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The Effect of Enviromental Cost and Enviromental Perfomance on Firm Value Moderated by Financial Perfomance

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ABSTRACT

Environmental concerns are now a primary focus for companies, driven by the negative impacts their operations often have on surrounding communities. Using financial performance as a moderating variable, this study examines how environmental costs and performance affect corporate value. A quantitative technique was used to study mining businesses listed on the Indonesia Stock Exchange between 2021 and 2023. SmartPLS was used to examine secondary data from these companies' annual reports. The findings show that environmental performance has a positive impact on business value, but environmental costs have no influence. Additionally, it was discovered that while financial success did not moderate the association between environmental performance and firm value, it did moderate the relationship between environmental expenses and firm value. According to these results, businesses that perform well financially are better equipped to control environmental expenses without sacrificing profitability

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1. INTRODUCTION

The mining sector contributes significantly to national income and employment. However, mining activities by mining companies also have negative impacts, affecting environmental, social, and economic aspects. According to [1]. Companies tend to use the principle of maximization toget maximum profit, but neglect the environment due to lack of management and interest in environmental conservation. Environmental expenditures encompass both external and internal expenses associated with an organization's endeavors to safeguard the environment and mitigate environmental harm [2]. Environmental cost allocation is necessary to ensure that companies implement environmentally friendly practices, which can influence public perception and increase company value through a better reputation among stakeholders. Corporate Performance Rating Program in Environmental Management (PROPER) Is a program run by the government in order to improve the environmental management

performance of companies which is reflected in environmental performance. A company's worth and reputation in the marketplace can be improved by its environmental performance [3].

The ability of a busines to turn a profit from its operations is known as profitability, and it is used as a standard to assess its financial performance[4] dan [5]. Profits are the way the corporation displays the outcomes of its operations, which will later be used by external parties, namely investors, to analyze the company's performance and influence decision-making, as well as being reflected in the company's value [6]. [7] feels that a publicly traded company's share price can serve as a standard for decision-making and represent the company's worth on the capital market. Previous research [5] discovered that environmental expenses had an impact on business value; yet, this conclusion runs counter to earlier studies [8], research concluded that business value is unaffected by environmental costs. New research [9] found the same thing with the title. The impact of capital structure, financial performance, environmental performance, and environmental costs on company value.

This study focuses on how mining businesses' value is affected by the way financial performance can control the link between environmental costs and environmental performance. Strong financial performance makes it easier for a business to pay for environmental expenses without compromising profitability, which increases the beneficial impact of environmental performance on business value. For the mining industry to be sustainable, both environmentally and commercially, environmental concerns must be managed effectively.

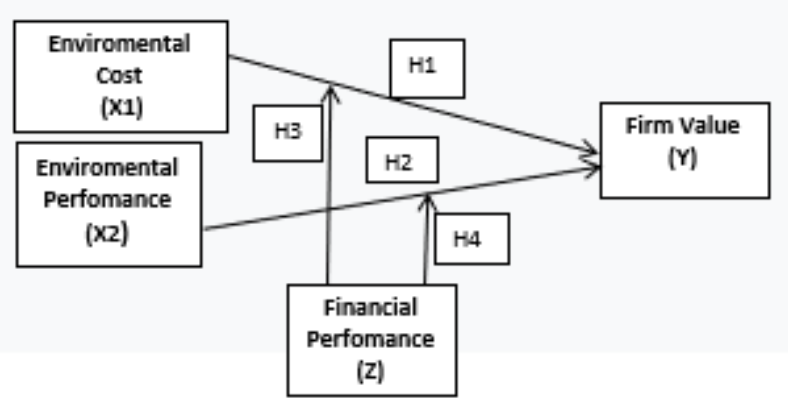

Figure 1. Hypothesis Model

2. METHOD

The population used in this study is mining sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2021-2023. Quantitative data in the form of yearly reports from the company will be processed, with an emphasis on numerical measurements and statistical analysis to determine the significance of the variables and their causal links. Purposive sampling was used to obtain the sample. Structural Equation Modeling (SEM) analysis, which looks at variables and their relationships, is the analytical technique employed. This method uses several test models, including descriptive statistical analysis tests to determine data distribution, validity tests, which indicate how well the measuring instrument used, reliability tests, which indicate whether the results are reliable, inner model tests, which determine the level of significance of the hypothesis, and hypothesis testing.

2.1 Research Variable

2.1.1 Dependent Variable

a. Environmental costs are the expenses brought on by the company's industrial process's bad environmental quality.

Environmental Cost = Environmental Cost / Net profit after tax

b. Environmental Performance a result that can be measured through a program launched by the Ministry of Environment in 2002, namely the Corporate Performance Assessment Program in Environmental Management (PROPER).

Criteria of PROPER:

a. Gold = Excellent = 5
b. Green = Good = 4
c. Blue = Fair = 3
d. Red = Poor = 2
e. Black = Very Poor = 1

2.1.2 Moderating Variable

Financial Performance are the company's achievement in meeting its targets within a certain time period is defined as financial performance, which indicates the quality of the company.

Return of Assets = (Profit After Tax / Total Assets)

2.1.3 Indepedent Variables

Company value is an Investors' perception of a firm's degree of success, and it is strongly correlated with its share price.

$$\text{Price Book Value} = \frac{\text{Market Price/share}}{\text{Book Value/share}}$$

3. RESULTS AND DISCUSSION

3.1 Result

Table 1. Descriptive Statistical Analysis

	Min.	Max.	Mean	Std. Dev.
Enviromental Cost (X1)	-1.230	5.280	1.902	1.779
Enviromental Perfomance (X2)	3.000	5.000	3.750	0.829
Company Value (Y)	0.120	227.850	73.170	57.495
Financial Perfomance (Z)	-7.350	68.760	21.114	19.891

1. Environmental Costs

The Environmental Cost variable has a minimum value of -1.230, a maximum value of 5.280, an average value of 1.902, and a standard deviation of 1.779. It is calculated by dividing the environmental cost allocation by profit after tax. PT. Golden Energy Mines Tbk has the highest environmental cost allocation of any corporation.

2. Environmental Performance

The Ministry of Environment and Forestry's Corporate Performance Rating Program in Environmental Management (PROPER) measures the Environmental Performance variable, which has an average value of 4 and a minimum value of 3. This demonstrates that mining companies have implemented the required environmental management measures in compliance with relevant laws and regulations for each of the 30 samples.

3. Company values

In this study, Tobin's Q is a ratio that characterizes the value of the company as the dependent variable by dividing its market capitalization value by its total assets. According to the analysis's findings, the company's value ranges from a minimum of 0.120 to a maximum of 227.850, with an average of 73.170.

The mining company with the highest Tobin Q value is PT. Bayan Resources Tbk, with a rating of 227.850.

4. Financial Performance

The financial performance variable, which is determined by Return on Assets (ROA), has a minimum value of -7.350, a maximum value of 68.760, and an average value of 21.114. The return on assets (ROA) measures a company's capacity to provide returns on assets used. According to a survey of 30 mining companies, PT. Golden Energy Mines Tbk's proxy ROA in 2022 was 68.76.

Table 2. Discriminant Validity (Heterotrait-Monotrait Ratio)

	Enviromental Cost (X1)	Financial Perfomance (Z)	Enviromental Perfomance (X2)	Enviromental Cost* Financial Perfomance	Enviromental Perfomance * Financial Perfomance	Company Value (Y)
Enviromental Cost* Financial Perfomance						
Financial Perfomance (Z)	0.740					
Enviromental Perfomance (X2)	0.223	0.094				
Enviromental Perfomance * Financial Perfomance	0.217	0.332	0.408			
Company Value (Y)	0.490	0.484	0.015	0.164		
Enviromental Cost (X1)	0.563	0.648	0.227	0.327	0.314	

The table above shows that the Heterotrait-Monotrait Ratio (HTMT) value for all constructs is <0.90, meaning that the discriminant validity is said to be very good.

Table 3. Composite Reliability

Composite Reliability	
Enviromental Cost (X1)	1.000
Financial Perfomance (Z)	1.000
Enviromental Perfomance (X2)	1.000
Enviromental Cost* Financial Perfomance	1.000
Enviromental Perfomance * Financial Perfomance	1.000
Company Value (Y)	1.000

All variables in this study have a combined reliability value of more than 0.7, so it can be concluded that all variables have met the reliability test and can be considered reliable.

The R^2 results generated from the analysis of model structure data with Smart PLS 3 between environmental costs, environmental performance, The following are the effects of financial performance on corporate value:

Table 4. R Square

	R Square	R Square Adjusted
Nilai Perusahaan	0.571	0.474

R Square of 0.571 shows a moderate influence of the independent variables of environmental costs and environmental performance on company value.

Table 5. Effect Total

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
Enviromental Cost → Company Value	-0.064	-0.130	0.338	0.188	**0.851**
Financial Perfomance → Company Value	0.646	0.692	0.260	2.486	**0.013**
Enviromental Perfomance → Company Value	0.427	0.409	0.198	2.159	**0.031**
Moderating Effect 1 → Company Value	0.285	0.290	0.136	2.100	**0.036**
Moderating Effect 2 → Company Value	0.027	-0.010	0.280	0.098	**0.922**

H1 = Environmental Costs have a positive effect on Firm Value in mining companies from 2021 to 2023. According to Table 5, the Original Sample value is -0.064, meaning that there is no relationship between environmental costs and firm value. The first hypothesis is rejected since there is no relationship between Environmental Costs and Firm Value, as indicated by the p-value of 0.851, which is higher than 0.05.

H2 = Environmental Performance has a positive effect on Corporate Value in mining companies for the period 2021-2023. According to Table 5, the Original Sample value is 0.646, which shows that Corporate Value and Environmental Performance are positively correlated. The second hypothesis is accepted since the p-value between Environmental Performance and Corporate Value is 0.013, which is less than 0.05 and shows a substantial positive influence.

H3 = Financial Performance Strengthens Environmental Costs on Firm Value in Mining Companies in the period 2021-2023 . Table 5 shows that the Original Sample value is 0.285, which suggests that financial success has a positive moderating influence on environmental costs and company value. The third hypothesis is supported by the p-value of 0.036, which is less than 0.05 and indicates that there is a significant association between environmental performance and business value as regulated by financial performance.

H4 = Financial Performance Strengthens Environmental Performance on Corporate Value in Mining Companies for the 2021-2023 Period. A positive moderating effect of financial success on environmental performance on corporate value is indicated by the Original Sample value of 0.27, which is based on Table 5. The fourth hypothesis is rejected since the p-value for the association between environmental performance and corporate value, which is tempered by financial performance, is 0.922, more than 0.05, suggesting that the relationship is not significant.

3.2 Discussion

3.2.1 The Influence of Environmental Costs on Company Value

With a P-value > 0.05 of 0.851 and a t-statistic hypothesis test result smaller than the t-table (1.967), the analysis results indicate that environmental expenditures have a negative and negligible impact on corporate value. This suggests that environmental expenses have little bearing on a company's worth.

The study's findings confirm earlier research showing that environmental costs have little bearing on a company's worth.[9], [8] and.[10] However, research [9] found that environmental costs affect company value. If the research period and methods used were different, the research results could be different. [10] using ereviews 10, and other studies [9] using SPSS.

The study's findings show that the amount of money spent on environmental initiatives has no direct impact on a company's worth. Although there is an assumption that increasing environmental costs can reduce company value because investors may be concerned about the impact on cash flow and profitability, this study found that the relationship is not significant. This is evident in the conversion of forest to mining land, PT. Adaro Energy Tbk incurred environmental costs of 675,786,240 million rupiah in 2021 for flood rehabilitation in South Kalimantan. When compared to the allocation of environmental costs in 2023, which is lower than in 2021 at 645,707,490, the company value in 2023 is higher at 75.81, despite the fact that this cost is rather considerable. This means that the 34.0 decline in company value in 2021 cannot be solely attributable to environmental expenses. This show that a number of additional factors, including market dynamics, governmental regulations, and the macroeconomic environment, can have an impact on this reduction, [2]. Consequently, the study's findings suggest that environmental expenses do not primarily influence shifts in a company's value.

3.2.2 The Influence of Environmental Performance on Company Value

The analysis's findings demonstrate that environmental performance has a positive and significant impact on company value, as evidenced by the P-value > 0.05 of 0.013 and the t-statistic hypothesis test results exceeding the t-table (1.967) by 2,388. This suggests that the value of a corporation is influenced by environmental performance.

The results of this study are in line with research conducted [11] that environmental performance has an impact on company value and [4] although not significant. However, it is not in line with the research conducted [6], [12] and [13] claimed that the value of a firm is not significantly impacted by environmental performance. The various research objects are the cause of the disparity in the study finding, [14] is a mining company while the research conducted [15], this shows that not all investors consider environmental performance as an indicator for investing because good environmental performance does not necessarily indicate that a company can provide profits for investors.. It can be seen that differences in research objectives can lead to different research results. The mining sector is more closely related to the environment than the manufacturing sector.

The Ministry of Environment's PROPER scale, which is designed to ensure adherence to environmental standards, is used to quantify environmental performance. Good environmental performance is more appreciated by the market because it is considered an indicator of good management and long-term sustainability. The 30 mining companies sampled demonstrate consistency in evaluating and taking responsibility for their environmental operations. As mining activities are closely related to environmental issues, this enhances the company's image. A mining firm that performs well in terms of the environment draws stakeholders who have faith in the company's ability to continue operating. Stakeholders will be more confident in a mining company's sustainability if it performs well in terms of the environment,[8] This will be reflected in the value of mining companies. The value of mining companies will increase along with the quality of their environment.

3.2.3 The Effect of Environmental Costs on Firm Value Moderated by Financial Performance

With a P-value > 0.05 of 0.031 and a t-statistic hypothesis test result bigger than the t-table (1.967) of 2,180, the analysis's findings demonstrate a positive and substantial relationship between environmental expenses and firm value, which is mitigated by financial performance. This suggests that the impact of environmental expenditures on business value is mitigated by financial performance.

The findings of this investigation are consistent with previous studies. [14] entitled "Analysis of the Influence of Environmental Performance and Environmental Costs on Company Value, with Financial Performance as an Intervening Variable." According to the study, environmental expenditures have an impact on a company's worth by way of its financial performance. This is in line with earlier study, even though financial performance was utilized as a mediating variable. This study demonstrates that the impact of environmental expenses on business value is amplified by financial performance. This implies that businesses with strong environmental cost management will be more valuable in terms of their capacity for sustainability. The link between environmental expenses and corporate value is further reinforced by the moderation of financial performance. When financial performance declines, the correlation between environmental costs and corporate value is further reinforced. The financial performance of a business reveals its strength and whether it has the resources to enable sustainability in an economical manner. Improved performance means that the business can share environmental costs more easily. This would show that the business can accept complete accountability for all of its deeds.

The findings of this study are consistent with signaling theory, which holds that stakeholders receive a signal about a company's prospects from financial reports. However, as businesses should put financial stability ahead of sustainability when financial performance is low, allocated environmental expenditures may end up being an extra burden if financial performance suffers.

3.2.4 The Influence of Environmental Performance on Corporate Value is moderated by Financial Performance

With the t-statistic hypothesis test results being less than the t-table (1.967) by 0.092 and the P-value > 0.05 by 0.927, the analysis's findings demonstrate that environmental performance has a positive and insignificant impact on company value. This suggests that financial performance is unable to mitigate the impact of environmental performance on company value.

Focusing on mining sector objects whose operational activities impact the environment as an environmental performance factor can directly influence Tobin's Q without needing to be moderated by ROA. This is because Tobin's Q is more influenced by market perceptions, growth expectations, and extrinsic elements like investor opinion toward sustainability or macroeconomic situations. The study's findings are consistent with earlier investigations.[8], who discovered that while financial performance has an impact on firm value, environmental performance does not.

In general, environmental performance measured by appropriate standards concentrates on long-term environmental sustainability, such as pollution mitigation or after-effects of operational activities, However, return on assets, a metric used to analyze financial performance, focuses on how well assets are used to produce short-term profits, [14] As a result, return on assets, which reflects short-term financial performance, cannot moderate environmental performance

4. CONCLUSION

This study looks at mining businesses between 2021 and 2023 with an emphasis on how environmental expenses and performance impact firm value. It also looks at how financial performance acts as a moderator. The associated hypothesis is rejected by significant findings showing that environmental costs have no discernible impact on business value (p-value = 0.851). On the other hand, environmental performance significantly and favorably affects business value (p-value = 0.017).

Additionally, the association between environmental expenses and firm value is shown to be moderated by financial performance (p-value = 0.030), but the relationship between environmental performance and firm value is not moderated by financial performance (p- value = 0.927). However, this study has several inherent limitations, including heterogeneity in reporting standards and environmental cost disclosure policies across companies, as well as the potential impact of fluctuations in macroeconomic conditions, government policies, and environmental regulations during the observation period on the validity of the results.

Notwithstanding these drawbacks, this study offers a significant contribution. By elucidating the intricate relationships among environmental factors, business value, and the moderating influence of financial performance, it enhances the body of knowledge in academia. According to the findings, managers of mining companies can increase their value by putting good sustainability practices into place and allocating environmental resources as efficiently as possible. To increase the consistency and dependability of the findings, future studies should increase the sample size and use more extensive research tools. It is also advised to prolong the study period in order to gather more information, lessen temporal bias, and provide a more thorough comparative examination of the effects of regulatory changes. This would increase the consistency and dependability of the findings.. Furthermore, the integration of primary data, such as surveys or interviews with key stakeholders, would strengthen and validate the findings derived from secondary data.

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