PROFITABILITY AS MODERATION: THE EFFECT COST, PERFORMANCE, AND ENVIRONMENTAL DISCLOSURE ON FIRM VALUE

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ABSTRACT

Growing awareness of environmental issues influences how pharmaceutical companies respond through their environmental costs, performance, and disclosures, ultimately impacting firm value. This research aims to examine the effects of environmental costs, environmental performance, and environmental disclosure on firm value, with profitability acting as a moderating variable. The study focuses on pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2023. The methodology employed is moderation regression analysis, utilizing secondary data gathered from annual and sustainability reports. The findings indicate that environmental costs negatively affect firm value, suggesting that high expenditures on environmental initiatives may lead to unfavorable perceptions among investors. Furthermore, environmental performance and disclosure do not have a significant effect on firm value. Interestingly, profitability strengthens the effect of environmental costs on firm value, suggesting that firms with high levels of profitability can manage environmental costs more effectively to increase value. In contrast, Profitability does not influence environmental disclosure, indicating that transparency in disclosure alone is inadequate to enhance firm value without the backing of profitability. The implications of this study underscore the importance for pharmaceutical companies to consider environmental issues in their business strategies. Effective management of environmental costs and increased profitability can be key to increasing shareholder value. This study provides insights for management of pharmaceutical companies in integrating environmental considerations into strategic decision making. By understanding the interactions between environmental costs, performance, disclosure and profitability, pharmaceutical companies can better navigate the complexities of sustainable business practices. This research highlights the need for a holistic approach to environmental management to ensure that environmental initiatives are not only implemented, but also aligned with the financial health and overall strategic goals of the organization.

Keywords: *envionmental cost, environmental performance, environmental disclosure, firm value, profitability*

INTRODUCTION

Attention to environmental issues is increasing in the business world. Every company in carrying out its operations has clear and directed goals to maintain its business continuity. The challenges faced are not only limited to efforts to maximize financial performance and achieve economic benefits, but also include increasingly pressing environmental issues (UY & Hendrawati, 2020), including in the pharmaceutical sector. Along with regulatory demands and public awareness, the pharmaceutical industry needs to manage environmental impacts due to the production of chemicals and hazardous waste that can pollute water, soil and air. Therefore, pharmaceutical companies must adopt sustainable practices to reduce the negative impacts of their operations. Actions that can be taken by companies to minimize negative impacts on the environment can be measured through several indicators, including Environmental Cost,

Environmental Performance, and Environmental Disclosure. These three factors are increasingly important in assessing the company's worth from the perspective of investors and other stakeholders (Saka & Oshika, 2014). In the pharmaceutical sector, companies are faced with the challenge of balancing environmental responsibility and profitability. Efficient management of environmental costs, improved environmental performance, and transparency in disclosing sustainability-related information can affect investor perceptions and company value in the financial market.

The worth of a company is an important subject for study, as it reflects the company's performance and can impact how investors perceive it (Parta & Sedana, 2018). A higher company value boosts investor trust (Suwardika & Mustanda, 2017). As investors increasingly consider environmental factors in their investment decisions, companies with strong environmental performance and transparency tend to be valued more highly. Research on firm value as a dependent variable helps clarify the role of environmental factors in shaping investor perceptions and investment decisions (Saka & Oshika, 2014). Additionally, efficient environmental management can reduce legal and reputational risks, thus enhancing the stability of company value (Soliman, 2017).

Environmental costs refer to the expenses that a company incurs as a result of inadequate environmental management stemming from its operational activities that generate waste (Pasaribu et al., 2023). Naturally, the greater the amount of waste produced by a firm, the greater the expenses it will encounter. Investors will likely interpret the level of environmental costs as a sign of the firm's commitment to environmental issues. The calculation of environmental costs is established by dividing the overall environmental expenditures by the firm's net profit. Yuliana (2019) found that while managing environmental costs may negatively impact short-term profitability, it can lead to positive long-term effects if accompanied by improved environmental performance. This implies that investments in environmental management, though initially expensive, can enhance operational efficiency and firm value. Therefore, a clear understanding of environmental costs is crucial to ensure that such investments yield optimal benefits for the company over time.

Environmental performance refers to the outcomes of a company's efforts to minimize the negative effects of its production processes on the environment. Research by Soliman (2017) shows that effective environmental performance can boost firm value, especially in industries with stringent regulations, such as pharmaceuticals. Firms that manage to lessen harmful environmental impacts, such as emissions or hazardous waste, demonstrate a strong commitment to social responsibility, which attracts investor interest. Therefore, improving environmental performance is beneficial not just for the environment but also for enhancing a company's reputation and value in the marketplace.

Environmental disclosure is the release of information concerning environmental effects and corporation sustainability initiatives. Wang et al. (2020) found that transparency in environmental disclosure can strengthen the relationship between such disclosure and firm value. Investors increasingly pay attention to environmental information in making investment decisions, and companies that are transparent about environmental performance tend to have higher market value (Saka & Oshika, 2014). Research on environmental disclosure is important to understand how this transparency contributes to positive investor perceptions.

Profitability serves as a moderating variable that may influence the relationship between environmental factors and firm value. Pharmaceutical companies with high profitability are generally better equipped to allocate resources toward environmental initiatives without compromising their financial performance (Wang et al., 2020). Conversely, companies with low profitability may struggle to balance environmental costs with their financial outcomes. Thus, understanding the role of profitability in this context is essential for identifying strategies that companies can implement to enhance their value to investors. Research on the effects of environmental factors on shareholder value in Indonesia's pharmaceutical sector is still quite limited. This sector possesses unique characteristics, such as strict regulatory pressures regarding its products and waste, which heightens the importance of environmental issues. Consequently, This research intends to tackle this gap by investigating the effect of environmental costs, environmental performance, and environmental disclosure affect the value

of pharmaceutical companies, while also assessing the moderating role of profitability. This research is expected to offer new insights into the significance of environmental management for increasing the value of pharmaceutical companies in Indonesia and how profitability can influence this relationship. The findings can provide a foundation for pharmaceutical management to prioritize sustainability as part of a strategy to enhance shareholder value and attract investors.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Literature Study Subject

According to Maulida et al. (2022), legitimacy theory seeks to develop a corporate strategy that ensures all company activities are accepted by external stakeholders. The company's approach to managing environmental and social aspects is a way to foster a positive image of its responsibility towards these areas. With the release of environmental and social. With the publication of environmental and social activities, it can create good performance for stakeholders, namely investors. So that through the publication of environmental and social activities, the company can gain legitimacy from investors which will also lead to a positive response to management performance and can increase company value.

Currently, the demands on companies are not only oriented towards financial profit, but also include concern for society and the environment, because companies benefit from the use of resources that must be returned to society and the environment (Lindawati & Puspita (2015)). In the pharmaceutical sector, the application of legitimacy theory means that companies must comply with health standards, regulations, and disclose information transparently. These measures are important to strengthen legitimacy in the eyes of the public, which impacts public trust and the value of the company in the market.

Hypothesis Development

The Effect of Environmental Cost on Firm Value

High environmental costs can be detrimental to firm value due to the perception that firms must balance economic profit and social responsibility. Legitimacy theory suggests that companies seek to fulfil social expectations to maintain legitimacy in the eyes of the public and stakeholders. If spending on environmental initiatives, such as pollution control, is perceived as excessive and not delivering short-term value, it may be perceived as a waste of resources and reduce profitability. This negative perception may arise among investors, especially if the benefits of spending are not immediately apparent. Research suggests that greater environmental disclosures may lower firm value as investors perceive these costs as a hindrance to earnings growth. Companies that are heavily involved in environmental issues risk facing higher expectations. Failure to meet those expectations, despite investing in environmental compliance, can reduce public trust and social legitimacy. Scandals or failure to achieve environmental targets can have a more severe impact on previously proactive companies. Cormier & Magnan (2015) note that companies with high environmental disclosure often experience a negative market reaction as the costs are perceived to be disproportionate to the benefits. Du et al. (2017) found that although environmental responsibility disclosure is rewarded in the long run, large expenditures may reduce the market value of the firm in the short run.

H1: Environmental costs have a negative impact on firm value. The Effect of Environmental Performance on Firm Value

According to legitimacy theory, companies continue to try to attract investors' attention by getting a good image. Environmental performance is a benchmark for investors to see the extent of management strategies in managing the environment. Efforts to preserve the environment are certainly more expected by the company than managing waste due to production results. So that by looking at the level of the company's environmental performance, investors will know the company's concern for the environment. Companies with good environmental performance often receive market appreciation, increasing stock value and market capitalization. The

government also provides incentives, such as tax breaks for green initiatives, which can increase financial efficiency and company value. Conformity with environmental regulations decreases the likelihood of penalties that can negatively impact firm value. Studies by Okta et al. (2022), supported by Asrizon et al. (2021), demonstrate that environmental performance positively influences firm value, as it reflects the company's commitment to environmental responsibility.
H2: Environmental performance has a positive effect on firm value.

The Effect of Environmental Disclosure on Firm Value
In the context of legitimacy theory, companies must obtain and maintain social legitimacy by operating according to society's expectations. Environmental disclosure acts as a means to illustrate social and environmental accountability to stakeholders. By providing transparent information about environmental initiatives, companies can increase legitimacy which makes a positive contribution to firm value. It demonstrates concern for social and environmental impacts, which increases investor and consumer confidence and market reputation. Good disclosure protects companies from reputational risk and helps maintain value stability, as well as attracting the attention of investors who focus on Environmental, Social, and Governance (ESG) criteria. Companies that regularly disclose environmental information tend to have better access to capital at lower costs, as financial institutions that focus on green investments are more supportive of companies with strong environmental disclosures, increasing long-term profitability. Plumlee et al. (2015) reveal that clear environmental disclosure enhances expectations for future cash flows and reduces the cost of capital, resulting in an increase in firm value. Cormier & Magnan (2015) find a positive correlation with environmental disclosure and higher stock prices, particularly in industries exposed to environmental risks, such as energy and mining.

H3: Environmental disclosure has a positive effect on firm value.

Profitability Strengthens the Effect of Environmental Costs on Firm Value
In legitimacy theory, firms with high profitability are more capable of sustaining social legitimacy. when facing large environmental costs. They can invest in environmental practices without sacrificing short-term profits. When profitable firms allocate costs to the environment, this move is perceived positively by stakeholders, thus increasing firm value. More profitable companies have more capital for environmental initiatives, making such costs a strategic investment rather than an expense. They can bear costs such as pollution control and carbon emission reduction without a significant drop in profits. Good financial performance also increases stakeholder confidence, demonstrating a concern for social responsibility. This can improve reputation and attract investors who pay attention to Environmental, Social, and Governance (ESG) criteria, and increase company value. High profitability also provides flexibility in dealing with environmental risks, helping companies avoid reputational risk, litigation or fines. Research by Plumlee et al. (2015) indicated that strong profitability lowers the cost of capital, enhancing cash flow projections. Cormier & Magnan (2015) identified that profitable and environmentally committed companies receive an increase in stock value. Hahn et al. (2014) showed that companies with strong environmental commitments gain greater legitimacy, increasing value in the capital market.
H4: Profitability strengthens the effect of environmental costs on firm value.

Profitability Strengthens the Effect of Environmental Disclosure on Firm Value
Environmental disclosure is important for companies to gain and maintain social legitimacy. Profitability enhances the beneficial effect of these disclosures on company value, as more profitable firms have more resources to provide quality information, such as sustainability reports. Good disclosure increases stakeholder trust, including ESG investors, reduces reputational risk, and demonstrates commitment to sustainability. Investors show greater interest in companies that can effectively handle environmental responsibility while maintaining good financial performance. Research by Plumlee et al. (2015) found that the quality of environmental disclosure has a greater impact on profitable companies, as they can cover the

costs of environmental management without sacrificing performance. González-Benito (2015) also emphasized that high profitability makes it easier for companies to use disclosure as a strategy to attract investors and increase share value.

H5: Profitability strengthens the effect of environmental disclosure on firm value.

RESEARCH METHOD

This research employs quantitative research techniques, analyzing numerical data to evaluate the proposed hypotheses. The methodology includes both descriptive analysis and causal analysis. The data utilized is secondary, consisting of annual reports and supplementary sustainability reports sourced from the Indonesia Stock Exchange website at www.idx.co.id and the official websites of each company, amounting to a total of 62 samples.

Environmental Cost

The environmental cost variable is measured by dividing total environmental costs by the company's net profit. This measurement provides an overview of how much proportion of the company's profit is allocated to environmental costs, which can reflect the company's commitment to environmental sustainability. The measurement formula based on the words of Pasaribu, et al.(2023) is as follows:

$$\text{Environmental Cost} = \frac{\text{Total Environmental Cost}}{\text{Net Profit}}$$

Environmental Performance

The environmental performance variable in this research is a dummy variable represented by the attainment of ISO14001 certificates. ISO 14001 is an international standard for environmental management systems that allows organizations to develop and implement policies and objectives related to environmental management systems (ISO 14001, 2015). In this study, the company will be given a value of 1 (one) if the company obtains an ISO 14001 certificate and a value of 0 (zero) if it does not obtain a 14001 certificate. In assessing ISO 14001 certification, usually the validity period is 3 years so that the data obtained in this research period can be the same value for 3 consecutive years.

Environmental Disclosure

Environmental disclosure is the information that companies provide about their environmental activities and performance, usually in sustainability or annual reports. It includes indicators such as carbon emissions, energy use, waste management and other environmental impacts, as per Global Reporting Initiative (GRI) guidelines, such as GRI 301 (Material Use) to GRI 308 (Environmental Assessment of Suppliers). Each indicator is rated as complete (1), partial (0.5), or not disclosed (0). The content analysis method is used to calculate the disclosure score by summing the indicator values and dividing them by the total indicators that should have been disclosed, helping companies assess environmental transparency and accountability. The measurement formula using Michelon et al. (2015) is:

$$\text{Environmental Disclosure Score} = \frac{\sum \text{score of each indicator}}{\text{Total indicators that should be disclosed}}$$

Firm Value

Tobin's Q, a ratio comparing the market value of a company's assets to their replacement cost, is employed to evaluate the company's value, reflecting how effectively a firm uses its assets to create value for its shareholders (Hapsoro et al., 2020):

$$\text{Tobins`Q} = \frac{(\text{MVE} + \text{Liabilities})}{\text{Assets}}$$

Profitability

Profitability reflects a company's ability to generate earnings from its equity. This variable is

assessed using return on equity (ROE), which represents the ratio of net income to shareholders' equity. This indicator offers an understanding of how effectively the company produces profits from the capital contributed by its shareholders.

$$ROE = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

Population, Sample and Sampling Technique

The population for this study consists of pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) during the 2020-2023 period. The sample was chosen using a purposive sampling method, beginning with an initial total of 62 samples. After removing outliers, 55 samples were retained. The selection criteria included: companies that published financial and sustainability reports for the 2020-2023 period, reported CSR or environmental costs, and provided complete data relevant to the variables analyzed in the study.

RESULT

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Environmental_Cost	55	-.129	43204.000	785.58201	525.618656
Environmental_Disclosure	55	7.020	48.350	23.01909	11.011701
Nilai_Perusahaan	55	.340	8.040	2.29473	1.351120
Profit	55	-.285	.315	.08376	.106498
EC_P	55	.000	.023	.00224	.004338
ED_P	55	-13.780	7.128	1.47870	2.901110
Valid N (listwise)	55				

Source: secondary data processed, 2024

The findings from the descriptive statistical analyses in Table 1. reveal that Environmental Cost has a mean of 785.58 and a standard deviation of 525.62, indicating substantial variability in environmental costs among companies. Environmental Disclosure exhibits an average of 23.02 with a standard deviation of 11.01, underscoring differences in the degree of environmental disclosure. Firm Value has a mean of 2.29 and a standard deviation of 1.35, reflecting significant variation in firm value. The average firm profitability is 0.084 with a standard deviation of 0.106, indicating a relatively low profitability level within the pharmaceutical industry. The moderating variables EC_P and ED_P exhibit low averages, suggesting a limited moderating influence on the relationship between environmental costs and disclosures concerning firm value. Additionally, the classical assumptions are outlined in Tables 2 and 3 below.

Table 2. Heteroscedasticity Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.801	.269		2.982	.004
	Environmental_Cost	-1.720E-5	.000	-.170	-1.194	.238
	Environmental_Performance	-.074	.179	-.062	-.415	.680
	Environmental_Disclosure	-.003	.009	-.055	-.327	.745
	Profit	.284	1.892	.051	.150	.881
	EC_P	12.080	19.572	.089	.617	.540
	ED_P	.008	.064	.038	.120	.905

Source: secondary data processed, 2024

The heteroscedasticity test results in Table 2 show that there is no heteroscedasticity problem in the regression model, because all variable significance values (Sig.) > 0.05. Environmental Cost has Sig. 0.238, Environmental Performance 0.680, Environmental Disclosure 0.745, Profit 0.881, and moderation EC_P and ED_P 0.540 and 0.905 respectively. Thus, the assumption of homoscedasticity is met, so the regression model is valid.

The outcomes of the multicollinearity test in Table 3 reveal that there are no significant multicollinearity concerns, as the Tolerance values exceed 0.1 (ranging from 0.167 to 0.966) and the VIF values are under 10, with the highest being 2.971 for the Profit variable. Thus, the regression model is appropriate for further examination. According to these results, it can be concluded that there is no multicollinearity concern in the regression model, indicating that the independent variables do not significantly affect one another, allowing the model to be used in subsequent analyses, such as the Model Fit test.

Table 3. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Environmental_Cost	.966	1.036
Environmental_Performance	.881	1.135
Environmental_Disclosure	.688	1.454
Profit	.167	2.971
EC_P	.943	1.060
ED_P	.197	2.087

Source: secondary data processed, 2024

The findings from the descriptive statistical tests in Table 1 show that Environmental Cost has an average of 785.58 and a standard deviation of 525.62, indicating considerable variability in environmental costs among firms. Environmental Disclosure presents an average of 23.02 with a standard deviation of 11.01, highlighting variations in the extent of environmental disclosure. Firm Value has an average of 2.29 and a standard deviation of 1.35, signifying notable variation in firm value. The results of the Model Fit test are detailed in Tables 4 and 5.

Table 4.
Koefisien Determinan (R Square)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.480	.439	1.012320

Predictors: (Constant), Profit, Environmental_Cost, Environmental_Performance, Environmental_Disclosure
b. Dependent Variable: Firm_Value Source: secondary data processed, 2024

le 5. F Test ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.339	4	11.835	11.548	.000[b]
	Residual	51.240	50	1.025		
	Total	98.578	54			

Dependent Variable: Nilai_Perusahaan
b. Predictors: (Constant), Profit, Environmental_Cost, Environmental_Performance, Environmental_Disclosure

The analysis results in Table 4 show an R value of 0.693, indicating a strong relationship between the independent variables and firm value. The R Square value of 0.480 means that 48% of the variation in firm value is explained by the model, while 52% is influenced by other factors. The ANOVA test in Table 5 with an F value of 11,548 and a significance of 0.000 indicates that the regression model is significant. In conclusion, the variables studied have a significant impact on the value of pharmaceutical companies on the IDX for the 2020-2023 period. The next hypothesis test results appear in table 6 and table 7 below.

Tabel 6. Hypothesis Test

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	1.896	.404		4.693	.000
Environmental_Cost	.000	.000	.620	6.003	.000
Environmental_Performance	-.047	.295	-.017	-.160	.874
Environmental_Disclosure	-.004	.014	-.029	-.254	.800
Profit	4.614	1.451	.364	3.179	.003

a. Dependent Variable: Nilai_Perusahaan

Source: secondary data processed, 2024

Table 6 shows that Environmental Cost has a positive and significant effect (0.000) and t of (6.003) on Firm Value (**H1 accepted**). In contrast, Environmental Performance has a sig. 0.874 and t of -0.160 indicates (**H2 rejected**). Environmental Disclosure with sig. 0.800 and t of -0.254 shows no effect on firm value (**H3 rejected**).

The results of the hypothesis test in Table 7 from the moderated regression analysis suggest that profitability enhances the connection between environmental performance (EP) and firm value. The interaction coefficient between environmental cost and profitability (EC_P) is 2.722, with a significance level of 0.044, suggesting that this finding is statistically significant. This implies that profitability enhances the effect of environmental cost on firm value (**H4 is accepted**). Conversely, in relation to the connection between environmental disclosure (ED) and firm value, the results reveal that the interaction coefficient between environmental disclosure and profitability (ED_P) is -0.068, with a significance level of0.533. This indicates that the moderating effect of profitability on the relationship between environmental disclosure and firm value is not statistically significant (**H5 is rejected**).

Tabel 7.
Moderate Regression Analysis (MRA) Test

Unstandardized Coefficients Standardized Coefficients

Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	1.688	.452		3.737	.000
Environmental_Cost	.000	.000	.631	6.039	.000
Environmental_Performance	-.092	.301	-.033	-.304	.762
Environmental_Disclosure	.001	.015	.011	.090	.928
Profit	1.361	3.184	.201	2.238	.049
EC_P	2.722	2.934	.289	2.842	.044
ED_P	-.068	.108	-.145	-.628	.533

a. Dependent Variable: Nilai_Perusahaan

Source: secondary data processed, 2024

DISCUSSION

The Effect of Environmental Cost on Firm Value

Hypothesis 1 shows that environmental costs have a negative effect on firm value.This happens because companies must operate in accordance with social norms to maintain legitimacy, which is an important asset for business sustainability.Investors tend to see environmental costs as a burden that can reduce short-term profitability, especially in the pharmaceutical sector which relies on research and development. Costs for waste treatment, emissions reduction, and green technologies can be seen as diverting resources from more productive innovations. If spending on environmental initiatives is not seen to deliver significant returns or enhance reputation, then investors may perceive it as inefficient spending. The pressure to produce new products quickly means that pharmaceutical companies may sacrifice R&D to meet the demands of environmental costs, which could further reduce the worth of the firm from the perspective of investors. Consequently, even when a company allocates significant resources to environmental costs, this may not have a substantial impact on its legitimacy or firm value. Organizations that invest heavily in environmental projects might forfeit chances to increase their R&D investments, potentially harming their perceived value among investors. Therefore, while pharmaceutical companies may incur large environmental expenses, these costs might not be enough to enhance their public image or legitimacy to the extent that they improve firm value. The results of this study are consistent with research by Astiari et al. (2014), Setyawan & Widagdo (2020), and Soliman & Ragab (2014), but differ from the findings of Ramona (2017). Environmental costs are typically viewed as additional expenses; as these costs rise, they can diminish the company's profits. Moreover, environmental spending during a specific period may not provide immediate benefits within that same a long time.

Effect of Environmental Performance on Firm Value

The results of hypothesis 2 show that environmental performance has no effect on firm value. Companies need to gain public legitimacy to operate sustainably. The lack of impact of environmental performance measured through ISO 14001 standards on firm value in the pharmaceutical sector is due to the lack of pressure from stakeholders related to environmental issues, when compared to the energy or mining sectors. In the pharmaceutical sector, the public and investors highlight financial performance, product innovation and availability of medicines more than environmental management. While ISO 14001 is a common environmental management standard, in the pharmaceutical context, it is less relevant as a factor affecting company value. Investors focus more on aspects such as drug safety and health regulations, so environmental performance is considered less significant. Even if companies have such certifications, concrete actions in environmental conservation may not be considered meaningful enough by the public and investors, which creates symbolic legitimacy.

The pharmaceutical sector focuses more on strategic issues such as product innovation, patents, drug regulation, and production efficiency. In this context, investors may be more

concerned with the company's success in dealing with these issues than environmental performance. Even though the company has implemented the ISO14001 standard, this is not considered important enough in determining the value of the company by the market or investors. Research by Michelon, Pilonato & Ricceri (2015) shows that the quality of CSR disclosure, including environmental performance, is not always associated with increased firm value, especially in sectors where social aspects are more relevant than environmental aspects. Yusoff & Darus (2014) support the view that companies use environmental disclosure as a legitimization strategy, but its impact on firm value may vary. The results of this study are also in line with Anjasari & Andriati (2016) and Sawitri (2017). However, these results are not in line with Camilia's (2016) research that company performance becomes an inseparable unity with environmental performance, causing environmental performance not to affect firm value (Sawitri, 2017). Therefore, investor decision making does not only focus on the company's environmental performance.

Effect of Environmental Disclosure on Firm Value

The outcomes of hypothesis 3 suggest that Environmental Disclosure has no significant effect on firm value. Companies should foster their relationships with society and strive to meet social expectations to achieve legitimacy. In this context, if environmental disclosure does not influence firm value, it may be due to a perception gap between the company and its stakeholders (such as investors, consumers, or regulators). That is, even though companies make environmental disclosures, stakeholders do not consider it a major factor in valuing pharmaceutical companies. The pharmaceutical sector tends to get more attention because of medical innovation, drug research, and compliance with health regulations. Environmental issues may be considered less relevant to investors in this sector than other sectors such as energy or manufacturing, where environmental impacts are more obvious. Environmental disclosures, while good for corporate image, may not be considered important in increasing the market value of pharmaceutical companies. As such, disclosure may be seen as a formality with no real impact on firm value.

The pharmaceutical industry often prioritizes strict medical regulations over environmental concerns. Even when disclosures are made, investors may not perceive a significant impact on the long-term risks related to environmental issues, leaving the company's value unchanged. This study's findings align with the research by Toti & Johan (2022), which indicated that while environmental practices entail high short-term costs, financial sustainability actions will have significant long-term implications. Similarly, Husada & Handayani (2021) found that the costs linked to environmental disclosures are higher than those for disclosures in other areas, suggesting that information from different aspects may partially reduce the impact of environmental data on company value. While corporate governance can impact sustainability disclosures, it does not always directly influence the company's market performance. This outcome contrasts with Kurniawan et al. (2018), who suggested that environmental disclosures negatively impact firm value. In contrast, Abdi et al. (2022) indicate a favorable connection between environmental disclosures and company value. The environmental data released by the firm helps stakeholders in analyzing and appraising the effect of the company's business activities on the environment.

Profitability Strengthens the Effect of Environmental Cost on Firm Value

The results of hypothesis 4 show that profitability strengthens the effect of environmental costs on firm value. Investors and stakeholders tend to value companies that can manage environmental responsibilities without sacrificing financial performance. With good profitability, the company demonstrates its ability to run efficient operations while meeting social and environmental demands. In the highly regulated pharmaceutical sector, companies that successfully balance environmental costs with profitability further enhance legitimacy and trust from the public and investors. Strong profitability indicates that the company is able to adapt to social and regulatory pressures without losing competitiveness, thus attracting the attention of investors who care about ESG (Environmental, Social, and Governance) principles.

Thus, companies that can maintain financial performance while prioritizing environmental responsibility are considered more credible and sustainable.

The level of profitability is thought to influence the relationship between environmental performance and firm value (Osazua & Che-Ahmad, 2016). Companies that have a high level of profitability indicate that shareholder wealth is getting better and the company's prospects are considered more promising. So that these conditions will be a positive signal that can attract investor interest. Companies with good profitability can adopt proactive environmental strategies that ultimately increase firm value. High profitability allows companies to more effectively manage environmental costs. More profitable companies tend to have more resources for investment in environmentally friendly practices, which can improve the company's reputation and attract more investors, thereby increasing the company's value. Mawaddah Ulfa et al. (2022) support these findings, that environmental costs have a positive influence on firm value through profitability as an intervening variable in coal sub-sector mining companies.

Profitability Strengthens the Effect of Environmental Disclosure on Firm Value

The results of hypothesis 5 show that Profitability does not enhance the influence of Environmental Disclosure (ED_P) on company value. Environmental disclosure is commonly performed to achieve social legitimacy. However, if it fails to positively impact firm value, even with strong profitability, this may suggest that the disclosure is merely symbolic and regarded as insignificant by investors. In the pharmaceutical sector, investors focus more on medical innovation, patent ownership and financial performance than environmental disclosure. High profitability is not enough to strengthen the influence of environmental disclosure if the company does not demonstrate a real commitment to sustainability. Legitimacy theory explains that symbolic disclosures do not build strong legitimacy in the eyes of investors, especially when the pharmaceutical sector is expected to demonstrate innovation and social responsibility towards public health. This is in contrast to the energy or mining sectors, where environmental disclosures are given more attention. Cho & Patten (2007) note that environmental disclosure is often used for legitimization, but these findings suggest that investors do not always respond positively, especially when profitability does not support disclosure. In addition, Michelon & Parbonetti (2012) show that corporate governance influences sustainability disclosure, but does not necessarily have a direct effect on firm value in a particular sector.

CONCLUSION, LIMITATION, SUGGESTION

Conclusion

According to data analysis presented in the previous discussion, the following are the key conclusions of this study: (1) The Effect of Environmental Costs on Firm Value. The findings from Hypothesis 1 indicates that environmental expenses have a positive and substantial effect on company value. This implies that firms that allocate more resources to environmental initiatives are likely to achieve greater company value, possibly due to enhanced reputation and increased investor confidence in environmentally responsible firms. (2) Environmental Performance does not Affect Firm Value. Environmental performance, assessed through ISO14001 certification, shows no significant impact on firm value. This implies that while environmental certification is important, it may not be a strong enough factor to directly influence firm value without support from other variables. (3) Environmental disclosure has no effect on company value. The ESG score, used to measure environmental disclosure, also shows no significant influence on firm value. This may be due to variations in the quality and quantity of information shared by companies, as well as how investors perceive that information. (4) Profitability Strengthens the Impact of Environmental Costs on Firm Value. Profitability, assessed through Return on Equity (ROE), exhibits a significant moderating effect on the relationship between environmental costs and company value. (5) Profitability does not strengthen the effect of environmental disclosure on company value. This suggests that environmental disclosure has not been integrated into the core business strategy, or that investors may focus on other factors considered more important for enhancing firm value.

Limitations

Some limitations of this study are:This study has several limitations: (1) The use of ISO14001 certification as an indicator of environmental performance may not cover all important aspects such as energy efficiency, greenhouse gas emissions, or waste management, thus limiting the understanding of environmental performance that can affect firm value. (2) The measurement of environmental disclosure based on Environmental scores may not be consistent across companies, so variations in information quality and transparency may affect investor perceptions and research results. (3) The findings cannot be generalized to other sectors such as energy or manufacturing that are more affected by environmental issues. (4) More appropriate profitability measures, such as Net Profit Margin, might offer a broader view of a firm's financial performance. (5) The short observation period (only three years) may not be sufficient to capture changes in environmental regulations and increased investor awareness of sustainability issues. (6) The sample size is limited because not all pharmaceutical companies publish sustainability reports related to environmental aspects.

Suggestions

(1) Future research should use other environmental performance indicators, such as carbon emissions and energy consumption, to gain a broader understanding.(2) Studies in other sectors, such as energy and manufacturing, are needed to improve the generalizability of the results.(3) The use of other profitability measures, such as ROA and Net Profit Margin, can deepen the moderation analysis of profitability.(4) A longer research period is recommended to capture the long term impact of environmental costs and performance.(5) Pharmaceutical companies need to improve cost allocation and transparency regarding environmental activities, as this may improve reputation and attract more investors.

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