1.97
Profitability	-11.04	5.12	.07	.93
Leverage	.08	2.06	.52	.32
Firm size	4.95	8.54	6.45	.69

Source : Data processed using SPSS version 25, 2020

<2.2371). The heteroscedasticity test of this study used the Park test which indicates that the significance level of each variable is greater than the predetermined significance level of 0.05. The result indicates that the research model is free from heteroscedasticity symptom.

The coefficient of determination shows a value of 0.183 or 18.3%. This means that the environmental performance variable is explained by profitability and leverage variables of 18.3% and 81.7% of the environmental performance variable is explained by other variables not used in this research model. The results of the research hypothesis test are explained briefly in table 4.

The Effect of Profitability on Environmental Performance

The result of the study in table 4 indicates that profitability has a significant negative effect on environmental performance. Stakeholder theory presumes that companies with high levels of profitability will fulfill their obligations to the environment. The implementation of this obligation will improve environmental performance and further increase the company's competitive advantage in the long term. This assumption is rejected, companies with high profitability do not need to report and disclose information related to environmental social activities since reporting environmental information is considered to interfere with information on the company's success (Yesika & Chariri, 2013). This finding indicates that profitability is not an important factor in improving the environmental performance of a company as the implementation of environmental management is based on awareness and is voluntary (Sawitri, 2017). This result is supported by previous researchers namely Yesika & Chariri (2013) as well as Sari & Ulupui(2014) who stated that environmental performance is not affected by an increase in company profitability as well as Palupi et al. (2014) stated that there is a negative effect between profitability on environmental performance.

The Effect of Leverage on Environmental Performance

The results of hypothesis testing in Table 4 conclude that leverage has a significant negative effect on environmental performance. The presumption of stakeholder and positive accounting theory which state that the level of corporate leverage will influence managers to improve environmental performance as a strategy to achieve company goals is not in line with these results. Hadiyanti & Widarsono (2015) stated that a high level of debt will make companies consider allocating more costs for social and environmental activities. This finding proves that the debt owed by the company is not used to finance the implementation of the social and environmental corporate activities, but to increase future profits and fulfill its debt covenants. This finding is consistent with the finding of Gao & Connors (2011) which states that leverage has a negative effect on CSR (Corporate Social Responsibility) disclosure, which is a proxy for environmental performance in this study.

Firm Size Moderates the Effect of Profitability on Environmental Performance

Table 4 above shows that firm size is able to strengthen the effect of profitability on environmental performance. In line with the presumption of legitimacy theory which states that large companies more become the center of public attention and get high trust from shareholders and stakeholders. This condition will increase the company's ability to generate profits and be able to spend more on the implementation of environmental social activities. This is done as a management strategy to improve and maintain trust and to prove the company's legitimacy to shareholders and stakeholders. This has the same opinion as Laguir et al.(2018) who revealed that large companies are able to commit to carry out their obligations and meet the pressure from stakeholders to carry out environmental activities. This research is supported by research conducted by Biswas et al. (2018) who stated that there is a significant effect between firm size on environmental performance.

Table 4. Summary of Hypothesis Test Results

	Hypothesis	Regression Coefficient	Sig.	Alpha	Decisions
H_1	Profitability has a significant positive effect on environmental performance	-0.860	0.017	0.05	Rejected
H_2	Leverage has a significant positive effect on environmental performance	-5.042	0.000	0.05	Rejected
H_3	Firm size positively and significantly moderates the effect of profitability on environmental performance.	0.459	0.002	0.05	Accepted
H_4	Firm size positively and significantly moderates the effect of leverage on environmental performance.	2.653	0.000	0.05	Accepted

Source: Data processed using SPSS version 25, 2020

Firm Size Moderates the Effect of Leverage on Environmental Performance

The results of the hypothesis are described in table 4, indicating that firm size can moderate the effect of leverage on environmental performance positively and significantly. This finding is in line with stakeholder theory and proves that large companies allocate financial resources originating from debt to carry out activities related to the goal of the company establishment which is to improve corporate financial performance and environmental performance. Although the level of debt owned is high, large companies have gained stakeholders' trust as a result of disclosing positive company activities that is environmental activities (Giannarakis et al., 2017). A good corporate environmental performance will ease shareholders and stakeholders to obtain information and analyze future cash flows as well as reduce business uncertainty. This research is supported by research conducted by Dewi & Yasa(2017) and Giannarakis et al. (2017) who stated that there is a positive effect between firm size on environmental performance.

CONCLUSIONS

The testing results conclude that profitability and leverage have a significant negative effect on environmental performance. The effect of profitability and leverage becomes significant positive on environmental performance after the existence of firm size as the moderating variable. This shows that firm size can moderate the effect of profitability and leverage on environmental performance.

Decisions taken by management will affect the company's performance and determine whether the goals set by the company are achieved or not. The levels of profitability and leverage are consideration factors for manufacturing companies to carry out environmental activities. This occurs since the increase in costs that must be incurred by the company will have an impact on the decrease in profit earned and the company's ability to pay debts.

The object of this research is only carried out in manufacturing companies so this research cannot be generalized to companies in sectors other than manufacturing. Further research can expand the object of research according to the type of industry in order to get more specific results. In addition, this research uses the total cost of CSR (Corporate Social Responsibility) as a measure of a company's environmental performance. Thus, further researchers can use other measurements such as the amount of carbon produced, the amount of water used, the number of work accidents, or other environmental performance measurements.

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