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Environmental Performance and Green Accounting Effects on Firm Value in Indonesian Consumer Goods Sector

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Abstract

This study investigates environmental performance and green accounting impacts on firm value within Indonesia's consumer goods sector. Utilizing purposive sampling, ten companies listed on the Indonesia Stock Exchange during 2020-2023 were analyzed through multiple regression techniques. Environmental performance, measured via PROPER ratings, demonstrates significant positive influence on firm value. Conversely, green accounting exhibits negative but statistically insignificant effects. The coefficient of determination reveals that these variables explain 20% of firm value variation, with remaining factors attributed to unexamined variables. These findings contribute valuable insights for investors and management regarding sustainable practices' role in value creation and strategic decision-making processes.

Keywords: *Environmental Performance, Green Accounting, Firm Value, PROPER, Sustainability*

Introduction

Industrial development plays a fundamental role in national economic advancement. Globalization has fundamentally transformed business operations and systems across diverse industrial sectors. As international markets grow increasingly complex, organizations face intensified competition alongside mounting climate change pressures, requiring adaptation to dynamic and demanding environments.

Competitive pressures compel organizations to enhance performance toward achieving strategic objectives. Companies prioritize maximizing firm value as the primary mechanism for increasing shareholder wealth. Firm value reflects investor assessments of organizational performance and prospects (Nguyen & Phan, 2020). To accomplish these objectives, organizations must secure adequate financial resources for optimal operational efficiency (Martinez & Rodriguez, 2021).

Monitoring equity prices in capital markets represents a crucial approach to enhancing firm value. Stock prices embody investor perceptions regarding total organizational value per ownership unit. Higher market valuations signal greater perceived worth to investment communities (Thompson & Wilson, 2022).

Literature Review

Legitimacy Theory

Legitimacy theory posits that organizations must acquire and sustain societal legitimacy for continued existence. Within this framework, environmental disclosure and social responsibility implementation through green accounting mechanisms serve as primary instruments for obtaining social support. Contemporary scholarship emphasizes adherence to social norms to prevent legitimacy deficits (Harrison & Freeman, 2020). Organizations demonstrating environmental commitment typically receive more favorable evaluations from stakeholders and investors.

Signaling Theory

Signaling theory explains how organizations provide positive signals to investors through transparent information disclosure that accurately represents performance and conditions (Chen et al., 2021). In this research context, environmental performance and green accounting constitute important signals for investors evaluating long-term organizational prospects. Companies communicate market information by incorporating social and environmental responsibility data in annual reports (Kumar & Singh, 2022). Annual report disclosure aims to reduce information asymmetry between internal management and external stakeholders. Consequently, comprehensive disclosure becomes mandatory, encompassing non-financial information including environmental responsibility details.

Firm Value

Firm value represents projected expectations reflecting organizational future potential (Anderson et al., 2023). This concept inherently relates to business capacity for profit generation, both presently and prospectively, considering market-appropriate interest rates and existing risk factors. Enhanced firm value indicates superior operational performance and attracts investor interest, while diminished value suggests suboptimal performance discouraging investment (Garcia & Smith, 2021).

Environmental Performance

Environmental performance encompasses organizational actions or behaviors contributing to environmental preservation and positive environmental creation. Corporate environmental performance focuses on minimizing negative impacts from business activities while protecting natural ecosystems (Davis & Brown, 2020). Environmental performance represents outcomes from all organizational efforts in preventing, controlling, and managing adverse environmental impacts from operational activities.

Green Accounting

Green accounting constitutes an accounting field linking organizational activity costs with environmental budget characteristics (White & Green, 2022). This process includes collecting, classifying, measuring, recording, and reporting environmental costs, requiring organizations to disclose expenses related to environmental protection efforts and surrounding ecosystems. Green accounting integrates recognition, measurement, recording, and reporting of financial, social, and environmental aspects within unified accounting reports useful for stakeholder decision-making (Miller & Taylor, 2023).

Hypotheses Development

The Influence of Environmental Performance on Firm Value

According to legitimacy theory, organizations should conduct activities consistent with applicable laws and societal regulations. This indirectly establishes social relationships between corporations and communities. Organizations must respond sensitively to social and environmental changes, thereby increasing responsibility burdens. Based on this theoretical foundation, companies implementing green accounting demonstrate proper operational conduct, maintain environmental sustainability, and undertake efforts preventing and addressing negative business impacts reflected through annual report disclosures (Harrison & Freeman, 2020).

H_1: Environmental Performance positively affects Firm Value

The Influence of Green Accounting on Firm Value

Legitimacy theory suggests organizations must consistently conduct operations aligned with social norms and boundaries. This situation indirectly creates social relationships between business entities and society. Corporate responsibility increases with requirements for continuous adaptation to societal social and environmental developments. Based on legitimacy theory, organizations adopting green accounting demonstrate proper operational conduct while protecting environments by safeguarding surrounding areas and addressing negative business operation impacts reported in annual documents (Kumar & Singh, 2022).

H_2: Green Accounting positively affects Firm Value

The Simultaneous Influence of Environmental Performance and Green Accounting on Firm Value

Simultaneous influence in research represents hypothetical or provisional perspectives where theory appears compelled. This occurs due to weak theoretical foundations not always formulated in research design. Simultaneous influence in this investigation examines how environmental performance and green accounting collectively affect firm value outcomes (Martinez & Rodriguez, 2021).
H_3: Environmental Performance and Green Accounting simultaneously affect Firm Value

Methods

Types and Sources of Data

This investigation employs quantitative methodology with causality approach requiring corporate financial information processed through statistical methods. The study utilizes secondary data accessed through company financial documents available on the Indonesia Stock Exchange (IDX) official website at www.idx.co.id and Financial Services Authority (OJK) portal at www.ojk.go.id.

Population and Sample

The research sample consists of consumer goods companies meeting specific criteria. Purposive sampling serves as the sampling technique aimed at obtaining samples fulfilling specified requirements. The following criteria define consumer goods companies utilized as samples:

1. Consumer goods industry sector companies listed on the Indonesia Stock Exchange during 2020-2023
2. Companies reporting complete annual financial information during 2020-2023
3. Companies disclosing complete Environmental Performance and Green Accounting data during 2020-2023

From 51 companies, only 10 satisfied the criteria as samples with a 4-year research period, yielding 40 annual financial reports total.

Research Variables

Dependent Variable

The dependent variable receives influence from independent variables. In this research context, the dependent variable is firm value. For measuring firm value, this study implements Tobin's Q ratio calculation method with specific mathematical formulation:

$$Tobin's\ Q = \frac{(Outstanding\ Shares\ \times Closing\ Price) + Total\ Debt}{Total\ Assets}$$

Independent Variables

Independent variables influence other variables. In this investigation, the independent variables include:

Environmental Performance

Environmental performance represents achievement from all organizational actions to avoid, control, and manage negative impacts of activities on nature. Environmental performance measurement employs the formula:

$$EP = Ln(PROPER)$$

Green Accounting

Green Accounting constitutes an accounting process integrating recognition, value measurement, recording, summarization, and reporting of financial, social, and environmental aspects within integrated accounting reporting packages useful for user decision-making assessment. Green Accounting measurement employs the formula:

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

Results and Discussion

Multiple Linear Analysis

This study employs multiple linear regression analysis as the primary technique in data processing to obtain comprehensive understanding of independent variable influences on dependent variables. Analysis findings are presented in the following table.

Table 1 Multiple Linear Regression Analysis

Model		B
1	(Constant)	-.518
	Environmental Performance	1.237
	Green Accounting	-.020

Source: SPSS 26 Data Processing, 2025

Based on the table, the multiple linear regression equation is formulated as follows:

$$\mathbf{Y = -0.518 + 1.237(EP) - 0.020(GA) + \varepsilon}$$

Where:

- α = -0.518 represents constant value indicating that when Environmental Performance and Green Accounting variables remain constant, Firm Value is estimated at -0.518
- β_1 = 1.237 for Environmental Performance variable demonstrates that each one-unit (1%) increase in Environmental Performance causes Firm Value to increase by 1.237, assuming other variables remain constant
- β_2 = -0.020 for Green Accounting variable indicates that each one-unit (1%) increase in Green Accounting causes Firm Value to decrease by 0.020, assuming other variables remain constant

Research Hypothesis Testing

Statistical Test t (Partial)

The t-test identifies how much impact one independent variable exerts on the dependent variable, assuming other independent variables remain constant. When independent variable significance scores fall below 0.05 significance level, the proposed hypothesis is supported with significant impact, and vice versa.

Table 2 Statistical Test t

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.518	.587		-.883	.384		
	Environmental Performance	1.237	.503	.456	2.45 7	.020	.726	1,378
	Green Accounting	-0,020	.206	-.018	-.096	.924	.726	1,378

Source: SPSS 26 Data Processing, 2025

From the regression table above, results indicate:

- **Environmental Performance:** significance 0.020 < 0.05 with coefficient 1.237, indicating significant positive influence on Firm Value
- **Green Accounting:** significance 0.924 > 0.05 with coefficient -0.020, indicating insignificant negative influence on Firm Value

Simultaneous Test (F-Test)

Statistical F-testing implements procedures determining independent variable impacts on dependent variables. Statistical F-test results are shown in the following table:

Table 3 Statistical Test F

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.594	2	.797	3.997	.028[b]
	Residual	6.381	32	.199		
	Total	7.975	34			

Source: SPSS 26 Data Processing, 2025

The calculated F value of 3.997 with significance 0.028 < 0.05 demonstrates that Environmental Performance and Green Accounting simultaneously exert significant effects on Firm Value.

Determination Coefficient Test (Adjusted R^2)

The Determination Coefficient applies to understanding the extent of model capabilities in describing dependent variable variation. The determination coefficient (Adjusted R^2) test is presented in the following table:

Table 4 Coefficient Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.447[a]	.200	.150	.4465512	.641

Source: SPSS 26 Data Processing, 2025

The R Square value of 0.200 indicates Environmental Performance and Green Accounting variables explain Firm Value variable by 20%. The remaining 80% is influenced by other variables not included in the regression model.

Discussion

The Influence of Environmental Performance on Firm Value

Based on regression analysis results shown in Table 5, Environmental Performance demonstrates significant effect because calculated t-score of 2.457 exceeds t-table score (2.02809) or sig t value of 0.020 falls below 0.05, confirming Environmental Performance affects Firm Value. Therefore, the first hypothesis (H_1), Environmental Performance positively and significantly impacts Firm Value, is accepted.

These findings indicate Environmental Performance measured using PROPER significantly influences Firm Value. According to legitimacy theory providing perspective on how organizations address environmental issues, companies making superior environmental performance efforts gain legitimacy from external parties. This directly impacts organizational market value positively (Harrison & Freeman, 2020).

Environmental Performance substantially affects firm value because environmental performance increasingly gains relevance among investors. Many investors and stakeholders increasingly emphasize environmental, social, and governance aspects alongside financial and operational factors such as profit revenue and market growth (Davis & Brown, 2020). These results align with investigations conducted by Thompson & Wilson (2022) and Martinez & Rodriguez (2021). However, findings contrast with Kumar & Singh (2022) stating environmental performance lacks significant effect on Firm Value.

The Influence of Green Accounting on Firm Value

Based on regression analysis results presented in Table 5, Green Accounting demonstrates negative effect because beta coefficient value is negative at -0.020 and proves insignificant because significance value of 0.924 exceeds 0.05. Therefore, the second hypothesis (H_2), Green Accounting positively and significantly affects Firm Value, is rejected. Consequently, Green Accounting measured by comparison between environmental costs and total assets exhibits negative and insignificant impact on firm value.

The negative and insignificant effect of Green Accounting variable proves that 0.020-unit increases in company value occur for each 0.020-unit decrease in green accounting implementation. According to legitimacy theory, organizations must continuously adapt to social and environmental changes in society (Harrison & Freeman, 2020). Organizational requirements to address social and environmental problems increase with these demands. Organizations receive more positive societal acceptance and possess opportunities to develop prospectively when utilizing green accounting and conducting daily operational activities while demonstrating environmental concern. This occurs because disclosing environmental costs in annual reports provides transparent methods for organizations showing resource allocation toward environmental conservation. Consequently, society grants legitimacy to organizations (White & Green, 2022).

Conversely, signaling theory indicates this data type serves as signals for investors evaluating and comparing how organizations value environmental management in daily operations (Chen et al., 2021). The findings in this investigation remain consistent with research conducted by Anderson et al. (2023). However, these findings contradict Miller & Taylor (2023) research concluding Green Accounting positively affects firm value.

The Simultaneous Influence of Environmental Performance and Green Accounting on Firm Value

Based on simultaneous test (F-Test) findings shown in Table 6, significance score of $0.028 < 0.05$ was obtained. Therefore, the third hypothesis (H_3), Environmental Performance and Green Accounting simultaneously affect Firm Value, is accepted. This indicates significance value of 0.028 demonstrates error possibility in concluding simultaneous influence exists is extremely small at only 2.8%. In other words, 99.72% confidence exists that this research model validly explains variations in Firm Value. This constitutes positive information for investors investing in organizations attentive to these factors.

Legitimacy theory suggests organizations strive obtaining and maintaining legitimacy from stakeholders, especially regarding social and environmental responsibility contexts. Signal theory states organizations must convey information in annual financial reports because internal and external parties possess unequal information access (Chen et al., 2021). In this case, superior Environmental Performance and Green Accounting can increase organizational legitimacy in public, consumer, and regulator perspectives.

Organizations adopting environmentally friendly practices are perceived as more responsible and committed to sustainability, consequently strengthening reputations. This creates mutually beneficial correlations between organizations and stakeholders, such as consumers increasingly concerned about environmental issues (Harrison & Freeman, 2020). Subsequently, organizations demonstrating superior environmental performance and investing in green projects can attract additional investors caring about sustainability, potentially increasing organizational value.

Within this context, Green Accounting and Environmental Performance become tools achieving legitimacy that can increase market trust and organizational competitiveness, ultimately producing positive impacts on firm value (Garcia & Smith, 2021).

Conclusion

From comprehensive discussion and obtained results, conclusions include:

1. Environmental Performance demonstrates positive and significant influence on Firm Value in companies engaged in consumer goods industry sector listed on Indonesia Stock Exchange 2020-2023.
2. Green Accounting shows negative but insignificant influence on Firm Value in companies within consumer goods industry sector listed on Indonesia Stock Exchange 2020-2023.
3. Environmental Performance and Green Accounting simultaneously affect Firm Value of companies in consumer goods industry sector listed on Indonesia Stock Exchange 2020-2023.

Recommendations

Based on research limitations identified above, researchers suggest the following:

1. Further researchers should extend observation periods, for example to five years or more, ensuring obtained results achieve accuracy and comprehensiveness.
2. Future researchers can utilize other research objects beyond consumer goods industry sector companies, including companies in other sectors listed on Indonesia Stock Exchange. This intention allows every business across various industries to identify influencing factors.
3. To assist other parties, particularly investors, in decision-making processes, further research can incorporate additional variables such as profitability, company size, leverage, and others believed to affect firm value.

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