



**The Effect Of Green Accounting, Environmental Performance, And
Company Size On Profitability In Manufacturing Companies
In 2020–2024**

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Abstract

This study aims to analyze and explain the influence of Green Accounting, Environmental Performance, and Company Size on Profitability in manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The background of this research departs from the increasing global attention to environmental and business sustainability issues, which requires companies to not only focus on financial aspects, but also pay attention to the environmental impact of their operational activities. This research method uses a quantitative approach with multiple linear regression analysis techniques. Data was obtained from the company's annual report and sustainability report which were the research samples. The Results in the study claim that green accounting and corporate size have negative influence on return on assets (roa). Whereas environmental performance has a positive influence on company's pro capabilities ratio (roa). In the study it claims that green accounting variables, environmental costs, and corporate size are jointly affected by corporate profitability.

Keywords : Green Accounting, Environmental Performance, Firm Size, Profitability.

INTRODUCTION

Global awareness of sustainability and environmental responsibility issues has grown rapidly in recent decades. Companies are required to not only be oriented towards achieving financial profits, but also pay attention to the social and ecological impact of their business activities. In this context, Green Accounting or green accounting is one of the important approaches in financial reporting that takes into account environmental aspects comprehensively.

Application Green Accounting It is expected to be able to increase the company's transparency and accountability to stakeholders, as well as encourage efficiency in the use of natural resources. On the other hand, good Environmental Performance is often a reflection of a company's commitment to responsible environmental management, which can improve the company's image and attract investors.

Company size is also a factor that is often associated with the company's ability to apply sustainability principles. Large companies generally have more adequate resources and capacity to implement environmental responsibility programs. However, the relationship between company size and profitability still showed mixed results in previous studies.

This research is motivated by the difference in results (inconsistency) from previous studies on the influence of Green Accounting, Environmental Performance, and Company Size to Profitability. Several previous studies have shown that these variables have a significant effect on profitability (e.g., research by Fitriyatun & Meirini, 2024), while other studies have found that the same variables do not have a significant effect (e.g., research by Aurellia & Hayaah, 2023; Murniati & Sovita, 2021). This difference in results creates a research gap that needs to be retested with the latest conditions and data.

In addition, most of the previous research used the period before 2020, while this study used the period 2020–2024, which is the current post-pandemic period and when regulations and environmental awareness increased. This is an important update because it can provide a more accurate picture of the influence Green Accounting, Environmental Performance, and Company Size to Profitability of manufacturing companies. Therefore, this study was conducted to empirically test the influence Green Accounting, Environmental Performance, and Company Size to Profitability in manufacturing companies listed on the IDX for the 2020–2024 period.

RESEARCH METHODS

This study uses a quantitative approach with the type of associative research, which aims to determine the relationship and influence between variables. The data used is secondary data obtained from the annual reports and sustainability reports of manufacturing companies listed on the IDX for the 2020–2024 period.

Independent variables in this study include Green Accounting (X_1), Environmental Performance (X_2), and Company Size (X_3), while the dependent variable is Profitability (Y) measured by the ratio Return on Assets (ROA). Green accounting is proxied using environmental costs, environmental performance is seen from the PROPER rating (gold, green, blue, red, and black) by giving a score to each rating, company size uses the calculation of the logarithm of total assets. ROA calculation uses profit after tax divided by the company's total assets. Data analysis was carried out using classical

assumption tests, multiple linear regression, t tests, F tests, and determination coefficient (R²) calculations using SPSS IBM 25 software.

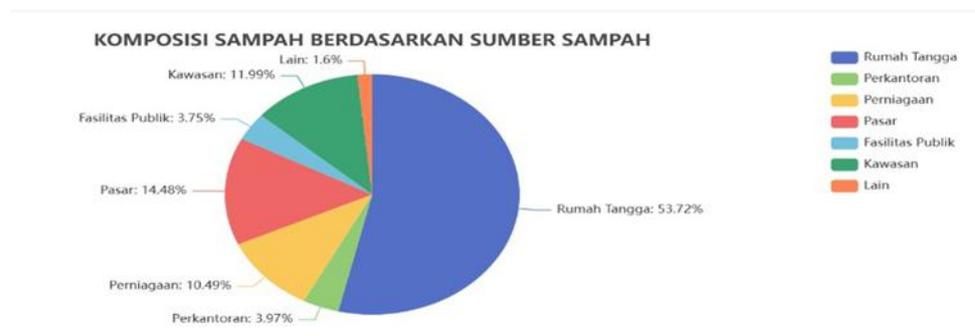
RESULTS AND DISCUSSION

1. Profitability Problem Finding Analysis

Describe Profitability issues in manufacturing companies are increasingly influenced by environmental challenges. Data from SIPSN (2024) shows that household waste still dominates national waste composition, reaching 50.8% of total waste, indicating weak waste management that also affects industrial sectors. Manufacturing activities contribute significantly to environmental problems, forcing companies to adopt more sustainable practices.

Although Green Accounting aims to balance environmental responsibility with profitability, many companies still perceive it as an additional cost. This perception causes temporary declines in Return on Assets (ROA) during early implementation stages. Moreover, the PROPER report (2024) shows that while the number of companies achieving green and gold ratings has increased, many still perform below standard, reflecting inconsistent environmental management.

The study's results indicate that 46.9% of profitability variation is explained by Green Accounting, Environmental Performance, and Company Size, with Green Accounting and Environmental Performance showing positive effects, while Company Size remains insignificant. Overall, the main profitability problem lies in the short-term cost burden of environmental initiatives, which delays the realization of long-term financial benefits.



Source: National Waste Management Information System (SIPSN), 2024.

Figure 1. Composition of Waste According to the Source of Waste

Based on the figure, the percentage of household waste still dominates the national waste composition, reaching around 50.8% of the total waste volume by 2024, showing the large role and impact on the environment as well as the importance of effective management at the family and community levels. The habit of littering without prior processing from households not only causes environmental hygiene and health problems, but also has a direct and indirect impact on the manufacturing industry sector.

2. Profitability Increase Factor Analysis.

The study results show that Green Accounting and Environmental Performance are key factors in improving profitability among manufacturing companies. Firms that disclose environmental costs transparently and manage resources efficiently achieve

higher Return on Assets (ROA). Good environmental performance, indicated by higher PROPER ratings, enhances corporate reputation and investor trust, which positively impacts financial outcomes.

The adoption of eco-efficient production, waste reduction, and resource optimization strengthens operational efficiency and reduces long-term costs. This supports the Stakeholder and Signaling Theories, where environmentally responsible behavior generates positive signals to stakeholders, leading to improved market perception and profitability. Although Company Size has no significant direct effect, larger firms with effective sustainability programs tend to experience greater financial stability.

Overall, profitability increases when companies integrate sustainability principles into strategic and operational decisions, emphasizing environmental efficiency as a core driver of long-term value creation. To further illustrate these findings, the results of the statistical tests and regression analyses are presented in the following tables, showing the influence of each variable on profitability.

Table 1. Descriptive Statistical Test Results
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GREEN ACCOUNTING (X1)	70	,0006	,2720	,036880	,0510204
KINERJA LINGKUNGAN (X2)	70	3	5	3,39	,728
UKURAN PERUSAHAAN (X3)	70	27,4804	32,0494	29,666789	1,2579713
ROA (Y)	70	,0019	,9981	,112417	,1396964
Valid N (listwise)	70				

Source: Data processed Using IBM SPSS 25 (2025)

Based on Table 1, there are 70 data on companies in the manufacturing sector that have met the criteria in this study.

Table 2. Normality Test Results
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		64
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	,02750809
Most Extreme Differences	Absolute	,092
	Positive	,077
	Negative	-,092
Test Statistic		,092
Asymp. Sig. (2-tailed)		,200 ^{c,d}

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Source: Data processed Using IBM SPSS 25 (2025)

Based on table 2 of the normality test results using the One Sample Kolmogorov Smirnov test, it can be seen that the value of Asymp. Sig. (2-tailed) is 0.200, this value is greater than 0.05.

Table 3. Multicolonial Test Results Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	GREEN ACCOUNTING (X1)	,998	1,002
	KINERJA LINGKUNGAN (X2)	,933	1,071
	UKURAN PERUSAHAAN (X3)	,931	1,074

a. Dependent Variable: ROA (Y)

Source: Data processed using SPSS IBM 25 (2025)

Based on table 3 of the results of the multicollinearity test, it can be seen that the results of the Tolerance value in the Green accounting variable are 0.998, environmental performance is 0.933, and the Company size is 0.931. Of the Tolerance results, the three Independent variables all have a value of more than 0.10 (Tolerance > 0.10).

Table 4. Autocorrelation Test Results Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,703 ^a	,494	,469	,054201	1,108

a. Predictors: (Constant), UKURAN PERUSAHAAN (X3), GREEN ACCOUNTING (X1), KINERJA LINGKUNGAN (X2)

b. Dependent Variable: ROA (Y)

Source: Data processed Using IBM SPSS 25 (2025)

Based on table 4, it can be seen that the value of the Durbin-Watson test (DW test) is 1.108. From the criteria that have been determined, the Durbin-Watson value is between $(-2 \leq DW \leq 2)$, so it is concluded that this study does not experience autocorrelation.

Table 5. Heteroskedacityity Test Results Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,222 ^a	,049	-,058	,09684

a. Predictors: (Constant), X1X2X3, UKURAN PERUSAHAAN (X3), X2_KUADRAT, X1_KUADRAT, GREEN ACCOUNTING (X1), KINERJA LINGKUNGAN (X2), X3_KUADRAT

Source: Data processed using IBM SPSS 25 (2025).

Based on Table 5 it can be seen that the Chi Square Calculation value: $N \cdot R^2$ then $(64 \cdot 0.049 = 3.136)$ and the Chi Square Table value: 14.067 (Df=7, $\alpha = 0.05$). Based on the results it shows that the Chi Square Calculation < Chi Square Table $(3,136 < 14,067)$. It was concluded that the data did not show symptoms of heteroscedasticity.

Table 6. Multiple Linear Regression Test Results
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,488	,158		3,088	,003
	GREEN ACCOUNTING (X1)	-,542	,135	-,370	-4,021	,000
	KINERJA LINGKUNGAN (X2)	,057	,009	,576	6,061	,000
	UKURAN PERUSAHAAN (X3)	-,020	,006	-,337	-3,543	,001

a. Dependent Variable: ROA (Y)

Source: Data processed using IBM SPSS 25 (2025).

Based on the table of 6 Coefficients given, the Multiple Linear Regression equation for Profitability Rate (ROA) is: $LENGTH = 0.488 - 0.542GA + 0.057KL - 0.020UP + \epsilon$. The Multiple Linear Regression equation can be interpreted as a Constant Value: 0.488, the Green Accounting Regression Coefficient has a negative value of -0.542, the Environmental Performance Regression Coefficient has a positive value of 0.057, and the Company Size Regression Coefficient has a negative value of -0.020.

Table 7. Partial Test Results (t-test)
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,488	,158		3,088	,003
	GREEN ACCOUNTING (X1)	-,542	,135	-,370	-4,021	,000
	KINERJA LINGKUNGAN (X2)	,057	,009	,576	6,061	,000
	UKURAN PERUSAHAAN (X3)	-,020	,006	-,337	-3,543	,001

a. Dependent Variable: ROA (Y)

Source: Data processed using IBM SPSS 25 (2025).

Based on table 7 of the results of the partial test (t-test), the independent variables of green accounting, environmental performance, and company size have an effect on the dependent variable, namely profitability.

Table 8. Simultaneous Test Results (F Test)
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,172	3	,057	19,554	,000 ^b
	Residual	,176	60	,003		
	Total	,349	63			

a. Dependent Variable: ROA (Y)

b. Predictors: (Constant), UKURAN PERUSAHAAN (X3), GREEN ACCOUNTING (X1), KINERJA LINGKUNGAN (X2)

Source: Data processed using IBM SPSS 25 (2025).

Based on table 8 of ANOVA (Test F) it is known that the value (Sig.) for the regression model is 0.000. Since the value (0.000) is smaller than 0.05 ($0.000 < 0.05$), it can be concluded that all Independent variables (Green accounting (X₁), Environmental Performance (X₂), Company Size (X₃) simultaneously affect the Dependent variable (ROA (Y)).

Table 9. Coefficient of Determination test results
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,703 ^a	,494	,469	,054201	1,108

a. Predictors: (Constant), UKURAN PERUSAHAAN (X₃), GREEN ACCOUNTING (X₁), KINERJA LINGKUNGAN (X₂)

b. Dependent Variable: ROA (Y)

Source: Data processed using IBM SPSS 25 (2025).

Based on table 9, the Determination Coefficient (R₂) serves as an indicator of how much proportion of variation in the Dependent variable can be explained by the regression model. The value of R₂ ranges from 0 to 1, where a higher value indicates a better ability of the model to explain the variation of the Dependent variable. Based on the table presented, the Adjusted R Square value was recorded at 0.469, equivalent to 46.9%. This figure indicates that 46.9% of the fluctuation in the dependent variable, Return on Assets (ROA), can be explained by the combination of independent variables included in the model: Company Size (X₃), Green Accounting (X₁), and Environmental Performance (X₂).

The remaining 53.1% of the variation in Return on Assets (ROA) can be attributed to other factors not included in this study or variables outside the regression model used, such as liquidity, capital structure, operational efficiency, sales growth, innovation and R&D, corporate governance, and macroeconomic conditions.

CONCLUSION

The Results in the study claim that green accounting and corporate size have negative influence on return on assets (roa). Whereas environmental performance has a positive influence on company's pro capabilities ratio (roa). In the study it claims that green accounting variables, environmental costs, and corporate size are jointly affected by corporate profitability.

These results support Stakeholder and Signaling Theories, showing that sustainable and transparent practices improve financial performance. Companies and the government are encouraged to strengthen environmental programs to support long-term profitability.

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