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THE EFFECT OF GREEN ACCOUNTING, ENVIRONMENTAL PERFORMANCE AND ENVIRONMENTAL COSTS ON FINANCIAL PERFORMANCE WITH CSR DISCLOSURE AS MODERATION

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Abstract

This study aims to analyze the influence of *green accounting* , environmental performance, and environmental costs on financial performance with *Corporate Social Responsibility* (CSR) disclosure as a moderating variable in consumer goods manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. The study uses a quantitative approach with a causal research type. The data used are secondary data obtained from annual reports and company sustainability reports. The study population includes 40 companies, with a sample of 26 companies determined through a purposive sampling technique, resulting in 104 panel data observations. Data analysis was performed using panel data regression with the help of EViews software, through the stages of descriptive statistics, classical assumption tests, regression model selection, and hypothesis testing. Based on the results of the study, *green accounting* and environmental performance have a positive but insignificant effect on financial performance, while environmental costs have a positive and significant effect. In the moderating role, CSR disclosure is unable to strengthen the effect of *green accounting* , but it is able to strengthen the effect of environmental performance, and weaken the effect of environmental costs on financial performance. These findings indicate that the role of CSR is contextual in moderating the relationship between variables.

Keywords : Green Accounting , Environmental Performance, Environmental Costs, CSR, Financial Performance.

1. Background

In an era of global competition and dynamic economic transformation, financial performance is a fundamental aspect determining a company's survival and competitiveness. Financial performance not only reflects a company's ability to generate profits but also illustrates the effectiveness of management in managing its resources to create economic value for stakeholders. According to Fahmi (2013), financial performance reflects the results of managerial decision-making processes carried out to achieve organizational goals, particularly in terms of efficiency and profitability. This is also in line with research by Fatmaningtyas and Setiawati (2024), which states that financial performance is one of the main indicators of a company's success in managing its resources to achieve profitability and sustainable growth. Financial performance is also a primary consideration for investors in assessing a company's future prospects and stability. Financial performance essentially reflects a company's ability to manage financial resources efficiently and effectively to achieve profitability and business sustainability goals. According to Pulungan et al. (2023), financial performance measurement is conducted to evaluate the extent to which a business entity is able to achieve its stated financial goals through analysis of various indicators such as revenue, net profit, cash flow, assets, debt, and equity. This measurement provides a comprehensive overview of a company's financial condition and serves as a basis for assessing the efficiency and effectiveness of resource management. In the modern business context, financial performance is no longer measured solely by profit achievement but also includes sustainability *and* compliance with corporate social and environmental responsibilities. Financial performance is also a primary consideration for investors in assessing a company's future prospects and stability. One of the most widely used ratios to measure financial performance is *Return on Assets* (ROA). ROA reflects a company's effectiveness in utilizing total assets to generate net profit over a given period (Fahmi, 2013). Research by Preselia et al. (2023) cited ROA as the most objective measure of profitability because it is neutral to differences in a company's capital structure. In the context of this research, the focus is directed at manufacturing companies in the consumer goods sector because this

sector is one of the main pillars of the Indonesian economy, making a significant contribution to the national Gross Domestic Product (GDP). According to data from the Ministry of Industry, the non-oil and gas manufacturing sector remains the largest contributor to GDP, accounting for 16.48%, with consumer goods sub-sectors such as food, beverages, and pharmaceuticals being the main contributors. This condition makes this sector highly relevant to study, particularly in examining the relationship between sustainability practices and financial performance. In the context of this research, the focus is directed at manufacturing companies in the consumer goods sector because this sector is one of the main pillars of the Indonesian economy, making a significant contribution to the national Gross Domestic Product (GDP). According to data from the Ministry of Industry, the non-oil and gas manufacturing sector remains the largest contributor to GDP, accounting for 16.48%, with consumer goods sub-sectors such as food, beverages, and pharmaceuticals being the main contributors. This condition makes this sector highly relevant to study, particularly in examining the relationship between sustainability practices and financial performance. Several studies in the manufacturing sector, conducted by Nelly et al. (2022), Kusuma (2021), and Marhaendra (2021), have focused on the relationship between asset efficiency and profitability but have not considered the influence of external factors such as environmental policies and corporate social responsibility, which can directly impact financial performance.

This creates a significant research gap, particularly in the consumer goods sector, where companies face high pressure to operate in an environmentally friendly manner while maintaining profitability. Meanwhile, research by Yousaf et al. (2022) conducted in South Asia shows that operational efficiency and asset productivity significantly influence financial performance. However, the geographical context and market characteristics differing from those in Indonesia make these results less likely to be fully generalized. Based on these findings, it can be identified that there is still a conceptual and empirical gap in the literature, namely the absence of a comprehensive study that integrates *green accounting* , environmental performance and environmental costs as factors that influence financial performance in consumer goods manufacturing companies in Indonesia. Therefore, this study seeks to fill this gap by examining the extent to which the implementation of sustainability practices can influence the effectiveness of asset use and company profitability, as well as assessing the role of social responsibility disclosure as a moderating variable that strengthens the relationship between sustainability factors and financial performance. An empirical overview of the research variables in consumer goods manufacturing companies listed on the Indonesia Stock Exchange for the 2021–2024 period presents a summary of data related to *green accounting* , environmental performance, environmental costs, financial performance (ROA), and CSR disclosure. The data demonstrates variations between companies, which underlie the research phenomenon, as shown in the following table.

Table 1. Summary Table of Phenomena

Variables	Indicator	Data Value Range	Visible Trends	Phenomenon
Financial performance	ROA (%)	-2% – 12%	Most companies have positive ROA, but there are some years with very low or even negative ROA.	The financial performance of companies in the consumer goods sector is relatively fluctuating, although some companies show quite good profitability.
Green Accounting	GA (%)	0% – 44%	Many companies have very low GA scores (0%), but there are several companies with quite high disclosure.	The implementation of green accounting is not evenly distributed among companies.
Environmental Performance	PROPER	0 – 2	Most of the companies are at low value	Shows that the company's environmental performance is still limited or not optimal
Environmental Costs	Environmental cost ratio	0.00 – 32.56	Most companies have very small environmental costs, but some have very high values.	There is an imbalance in the allocation of environmental costs between companies.
CSR Disclosure	CSR Disclosure (%)	0% – 19%	Many companies have moderate to high levels of CSR disclosure.	CSR is relatively more consistent than GA

Source: PROPER and BEI (2024).

Based on the above table, an inconsistency is evident between financial performance and environmental and social variables such as *green accounting* , environmental performance (PROPER), environmental costs, and CSR *disclosure* . Some companies with high financial performance actually have low green accounting scores and low environmental costs, while companies with high environmental commitments do not necessarily demonstrate good profitability. This indicates that high financial performance does not always translate to good environmental or social performance, and vice versa. This phenomenon indicates that the relationship between variables is not yet fully consistent. Therefore, moderating variables such as CSR disclosure are needed to bridge and strengthen the influence of environmental variables on financial performance. Through CSR, companies can gain public legitimacy and *stakeholder trust* , allowing the positive impacts of environmental and social activities to be more fully reflected in increased profitability.

2. Theory and Hypothesis

2.1 The Influence of *Green Accounting* on Financial Performance in Manufacturing Companies in the Consumer Goods Sector

Green accounting, as a form of innovation in modern accounting systems, has become a focus of attention in environmental accounting literature. This concept emerged from growing global awareness of sustainability issues, particularly following the emergence of various environmental crises caused by industrial activity. *Green accounting* integrates the dimensions of environmental costs, environmental benefits, and sustainability activities into financial reports, thus providing more comprehensive information than conventional accounting. *stakeholder* theory , *green accounting* demonstrates corporate accountability to various stakeholders, including not only shareholders but also the government, consumers, NGOs, and the wider community. This transparency reduces information asymmetry, strengthens legitimacy, and increases market confidence. From a practical perspective, the implementation of *green accounting* also contributes to long-term cost efficiency because companies are encouraged to reduce energy waste, recycle, and minimize waste. This ultimately increases corporate profitability, as reflected in *Return on Assets* (ROA). Therefore, green accounting has a positive relationship with financial performance. Empirical findings indicate that *green accounting practices* , as measured by *the Global Reporting Initiative* (GRI) standards, have a positive and significant impact on the financial performance of manufacturing companies in Indonesia (Lestari et al., 2024; Putri & Aminah, 2024). Furthermore, several studies confirm that the implementation of *green accounting* provides added value to companies through better environmental risk management and increased investor confidence (Thornton, 2013; Mubarokah, 2024; Pratiwi et al., 2025). Furthermore, empirical evidence indicates that environmental performance acts as a mediating variable that strengthens the relationship between *green accounting* and financial performance, particularly in driving increased company profitability (Pramiana et al., 2024; Wulan et al., 2025). Therefore, it can be formulated that the higher the implementation of *green accounting* , the better the company's financial performance. Thus, the proposed hypothesis is:

H1: *Green Accounting* has a significant positive effect on financial performance.

2.2 The Influence of Environmental Performance on Financial Performance in Manufacturing Companies in the Consumer Goods Sector

Environmental performance reflects a company's success in reducing the negative impacts of its operational activities on the ecosystem. In Indonesia, a credible measure of environmental performance is PROPER, an evaluation program developed by the Ministry of Environment and Forestry with a color-coded rating system (gold, green, blue, red, and black). The PROPER rating not only measures regulatory compliance but also assesses the extent to which a company innovates *beyond compliance* , such as through energy efficiency programs, water conservation, and waste management. From a Signaling Theory perspective, good environmental performance serves as a positive signal to stakeholders. Investors will perceive companies with a good PROPER rating as responsible, low-risk, and long-term-oriented entities. This can improve the company's image, consumer loyalty, and market confidence, which in turn positively impacts financial performance.

Empirical findings indicate that good environmental performance has a positive and significant impact on a company's financial performance (Putri & Aminah, 2024; Al Ayubbi et al., 2024; Ahadiya, 2024). Furthermore, other studies confirm that companies with superior environmental performance tend to achieve higher market appreciation, reflected in increased market value and profitability (Clarkson et al., 2011). Other studies in Indonesia also provide consistent evidence that companies with higher PROPER ratings tend to have better financial performance compared to companies with lower ratings (Haryanto, 2019; Setiawan et al., 2021; Sinaga et al., 2025). This fact strengthens the assumption that environmental compliance is not merely a legal obligation but also a profitable business strategy. Therefore, the proposed hypothesis is:

H2: Environmental performance has a positive effect on financial performance.

2.3 The Influence of Environmental Costs on Financial Performance in Manufacturing Companies in the Consumer Goods Sector

Environmental costs encompass all expenses related to pollution prevention, waste management, emission control, and environmental recovery from operational impacts. In the short term, these costs are often perceived as an additional burden that can reduce a company's profits. However, from a *stakeholder theory perspective* , environmental costs are viewed as a form of corporate accountability to meet the demands of society, regulators, and investors for sustainable business practices. Planned environmental expenditures can improve long-term efficiency, reduce the risk of litigation or fines, and improve the company's image in the eyes of stakeholders. Environmental costs are not merely viewed as an expense but as a strategic investment. Therefore, environmental costs have a positive relationship with financial performance.

Empirical findings indicate that environmental costs have a positive and significant impact on financial performance, particularly *Return on Assets* (ROA), as these expenditures play a role in reducing potential losses due to environmental damage and encouraging long-term productivity increases (Tirtayasa, 2024; Fakdawer, 2024). Furthermore, several studies confirm that transparent disclosure of environmental costs in sustainability reports elicits a positive response from investors, thereby contributing to increased company value (Al-Mawali, 2021; Putri & Aminah, 2024; Ladyve et al., 2025). Furthermore, other empirical evidence also shows that environmental costs generally have a positive impact on a company's financial performance (Al Daffa et al., 2024; Nurfadila D.; Septiawati et al.). This phenomenon suggests that appropriate environmental cost spending actually strengthens profitability. Therefore, the third hypothesis proposed is:
H3: Environmental costs have a significant positive effect on financial performance.

2.4 CSR Disclosure Moderates the Effect of *Green Accounting* on Financial Performance in Manufacturing Companies in the Consumer Goods Sector.

The implementation of *green accounting* demonstrates a company's commitment to integrating environmental information into its financial reports, thus reflecting transparency and responsibility for sustainability. However, the benefits of green accounting on financial performance will be even more evident if companies actively communicate these practices through corporate social responsibility (CSR) disclosures. *Stakeholder theory* states that companies have a moral obligation to meet stakeholder expectations, and one way to achieve this is through comprehensive CSR disclosures. The more extensive the CSR disclosures, the greater the public trust in sustainability reports and the added value generated from green accounting implementation. Empirical findings indicate that CSR disclosure based on *Global Reporting Initiative* (GRI) standards plays a role in strengthening the positive influence of green accounting on financial performance, primarily by increasing stakeholder trust in the credibility of corporate environmental reporting (Tirtayasa, 2023; Putri & Aminah, 2024). Furthermore, several studies confirm that CSR *disclosure* functions as an external communication mechanism that bridges green accounting reporting practices with increased corporate profitability (Auliyah et al., 2024; Dhar et al., 2021). Therefore, the higher the level of CSR disclosure, the stronger the positive influence of green accounting on financial performance. Therefore, the following hypotheses can be proposed:
H4: CSR disclosure moderates the effect of *green accounting* on financial performance.

2.5. CSR Disclosure Moderates the Effect of Environmental Performance on Financial Performance in Manufacturing Companies in the Consumer Goods Sector.

Environmental performance reflects the extent to which a company successfully manages the impact of its operations on the environment, including resource efficiency, waste control, and regulatory compliance. Freeman (1984) reinforces this statement through *Stakeholder Theory* , which explains the relationship between environmental performance and financial performance. This theory asserts that a company's success in managing the environment is a form of responsibility to all stakeholders, not just shareholders. This disclosure helps strengthen the public perception that companies are not only oriented towards economic profit but also responsible for ecological sustainability. Empirical findings indicate that high environmental performance tends to positively impact financial performance when accompanied by information transparency through CSR disclosure (Clarkson et al., 2011; Setiawan et al., 2021). Conversely, other evidence suggests that companies with high PROPER ratings but not adequate CSR reporting do not necessarily achieve significant increases in profitability (Angelina & Nursasi, 2021). This evidence demonstrates that transparency through CSR disclosure strengthens stakeholder trust and mediates the

relationship between environmental responsibility and financial performance. Therefore, the following hypotheses can be proposed:
H5: CSR disclosure moderates the influence of environmental performance on financial performance.

2.6 CSR Disclosure Moderates the Effect of Environmental Costs on Financial Performance in Manufacturing Companies in the Consumer Goods Sector

Environmental costs incurred by companies are often viewed as an additional burden that can reduce short-term profits. However, based on Legitimacy Theory, these expenses will positively impact financial performance if disclosed openly through CSR reports. Transparency in reporting environmental costs signals a company's commitment to being accountable for the ecological impacts of its production activities, thereby strengthening social legitimacy and public trust. Empirical findings indicate that CSR disclosure plays a role in shaping public perception of environmental costs, shifting them from being viewed as a burden to a strategic investment that can strengthen a company's reputation (Buana & Nuzula, 2017; Firmansyah, 2020; Tirtayasa, 2023; Ladyve et al., 2025). Furthermore, transparency in reporting environmental costs has been reported to encourage companies to allocate expenditures more efficiently and orientate towards long-term sustainability (Buana & Nuzula, 2017). Companies with high levels of CSR disclosure have more stable return on assets (ROA) ratios because they are able to manage environmental costs transparently and productively (Chang, 2015). Therefore, CSR disclosure is expected to strengthen the positive influence of environmental costs on financial performance, making it not merely an operational expense but an investment in long-term legitimacy and reputation. Therefore, the following hypotheses can be proposed:
H6: CSR disclosure moderates the effect of environmental costs on financial performance.

3. Method

This research is a causality study using an associative approach. The population in this study includes all 40 consumer goods manufacturing companies listed on the Indonesia Stock Exchange (IDX). The sample was determined using a *purposive sampling technique* , which selects samples based on specific criteria tailored to the research objectives. This resulted in 26 companies with a total of 104 observations (panel data) over four years. Operational definitions of the variables are shown in the following table.

Table 2. Operational Definitions of Variables

Variables	Conceptual Definition	Indicator	Scale
Financial Performance (Y)	The company's ability to generate profits and manage resources efficiently to achieve business goals.	*Return on Assets (ROA)*	Ratio Scale
Green Accounting (X_1)	An accounting system that expands the conventional accounting framework by incorporating environmental factors into the calculation of a company's costs and performance. It focuses on how economic activities affect the environment and how these environmental impacts are measured, recorded, and reported in financial statements and sustainability reports.	Environmental Disclosure (*Environmental Standards*) refers to GRI 300	Ratio Scale
Environmental Performance (X_2)	The level of success of companies in managing environmental impacts resulting from their operational activities is assessed through the PROPER program by the Ministry of Environment and Forestry.	PROPER Rating (Gold, Green, Blue, Red, Black)	Interval Scale (code 1–5)
Environmental Costs (X_3)	All company expenditures to reduce, prevent, or correct negative impacts on the environment resulting from operational activities.	Total environmental costs (waste management, training, energy conservation, environmental audits) - Percentage of environmental costs to total revenue/operating costs	Ratio Scale
CSR Disclosure (Z)	Corporate social and environmental responsibility is disclosed voluntarily or mandatorily through annual reports or sustainability reports.	CSR Disclosure Index based on GRI Standards (environmental items, labor, products, society, etc.)	Ratio Scale

Data analysis was carried out using panel data regression with the help of EViews software, through the stages of descriptive statistics, classical assumption testing, regression model selection, and hypothesis testing.

4. Results and Discussion

4.1 Results

4.1.1 Regression Model Selection

Three techniques are offered for estimating model parameters with panel data: Common Effects Models , Fixed Effects Models , and Random Effects Models . Three tests are then conducted to select the panel data estimation technique: the *Chow test, the Hausman test* , and the *Lagrange multiplier test* . The following are the results of the model selection tests.

Table 3. *Chow Test*

Effects Test	Statistics	df	Prob.
Cross-section F	1.379428	(25.71)	**0.1471**

Source: Eviews Data Processing , 2025.

The test results show a *Cross-section* F Prob. value of 0.1471, which is greater than the 5% significance level ($\alpha = 0.05$). In accordance with the decision-making criteria, H_0 is accepted, which means the *Common Effect Model* (CEM) is more appropriate to use than *the Fixed Effect Model* (FEM). Next, *a Lagrange Multiplier test is conducted* to determine the final model selected between REM and CEM .

Table 4. *Lagrange Multiplier Test*

F-statistic	1.618661	Prob. F(2,94)	**0.2036**
Obs*R-squared	3.462473	Chi-Square Prob.(2)	0.1771

Source: Eviews Data Processing , 2025.

The test results show that the *F-Prob. value* of 0.2036 is greater than the 5% significance level ($\alpha = 0.05$). Referring to the decision-making criteria, H_0 is accepted, which states that *the Common Effect Model* (CEM) is better than *the Random Effect Model* (CEM). Therefore, in this case, the final model selected is *the Common Effect Model* (CEM).

selected *Common Effect* Model (CEM) was estimated using the *Generalized Least Squares (EGLS*) approach, which is more *robust* against violations of classical assumptions, particularly heteroscedasticity. Therefore, even if the normality test is not met, the regression model can still be used and interpreted validly as long as other, more crucial assumptions are not violated (William H. Greene, 2018; Gujarati and Porter, 2009). However, in this study, the classical assumption tests, particularly heteroscedasticity, multicollinearity, and autocorrelation, were all met.

4.1.2 *Goodness of Fit Test*

To assess the feasibility of the regression model used in this study, a *goodness of fit test was conducted* , including a simultaneous test (F test), coefficient of determination (R^2), and *adjusted* R^2. The results of the *goodness of fit test* were obtained from *the Common Effect Model* (CEM) estimated using the EGLS (*Generalized Least Squares*) approach, which are presented in the following table.

Table 5. *Goodness of Fit*

	Weighted Statistics		
R-squared	0.457234	Mean dependent var	0.067600
Adjusted R-squared	0.417657	SD dependent var	0.049339
SE of regression	0.032242	Sum squared residual	0.099795
F-statistic	11.55312	Durbin-Watson stat	1.778410
Prob(F-statistic)	0.000000		
	Unweighted Statistics		
R-squared	0.164088	Mean dependent variable	0.049530
Sum squared residual	0.115157	Durbin-Watson stat	1.498293

Source: Eviews Data Processing , 2025.

Based on the panel data regression estimation results, the F-statistic value is 11.553 with a probability (Prob. F-statistic) of 0.000000. This value is smaller than the significance level ($\alpha = 0.05$), so H_0 is rejected and H_a is accepted. This means that the independent variables consisting of *green accounting* , environmental performance, environmental costs, CSR disclosure, and interaction variables simultaneously have a significant effect on financial performance. The coefficient of determination (R^2) value of 0.457234 indicates that 45.72% of the variation in

financial performance can be explained by the variables *green accounting* , environmental performance, environmental costs, CSR disclosure, and moderation interactions in the model. Meanwhile, the remaining 54.28% is explained by other variables outside the research model. The *Adjusted* R^2 value of 0.417657 indicates that after adjusting for the number of independent variables and the number of samples, the model's ability to explain variations in financial performance is 41.77%. This value provides a more accurate picture than R^2. Thus, the regression model has a fairly good ability to explain the dependent variable and is suitable for use in hypothesis testing.

4.1.3. Hypothesis Testing

Based on the results of panel data regression estimation using the Panel EGLS (cross-section weights) method, partial hypothesis testing (t-test) was then conducted to identify the influence of each independent variable and interaction variable on the dependent variable. In this study, hypothesis testing was conducted using a significance level of α = 10%. The use of up to the 10% level is intended to provide broader interpretation space for the research results, especially in capturing the influence of variables that tend to be weak but are still empirically relevant **.**

Table 6. Hypothesis Testing (CEM)

Dependent Variable: Y				
Method: Panel EGLS (Cross-section weights)				
Date: 02/10/26 Time: 12:33				
Sample: 2021 2024				
Periods included: 4				
Cross-sections included: 26				
Total panel (balanced) observations: 104				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.069825	0.025625	2.724875	0.0076
X1C	0.029076	0.032217	0.902522	0.3690
X2C	0.008289	0.007115	1,165,000	0.2469
X3C	0.015131	0.004785	3.162507	0.0021
ZC	0.037193	0.292881	0.126989	0.8992
X1CZ	-0.134248	0.388429	-0.345617	0.7304
X2CZ	0.268561	0.106741	2.515997	0.0135
X3CZ	-0.096125	0.046314	-2.075506	0.0406

Source: Eviews Data Processing , 2025.

Based on the regression estimation results, the panel data regression equation for *the Common Effect Model* (CEM) is:

$$\mathbf{Yit = 0.070 + 0.029X1it + 0.008X2it + 0.015X3it + 0.037Zit - 0.134X1Zit + 0.269X2Zit - 0.096X3Zit}$$

Based on the regression equation, each coefficient can be explained as follows:

1. A constant value of 0.070 indicates that if *green accounting* , environmental performance, and environmental costs are zero, the company's financial performance (ROA) remains at 7%. This reflects the company's basic ability to generate profits even without considering these three variables.
2. *Green accounting* (X1) has a coefficient of 0.029076, indicating a positive relationship with financial performance. However, a significance value of 0.3690 (>0.10) indicates that the effect is insignificant. Therefore, it can be concluded that *green accounting* has a positive but insignificant effect on financial performance.
3. Environmental performance (X2) has a coefficient of 0.008289 with a positive direction, but a significance value of 0.2469 (>0.10) indicates that this variable does not significantly influence financial performance. Thus, improving environmental performance has not been able to provide a meaningful impact.
4. Environmental costs (X3) show a coefficient of 0.015131 with a positive direction and a significance value of 0.0021 (<0.10). This indicates that environmental costs have a positive and significant effect on financial performance. This means that the greater the environmental costs incurred, the greater the tendency for financial performance to improve.
5. The CSR disclosure coefficient (Z) of 0.037 indicates that increasing CSR disclosure tends to improve financial performance, but this effect is not significant.

6. The interaction between green accounting and CSR (X1Z) has a coefficient of -0.134248 with a negative direction and a significance value of 0.7304 (>0.10). This indicates that CSR is unable to moderate *the effect of green accounting* on financial performance. The negative direction indicates a weakening trend, but it is not significant.
7. The interaction between environmental performance and CSR (X2Z) shows a coefficient of 0.268561 with a positive direction and a significance value of 0.0135 (<0.10). This means that CSR can significantly strengthen the influence of environmental performance on financial performance.
8. The interaction between environmental costs and CSR (X3Z) has a coefficient of -0.096125 with a negative direction and a significance value of 0.0406 (<0.10). This indicates that CSR significantly weakens the influence of environmental costs on financial performance.

4.2. Discussion

4.2.1 The Influence of *Green Accounting* on Financial Performance in Manufacturing Companies in the Consumer Goods Sector.

The partial test results indicate that *Green Accounting* has a positive, but not significant, effect on financial performance. Therefore, the hypothesis stating that there is a positive and significant effect *of Green Accounting* on financial performance is rejected. This finding is directionally in line with *stakeholder theory* , which states that integrating environmental aspects into financial reports can increase transparency, social legitimacy, and operational efficiency, which ultimately has the potential to have a positive impact on company profitability (Thornton, 2013; Mubarokah, 2024; Lestari et al., 2024). However, in this study, this effect has not been proven statistically significant, so empirical support for this theory is still limited. Conceptually, these results can be interpreted as a signal that the implementation or disclosure of green accounting practices is beginning to lead to improvements in the quality of corporate environmental management and accountability, although the impact on financial performance is not yet strong. In other words, *green accounting* has the potential to add value, but it has not yet been fully realized in the form of significant improvements in financial performance. The results of this study have not been able to confirm previous empirical findings conducted by Lestari et al., (2024) and Putri & Aminah, (2024) which stated that *green accounting* has a significant positive effect on financial performance. Furthermore, *Green Accounting Practices* can provide added value through better environmental risk management and increased investor confidence, thereby supporting financial performance (Pratiwi et al., 2025; Pramiana et al., 2024; Wulan et al., 2025). However, the results of this study still show differences at the level of significance, indicating that these benefits may not be optimal or not yet felt evenly.

Although the direction of the relationship indicates a positive influence, there are conditions that are not fully supportive, especially in the context of manufacturing companies in Indonesia. The level of environmental disclosure in most companies is still relatively low, averaging only 20–40% (Utami & Rahayu, 2021), and most companies have not disclosed more than half of the GRI 300 indicators (Windi et al., 2025). This indicates that *green accounting* in Indonesia still tends to be administrative and voluntary, so it has not been fully integrated as a strategy capable of optimally improving financial performance, in contrast to practices in developed countries that show a more significant impact on social legitimacy and profitability (Clarkson et al., 2008; Schaltegger & Burritt, 2000). These conditions provide a rational explanation for why this study found that *green accounting* did not significantly impact financial performance. The low level of disclosure and the suboptimal implementation of environmental practices meant that the information presented was insufficient to influence investor perceptions or significantly improve the company's operational efficiency. Consequently, while there was a positive direction, the impact was not significant.

4.2.3 The Influence of Environmental Performance on Financial Performance in Manufacturing Companies in the Consumer Goods Sector.

Partial test results indicate that environmental performance has a positive but insignificant effect on financial performance, thus rejecting the hypothesis that environmental performance has a positive effect on financial performance. Conceptually, signaling theory states that good environmental performance should be a positive signal to *stakeholders* , increasing investor confidence, consumer loyalty, and corporate image (Putri & Aminah, 2024). In other words, companies with high PROPER ratings are expected to demonstrate success in managing operational impacts on the environment and increasing corporate accountability. The results of this study are not in line with the research conducted by Al Ayubbi et al., (2024), Ahadiya, 2024), Setiawan et al., (2021) and Sinaga et al., 2025) which provide consistent evidence that companies with higher PROPER ratings tend to have better financial performance compared to companies with lower ratings . However, the results of this study are in line with previous findings conducted by Syahrini N. Dewi, (2019) which showed that good environmental performance does not

necessarily increase company profitability, especially if environmental practices have not been fully integrated into business strategies and managerial accounting systems. Fluctuations in PROPER scores from year to year are often not followed by significant changes in financial ratios (Haryanto, 2019), and the data of this study shows a similar phenomenon, where companies with stable PROPER scores do not necessarily experience consistent improvements in financial performance, while some companies with low scores actually show financial efficiency in certain periods. This confirms that the relationship between environmental performance and financial performance is complex and highly contextual, influenced by the sustainability strategy, reporting transparency, and environmental cost efficiency implemented by each company.

4.2.3 The Influence of Environmental Costs on Financial Performance in Manufacturing Companies in the Consumer Goods Sector.

The partial test results indicate that environmental costs have a positive and significant effect on financial performance, thus the hypothesis stating that there is a positive effect of environmental costs on financial performance is accepted. This finding is consistent with *Stakeholder Theory* , which emphasizes that companies have responsibilities not only to shareholders but also to other parties affected by their operational activities (Freeman, 1984). In this context, the management and disclosure of environmental costs is a form of corporate accountability to the community, regulators, and investors, while also providing a positive signal regarding the company's commitment to sustainable business practices. Empirically, the results of this study align with previous studies conducted by Yusoff et al. (2022) and Putri & Aminah (2024), which showed that well-managed environmental costs can improve operational efficiency, reduce potential fines, and strengthen long-term productivity, thus positively impacting company profitability. Furthermore, transparency in environmental cost reporting encourages stakeholder trust and a positive investor response, which contributes to increased company value (Al-Mawali, 2021; Ladyve et al., 2025; Fakdawer, 2024). Thus, environmental costs are not merely considered a burden, but rather a strategic investment that strengthens financial performance. However, several studies have shown that excessive environmental spending without an efficiency strategy can reduce short-term profits, while still potentially enhancing long-term reputation (Tirtayasa, 2023). This confirms that the effectiveness of environmental costs on financial performance depends on the proportionality of spending and the integration of a company's sustainability strategy. Therefore, careful management is key to ensuring environmental costs truly become a source of added value for the company.

4.2.4 CSR Disclosure Moderates the Effect of Green Accounting on Financial Performance.

The test results indicate that CSR disclosure is unable to moderate the effect of *Green Accounting* on financial performance, so the hypothesis is rejected. Conceptually, *Green Accounting* is a form of corporate accountability in integrating environmental information into financial reports to increase transparency and responsibility for sustainability. *Stakeholder theory* emphasizes that companies should meet stakeholder expectations through comprehensive CSR disclosure, so that Green Accounting practices can provide added value to financial performance (Freeman, 1984). Empirically, several studies have shown that CSR *disclosure* can strengthen the relationship between *Green Accounting* and profitability by increasing stakeholder trust (Tirtayasa, 2023; Putri & Aminah, 2024; Auliyah et al., 2024). However, in the context of its relationship with *green accounting* , the results of this study indicate that CSR disclosure has not been able to play an effective moderating role. This can be explained by the low level of disclosure based on GRI standards, where the percentage of company *disclosure* only ranges from 0% to 19%, with a dominant range of 12%–14%. This limited level of disclosure indicates that the CSR information presented is still partial and does not reflect strong integration with *green accounting practices* .

Conceptually, *green accounting* requires the integration of environmental data into accounting systems, which directly impacts economic decision-making. However, when CSR disclosures are merely administrative and in-depth, they fail to strengthen the signal generated by *green accounting* . In other words, CSR *disclosures* in this context serve only as a symbolic complement that lacks the driving force for improving financial performance. This finding aligns with legitimacy and *voluntary disclosure theory* , which states that companies tend to disclose socio-environmental information to maintain legitimacy, rather than as part of a value-added strategy. Consequently, disclosure quality is low and inconsistent. This finding is also supported by previous research, which found that CSR practices in Indonesia are often more focused on image than on information substance, thus failing to strengthen the relationship between Green Accounting and financial performance (Anugerah, Saraswati & Andayani, 2018; Maria Cristine & Eriandani, 2021).

4.2.5 CSR disclosure moderates the influence of environmental performance on financial performance.

The test results show that CSR disclosure significantly moderates the effect of environmental performance on financial performance, thus accepting the hypothesis. A positive interaction coefficient indicates that CSR disclosure strengthens the relationship between environmental performance and financial performance. Conceptually, good environmental performance serves as a positive signal to *stakeholders* , which can enhance corporate image, consumer loyalty, and investor confidence. *Stakeholder* theory asserts that transparency through CSR disclosure can strengthen the relationship between environmental responsibility and financial performance (R. Edward Freeman, 1984). Previous empirical studies have also shown that companies with high environmental performance and CSR disclosure tend to achieve greater market recognition and increased profitability (Clarkson et al., 2011; Setiawan et al., 2021).

These findings remain consistent despite the relatively low level of CSR disclosure based on GRI standards in this study, ranging from 0% to 19%, with the majority of companies falling within the 12%–14% range. This suggests that, despite limited disclosure, CSR information still serves as an additional signal that reinforces *stakeholders' positive perceptions* of a company's environmental performance. In other words, even at relatively low levels of disclosure, CSR can still function as a legitimizing mechanism that enhances the informational value of environmental performance. These results also provide a more contextual perspective than previous findings. Previous research has suggested that CSR disclosures in Indonesia are often inconsistent and unable to provide a strong signal to investors (Widianingsih, 2012). However, this study shows that when a company has demonstrated good environmental performance, CSR disclosure, even if limited, can still strengthen its influence on financial performance. This indicates that the effectiveness of CSR as a moderating variable is determined not only by the level of disclosure but also by the quality of the underlying environmental performance. Thus, these findings confirm that CSR disclosure in Indonesia is beginning to assume a more strategic role, particularly when combined with strong environmental performance. Under these circumstances, CSR is no longer merely administrative but serves as a reinforcement that increases the relevance of environmental information in influencing a company's financial performance.

4.2.6 CSR Disclosure Moderates the Effect of Environmental Costs on Financial Performance.

The test results show that CSR disclosure significantly weakens the effect of environmental costs on financial performance, thus rejecting the hypothesis. Conceptually, environmental costs incurred by companies should be viewed as strategic investments that can improve long-term efficiency, reduce the risk of litigation or fines, and strengthen the company's reputation and legitimacy. Legitimacy theory emphasizes that transparency through CSR disclosure can strengthen public perception of environmental cost management and its impact on financial performance (Suchman, 1995). Previous empirical studies also show that companies that manage environmental costs efficiently and disclose them through CSR tend to receive a positive response from investors, thus supporting increased company value (Buana & Nuzula, 2017; Ladyve et al., 2025). However, the results of this study point in a different direction, where CSR disclosure actually weakens the relationship between environmental costs and financial performance. This indicates that, in the context of this study, increased environmental costs accompanied by CSR disclosure cannot be interpreted as a positive signal by *stakeholders* , but rather, is potentially perceived as an additional cost burden that depresses profitability. This condition can be explained by the characteristics of CSR disclosure in Indonesia, which still tends to be voluntary and administrative, so that information related to environmental costs is not presented comprehensively and strategically.

Empirically, this is reflected in the relatively low level of CSR disclosure based on GRI standards in this study, ranging from 0% to 19% during the observation period. Most companies only disclosed less than 15% of the GRI indicators, and some companies even made no disclosures at all in some years of observation. This low level of disclosure indicates that the information provided does not reflect the company's overall environmental activities, particularly those related to environmental costs, thus failing to build a positive perception among *stakeholders.* This finding aligns with research showing that CSR disclosures in Indonesia often fail to substantially reflect the quality of environmental management, making them ineffective in increasing a company's economic value (Widianingsih, 2012). Therefore, when environmental costs increase, limited and incomprehensive CSR disclosures can actually reinforce negative perceptions of company efficiency, thus weakening the relationship between environmental costs and financial performance.

5. Conclusion

This study shows that *green accounting* and environmental performance have a positive but insignificant effect on financial performance in consumer goods manufacturing companies, while environmental costs have a

positive and significant effect on financial performance in consumer goods manufacturing companies. CSR disclosure as a moderating variable is unable to strengthen the effect of *green accounting* on financial performance. However, CSR disclosure as a moderating variable is able to strengthen the effect of environmental performance on financial performance and weaken the effect of environmental costs on financial performance.

For future researchers, they can expand the scope of their research by including other industrial sectors besides consumer goods manufacturing, and consider financial performance measures other than ROA, such as *Return on Equity* (ROE) or *Economic Value Added* (EVA), to obtain a more comprehensive picture. Future researchers are also advised to use mandatory GRI indicators for CSR disclosure, rather than voluntary and administrative ones. They should also develop broader *Green Accounting and environmental cost indicators, including practices not fully disclosed in annual reports.*

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