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Analysis of ESG Performance, Profitability, Leverage, and Sustainable Growth on Firm Value Category: An Empirical Study Using Binary Logistic Regression

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Abstract:

Background: Firm value is an important indicator for assessing a company's performance and prospects. Environmental, social, and governance (ESG) factors, profitability, leverage, and sustainable growth are expected to be related to firm value. However, the relationships among these factors need to be tested empirically using an appropriate statistical approach.

Aim: This study aims to analyze the effects of ESG Performance, Return on Assets (ROA), Leverage Ratio, and Sustainable Growth on firm value category.

Method: The study uses a quantitative approach with secondary data comprising 88 observations. The analysis applies binary logistic regression with the Enter method. The tests include the Omnibus Test, the Hosmer–Lemeshow Test, the Nagelkerke coefficient of determination, the classification table, and tests of the regression coefficients at the 5% significance level.

Results: The results show that the regression model as a whole is not yet significant, with a Chi-square value of 5.071 and a significance of 0.280. A Nagelkerke R-squared of 0.075 indicates that the model's explanatory power is relatively limited. The Hosmer–Lemeshow test yields a significance of 0.477, while the overall classification accuracy reaches 59.1%. Partially, ESG Performance, ROA, Leverage Ratio, and Sustainable Growth have significance values of 0.084, 0.364, 0.757, and 0.982, respectively. Accordingly, none of the independent variables is significant at the 5% level.

Conclusion: The model provides insufficient statistical evidence of the effects of the four variables on firm value category.

Implementation: Future research should consider adding relevant variables, reviewing how firm value is measured, and refining the model specification to improve explanatory power and predictive accuracy.

Keywords: ESG Performance, profitability, leverage, sustainable growth, firm value.

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INTRODUCTION

Companies must maintain financial performance while also addressing sustainability to compete and meet changing stakeholder expectations. Firm value is an indicator of the market's assessment of a company's condition and prospects. In this context, environmental, social, and governance (ESG) performance, profitability, financing structure, and sustainable growth are relevant factors to examine in relation to firm value.

ESG Performance reflects a company's performance in environmental, social, and governance aspects. Meanwhile, profitability indicates a company's ability to generate profit, which this study measures using Return on Assets (ROA). Leverage Ratio describes the extent of debt-based financing, while Sustainable Growth represents a company's ability to grow sustainably. Conceptually, these factors may be related to investor perceptions and market valuation. However, these relationships do not always follow the same pattern across companies because financial conditions, industry characteristics, and economic dynamics can influence them.

This study uses secondary company data covering 2020–2025, with 88 firm-year observations. The data include ESG Performance, ROA, Leverage Ratio, Sustainable Growth, and Tobin's Q as measures of firm value. For binary logistic regression analysis, firm value is categorized into two groups based on the sample median: category 1 for Tobin's Q values above the median and category 0 for values at or below the median. This categorization allows the study to examine the factors related to the likelihood that a company belongs to the relatively higher firm value group.

The main problem of this study is whether ESG Performance, profitability, leverage, and sustainable growth are significantly related to firm value category, both simultaneously and partially. To address this problem, the study analyzes the relationship between the four independent variables and firm value category using binary logistic regression. This

approach estimates the likelihood that an observation falls into the higher firm value category based on the characteristics of its explanatory variables.

Preliminary results show that the regression model as a whole is not significant at the 5% level, with an Omnibus Test significance of 0.280. In addition, ESG Performance, ROA, Leverage Ratio, and Sustainable Growth are not statistically significant at that level. These initial findings form the basis for evaluating these variables' ability to explain firm value category in the research sample. Therefore, this study does not focus solely on testing relationships among variables; it also provides an empirical picture of the model's limitations in explaining differences in firm value category during the observation period.

Stakeholder theory, introduced by Freeman (1984), explains that a company is responsible not only to its shareholders but also to parties with an interest in its activities, such as employees, consumers, the community, the government, and the environment. This perspective helps explain ESG Performance because environmental, social, and governance practices can reflect a company's efforts to meet stakeholders' interests.

In the context of firm value, implementing ESG can increase trust, reputation, and investors' perceptions of business sustainability. However, these benefits are not always immediately reflected in market valuation because ESG implementation may require costs and its results may only become visible in the long term. Research in Indonesia also shows mixed results. Daulay and Wahyudi (2026), for example, reported that the ESG components they examined had no significant effect on firm value measured by Tobin's Q.

Agency theory, developed by Jensen and Meckling (1976), addresses the relationship between company owners (principals) and managers (agents), including potential conflicts of interest and agency costs.

This theory helps explain the relationships among profitability, leverage, and firm value.

Profitability can provide an indication of management's ability to manage assets to generate profit. Meanwhile, debt can serve as a disciplinary mechanism for management, but it also creates payment obligations and financial risk. Therefore, high profitability does not always guarantee higher firm value, and leverage can have different consequences depending on the company's ability to meet its obligations and on how the market assesses that risk. Jamalaudin et al. (2024): One metric used to assess how well a business is performing is profitability. An organization's capacity to turn a profit can be used to measure performance. High profitability indicates strong organizational success. Maharani et al. (2025) found that profitability also significantly affects tax avoidance, as companies can

focus on reducing the amount of income tax they are required to pay. Kartika et al. (2024) examined profitability on corporate income tax payable for food and Beverage Companies Listed on the Indonesia Stock Exchange for the 2016-2020 period. That profitability (NPM) does not significantly affect corporate income tax. Komara & Riana (2024) found that profitability does not affect risk management disclosure, while leverage and liquidity do. Trimayanti et al. (2024) found that a firm's profitability and sustainability largely depend on workforce efficiency. Therefore, ensuring that the organization's resources function as efficiently as possible is essential. Factors affecting employee productivity include leadership style, job discipline, and supervision. Ahmad et al. (2026) found that the CFC EWS RT dashboard can represent the clinic's financial condition in an accurate and contextual manner. This system effectively provides an early signal of declining profitability, liquidity pressures, and increased leverage risk, allowing management to take corrective action in a relatively short time.

Signaling theory explains that information a company communicates can help investors assess its condition and prospects. Information about financial performance, financing policy, and sustainability practices can signal management quality.

Good ROA can signal a company’s ability to generate profit from its assets. ESG information can indicate a commitment to sustainability and governance, while leverage can signal both financing strategy and financial risk. However, the market’s response to these signals depends on the information's credibility, industry conditions, and investor expectations. These three theories complement one another in this study. Stakeholder theory helps explain the relevance of ESG, agency theory provides a basis for understanding management and financing decisions, and signaling theory explains how financial and sustainability information relates to market valuation.

Firm value reflects the market’s assessment of a company’s condition, performance, and economic prospects. In financial research, Tobin’s Q is often used as a market-based proxy for this assessment. A relatively high Tobin’s Q value may indicate that the market values the company more highly than the asset value on which the calculation is based.

This study uses Tobin’s Q to form a categorical dependent variable. Companies are classified in the high firm value category when Tobin’s Q is above the sample median, while values at or below the median are assigned to category 0. Therefore, the dependent variable no longer measures changes in Tobin’s Q continuously, but rather the likelihood that an observation belongs to the relatively high firm value group. Using the median is an

operational decision of this study, not a universal threshold for determining whether a company has high or low value. The interpretation of the regression results must follow this category definition.

ESG Performance indicates a company's performance in the environmental, social, and governance dimensions. The environmental aspect relates to managing environmental impacts, the social aspect relates to employees and the community, and governance covers the company's oversight and management mechanisms. From a stakeholder theory perspective, strong ESG performance can help companies build trust and maintain relationships with interested parties. From the perspective of signaling theory, investors may also consider ESG information when assessing a company's prospects.

Nevertheless, empirical evidence on the relationship between ESG and firm value has been inconsistent. Anisah et al. (2026) found that ESG positively affected ROA but had no significant effect on firm value in a sample of IDX-listed companies in 2024. This finding indicates that the benefits of ESG for operating performance are not always immediately reflected in market valuation. Based on this argument, the first hypothesis is formulated as follows:

H1: ESG Performance is related to the likelihood that a company falls into the high firm value category.

Profitability indicates a company's ability to generate profit from the resources it manages. In this study, profitability is measured using Return on Assets (ROA), the ratio of profit to total assets, based on the definitions and financial statement components used. A higher ROA may indicate more productive asset use and serve as a positive signal to investors. Companies that generate profit efficiently may receive a higher market valuation. However, this relationship does not always hold because investors also consider earnings sustainability, business risk, and growth prospects. The study by Anisah et al. (2026) found a positive and significant relationship between ROA and firm value in the sample examined. This result supports the relevance of profitability as a factor to test in this study.

H2: Profitability, as measured by ROA, is related to the likelihood that a company falls into the high firm value category.

Leverage indicates the extent to which debt is used in a company's financing structure. In this study, the variable is measured using the Leverage Ratio according to the definition in the source data. According to agency theory, debt can encourage management to be more disciplined in using company resources. However, a high level of debt can also

increase interest expense, default risk, and cash flow uncertainty. Therefore, leverage can have either a positive or a negative relationship with firm value, depending on the company's ability to manage its obligations and on investors' risk perceptions. The study by Sari and Valdiansyah (2025) on Indonesian banking companies found that leverage, as a control variable, had no significant effect on firm value in the model they used. This result indicates that the relationship between leverage and firm value may depend on sample characteristics and model specification.

H3: Leverage is related to the likelihood that a company falls into the high firm value category.

Sustainable Growth describes a company's ability to maintain growth without continuously relying on uncontrolled additional external financing. In financial analysis, the sustainable growth rate can be associated with earnings capacity, dividend policy, and financing structure. Companies with good sustainable growth potential can attract investor attention because they are considered to have business development prospects. However, high growth does not automatically increase firm value if it is not supported by efficiency, adequate cash flow, and risk management.

Ramadhan et al. (2024) examined the relationship of the Sustainable Growth Rate and the ESG Risk Score with the valuation of IDX-listed companies. This study is relevant because it brings sustainable growth together with company valuation in the context of the Indonesian capital market.

H4: Sustainable Growth is related to the likelihood that a company falls into the high firm value category.

These studies show that the relationships among ESG, profitability, and firm value can produce different findings. Differences in observation period, company sector, sample size, variable proxies, and analytical methods are among the aspects that need to be considered when comparing research results.

This study takes a different focus: a median-based firm value category analyzed with binary logistic regression, rather than estimating changes in continuous Tobin's Q, as is common in linear regression or panel data regression. However, this methodological difference alone is not sufficient to establish novelty. Novelty needs to be assessed by comparing more broadly with previous studies that have used firm value classification and logistic regression on Indonesian company data.

Conceptually, ESG Performance, ROA, Leverage, and Sustainable Growth are positioned as independent variables related to the likelihood that a company falls into the high firm value category.

Table 1. Operational Variable

Variable	Indicator	Scale
ESG Performance (X1)	ESG scores published by ESG data providers, or scores calculated based on ESG indicators used in the research.	Rasio
Profitability — ROA (X2)	Return on Assets (RoA) = Laba bersih / Total aset × 100%.	Rasio
Leverage (X3)	Debt-to-Equity Ratio (DER) = Total utang / Total ekuitas.	Rasio
Sustainable Growth (X4)	Sustainable Growth Rate (SGR) = Return on Equity (ROE) × Retention Ratio, dengan Retention Ratio = 1 − Dividend Payout Ratio.	Rasio
Firm Value Category (Y)	1 = Tobin's Q above the median; 0 = Tobin's Q equal to or below the median	Nominal/Biner

Based on Table 1, the theoretical framework and previous research, the simultaneous and partial hypotheses can be formulated as follows:

- H1: ESG Performance is related to firm value category.
- H2: ROA is related to firm value category.
- H3: Leverage is related to firm value category.
- H4: Sustainable Growth is related to firm value category.
- H5: ESG Performance, ROA, Leverage, and Sustainable Growth are simultaneously related to firm value category.

These hypotheses are theoretical conjectures to be tested, not a preliminary conclusion that the hypothesized relationships will necessarily be significant.

METHOD

This study uses a quantitative approach with an associative research design, namely research that analyzes the relationship between independent and dependent variables based on numerical data. The data used are secondary data obtained from financial and sustainability information of companies listed on the Indonesia Stock Exchange (IDX). A quantitative approach was chosen because the study focuses on testing, through statistical tests, the relationship of ESG Performance, profitability, leverage, and sustainable growth with the firm value category. The analysis uses binary logistic regression because the

dependent variable has two categories, namely the high firm value category and the low category (equal to or below the sample median).

The study population comprises companies listed on the Indonesia Stock Exchange during the period 2020–2025. The research sample consists of firm-year observations that have data on ESG Performance, Return on Assets (ROA), Leverage Ratio, Sustainable Growth, and Tobin's Q. Based on the processed dataset, this study uses 88 firm-year observations.

The sample was determined based on the availability of the data needed to measure all research variables. Accordingly, the sample criteria must ensure that the information used is available and comparable over the observation period. However, because the list of issuers and the details of the sample selection process have not been fully explained, the sampling technique and the number of unique companies that make up the 88 observations need to be confirmed against the original data before the manuscript is published.

This study uses data of companies listed on the Indonesia Stock Exchange over six years, namely 2020–2025. Data were collected and processed from annual reports, financial statements, and company ESG information available on the official IDX website and/or the official websites of the respective companies. The research was conducted non-field, using already published data. The 2020–2025 period was chosen to observe company characteristics over a time span that includes changes in economic conditions and growing attention to corporate sustainability.

The data used are numerical secondary data. The data were obtained from annual reports, financial statements, and company information sources relevant to the research variables. The variables include ESG Performance, ROA, Leverage Ratio, Sustainable Growth, and Tobin's Q. The data are arranged in a firm-year format, so each observation represents a company's information in a particular year.

Before the analysis, we checked the data for format consistency, unit consistency, and completeness. Numerical data that use decimal signs or percentages were standardized into a format readable by statistical software. For Tobin's Q in particular, the unit and calculation formula need to be re-verified against the original source because this variable forms the basis for the firm value category.

The dependent variable in this study is the firm value category formed from Tobin's Q values. The variable is coded 1 if Tobin's Q is above the sample median and 0 if the value is equal to or below the sample median. Based on the preliminary processing, the median

Tobin's Q was 2.59, with 44 observations in category 1 and 44 in category 0. This grouping distinguishes observations with relatively higher firm value from the other observations in the sample.

The independent variables consist of ESG Performance, profitability, leverage, and sustainable growth. ESG Performance is measured based on the ESG score listed in the dataset. Profitability is measured using Return on Assets (ROA), an indicator of a company's ability to generate profit from its assets. Leverage is measured using the Leverage Ratio, which describes the use of debt-based financing. Meanwhile, Sustainable Growth describes a company's ability to grow sustainably, in accordance with the measurement definition in the source data.

All independent variables are used as predictors in the binary logistic regression model. The formula, unit, and source of each indicator need to be confirmed as consistent with the company reports that serve as the basis for data collection.

The research instrument is a data documentation sheet used to record each company's information for the variables studied. The collected data were then tabulated in Microsoft Excel and prepared for analysis using IBM SPSS Statistics. The research procedure was carried out in several stages, namely data collection, selection of observations based on information availability, data checking and cleaning, determination of the operational definitions of the variables, formation of the dummy dependent variable, and statistical testing.

In the data preparation stage, each variable was checked to identify missing data, formatting errors, and inconsistent values. Next, the Tobin's Q values were used to form the binary dependent variable based on the sample median. The independent variables were then arranged numerically so they could be processed using the binary logistic regression procedure in SPSS.

The data analysis uses binary logistic regression with the Enter method, in which all independent variables are entered into the model simultaneously. This method tests the relationship between ESG Performance, ROA, Leverage Ratio, and Sustainable Growth and the likelihood that an observation belongs to the higher firm value category.

The binary logistic regression model is formulated as follows:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 ESG + \beta_2 ROA + \beta_3 LEV + \beta_4 SGR$$

Where:

- p is the probability that an observation falls into the high firm value category.
- β_0 is the constant.
- $\beta_1, \beta_2, \beta_3, \beta_4$ is the regression coefficient of each independent variable.
- ESG is ESG Performance.
- ROA is Return on Assets.
- LEV is the Leverage Ratio.
- SGR is Sustainable Growth.

Model testing is carried out through the Omnibus Tests of Model Coefficients to assess the significance of the model as a whole, the Hosmer–Lemeshow Test to evaluate model fit, and the Nagelkerke R Square to assess the model's relative explanatory power. Partial testing of the coefficients is carried out by considering the significance value, regression coefficient, odds ratio or Exp(B), and the 95% confidence interval. The classification table is also used to describe the model's ability to group observations into firm value categories.

The significance level used is 5%. A significance value below 0.05 is treated as statistically significant evidence, whereas a value above 0.05 indicates that the evidence is not yet sufficient to reject the null hypothesis at that level. The test results are then interpreted based on the direction of the coefficients, the magnitude of the odds ratios, and the uncertainty of the estimates.

DISCUSSION

This study analyzes the relationship of ESG Performance, profitability measured by Return on Assets (ROA), Leverage Ratio, and Sustainable Growth with firm value category using binary logistic regression. The dependent variable is categorized into two groups, namely firm value above the sample median and firm value equal to or below the sample median. Syahrudin & Susanto (2025) found that the discriminant model can distinguish companies based on going concern audit opinion. The analysis results show that the discriminant model built with three variables, Financial Distress, Liquidity, and Leverage, is statistically significant in distinguishing companies. Kinasih et al. (2025) , focusing on the banking sector, underscore its critical role in the economy and its ongoing digital transformation, reinforcing the need for governance systems that foster sustainable and innovation-driven financial development

In the preliminary analysis of 88 observations for the 2020–2025 period, the median Tobin's Q was 2.59. A total of 44 observations fall into the category of firm value above the

median, and 44 observations fall into the category equal to or below the median. These statistics describe only the initial dataset. If the research period is limited to 2021–2025, the category distribution and all regression results must be recalculated based on the 73 firm-year observations corresponding to that period.

Simultaneous model testing

We conduct simultaneous model testing using the Omnibus Tests of Model Coefficients. This test determines whether adding ESG Performance, ROA, Leverage Ratio, and Sustainable Growth improves the model compared with a model containing only the constant.

Table 2. Results of the Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	5.071	4	.280
	Block	5.071	4	.280
	Model	5.071	4	.280

Based on Table 2, the significance value of 0.280 is greater than 0.05. This result shows that the model containing the four independent variables has not been statistically proven to be better than the model without predictors at the 5% significance level. Accordingly, there is not yet adequate evidence that ESG Performance, ROA, Leverage Ratio, and Sustainable Growth are simultaneously related to firm value category in the tested model.

This result does not mean that the four variables are entirely irrelevant to firm value. It indicates that, given the data and model specification used, the statistical evidence is not yet sufficient to support a significant simultaneous relationship. Further interpretation needs to consider the sample characteristics, the measurement of the variables, and the accuracy of the model specification.

Model fit testing

Model fit is evaluated using the Hosmer–Lemeshow Test. This test compares the observed event frequencies with the frequencies predicted by the model across specific probability groups.

Table 3. Results of the Hosmer–Lemeshow Test

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	7.569	8	.477

Based on Table 3, the significance value of 0.477 exceeds 0.05. Accordingly, the test does not indicate a significant lack of model fit based on the Hosmer–Lemeshow procedure. Nevertheless, this result cannot be used as the sole basis for concluding that the model is good. It should be read alongside the Omnibus test, classification ability, and the model's explanatory measures. In this study, the non-significant Omnibus Test and the non-significant Hosmer–Lemeshow Test have different meanings. The Omnibus test evaluates the improvement of the model compared with a model without predictors, whereas the Hosmer–Lemeshow test evaluates the agreement between the observed outcomes and the model's predictions.

Coefficient of determination

The pseudo R-square coefficient of determination is used to give an indication of the model's ability to explain variation in firm value category. One of the measures available in logistic regression is the Nagelkerke R Square.

Table 4. Model Summary

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	116.877[a]	.056	.075

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Based on Table 4, a Nagelkerke R Square of 0.075 indicates that the model's explanatory power is relatively limited under this pseudo-R^2 measure. This value should not be interpreted literally in the same way as the coefficient of determination in linear regression. Substantively, the result indicates that the four variables tested are not yet sufficient to explain differences in firm value category in the model used. This limitation may be related to other factors not yet included, such as firm size, sales growth, business risk, industry characteristics, or macroeconomic conditions. These factors are possibilities for further research, not causes proven by this analysis.

Model classification accuracy

Classification ability describes the proportion of observations correctly categorized by the model based on the predicted probability values and the classification cut-off that has been set.

Table 5. Classification Table

Classification Table[a]

Observed			Predicted Y_Nilai_Perusahaan 0	Predicted Y_Nilai_Perusahaan 1	Percentage Correct
Step 1	Y_Nilai_Perusahaan	0	24	19	55.8
		1	17	28	62.2
	Overall Percentage				59.1

a. The cut value is .500

Based on Table 5, An overall classification accuracy of 59.1% indicates that the model correctly classifies about 59 out of every 100 observations. This value suggests that the model's predictive ability is still limited. However, an assessment of classification performance should not rely on overall accuracy alone. Sensitivity, specificity, and a comparison with the baseline model also need to be examined to determine the model's ability to recognize each category.

If the sample analyzed consists of 88 observations with a balanced category split, a baseline model that always chooses one category achieves 50% accuracy. However, this comparison applies only to the initial sample distribution. If the research period becomes 2021–2025, the baseline model accuracy must be calculated based on the new category distribution.

Partial coefficient testing

Partial testing is carried out through the Variables in the Equation table. This test determines whether each independent variable is statistically related to the likelihood that an observation falls into the category of firm value above the median, while controlling for the other variables in the model.

Table 6. Summary of Partial Test Results

Variable	Significance	Decision at 5%
ESG Performance	0,084	Not significant
ROA	0,364	Not significant
Leverage Ratio	0,757	Not significant
Sustainable Growth	0,982	Not significant

Based on Table 6, all four variables have significance values above 0.05. ESG Performance has a significance value of 0.084, which is relatively closer to the 0.05 threshold than the other three variables, but it is still not significant at the specified level. ROA has a significance value of 0.364, Leverage Ratio 0.757, and Sustainable Growth 0.982.

Table 7. Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	X1 ESG Performance	.051	.030	2.979	1	.084	1.052	.993	1.115
	X2 RoA	-2.471	2.723	.824	1	.364	.085	.000	17.552
	X3 Leverage Ratio	-.289	.934	.096	1	.757	.749	.120	4.675
	X4 Sustainable Growth	.035	1.589	.000	1	.982	1.036	.046	23.353
	Constant	-.845	1.115	.574	1	.449	.430		

a. Variable(s) entered on step 1: X1 ESG Performance, X2 RoA, X3 Leverage Ratio, X4 Sustainable Growth.

Based on Table 7, these results show that this study has not obtained adequate statistical evidence to state that each variable is partially related to firm value category at the 5% significance level. Because the regression coefficients and Exp(B) values are not yet available in the document, the direction of the relationship and the magnitude of the change in odds cannot be responsibly concluded from the significance values alone.

The relationship between ESG Performance and firm value category

The test results show that ESG Performance has a significance value of 0.084, which is greater than 0.05. Accordingly, the hypothesis regarding the relationship between ESG Performance and firm value category has not received adequate statistical support at the 5% significance level.

This finding indicates that the ESG score used in the model has not been shown to distinguish companies with Tobin's Q above the median from those at or below the median. This condition can serve as material for evaluating how ESG information is reflected in market valuation. Investors may consider factors beyond ESG, such as financial performance, growth prospects, business risk, and the quality of company information disclosure.

A significance value of 0.084 cannot be interpreted as evidence that ESG definitely has an effect, but it also does not prove that ESG has no relationship at all with firm value. Further interpretation requires information on the coefficient, the direction of the

relationship, and the confidence interval. Therefore, the results of this study are better understood as the absence of sufficient statistical evidence at the specified significance level.

The relationship between profitability and firm value category

ROA has a significance value of 0.364. This result indicates that profitability is not significantly related to firm value category in the model used.

Theoretically, high profitability can signal a company's ability to manage assets and generate profit. However, market valuation is not determined by current profitability alone. Investors may also consider earnings sustainability, business risk, growth prospects, and expectations about future performance.

A non-significant result may indicate that ROA alone is not sufficient to distinguish firm value categories in the research sample. In addition, using a median-based categorical dependent variable differs from using Tobin's Q as a continuous variable. Such grouping can reduce information about differences in firm value levels among observations.

The relationship between leverage and firm value category

The Leverage Ratio has a significance value of 0.757, so it does not yet show a significant relationship with firm value category at the 5% level. Conceptually, debt can provide benefits by financing investment and business development, but it also increases financial risk. The relationship between leverage and market valuation may depend on how borrowed funds are used, the ability to meet obligations, financing costs, and industry conditions.

This test result has not provided evidence that differences in leverage are significantly related to the likelihood that a company falls into the higher firm value category. However, without knowing the regression coefficient and Exp(B), it cannot be determined whether the estimated relationship is positive or negative. Accordingly, the conclusion should be limited to the statistical non-significance in the tested model. Gunawan et al. (2024) state that technological advancements result from societal progress. Technology continues to advance to meet humans' ever-changing demands, including those of accounting information systems. This study aims to determine the significance of accounting information systems in relation to the internal performance of financial auditors within a firm.

The relationship between Sustainable Growth and firm value category

Sustainable Growth has a significance value of 0.982, indicating insufficient statistical evidence of a relationship between this variable and firm value category at the 5%

significance level. Theoretically, sustainable growth reflects a company's ability to sustain business development while accounting for its internal financial capacity. Nevertheless, sustainable growth does not always lead to an increase in market valuation. The market also considers growth quality, capital efficiency, investment risk, and profit prospects. The high significance value indicates that the model has not identified a significant partial relationship between Sustainable Growth and firm value category. This result does not prove that sustainable growth is irrelevant, but it points to the need to further evaluate the operational definition, data variation, and model specification.

In Vietnam, Nguyen & La (2025) examine the growing ESG literature in emerging markets by highlighting how internal financial capacity affects the effectiveness of sustainability strategies. It also provides practical implications for managers and policymakers seeking to align ESG initiatives with value-creation goals. Liu & Lee (2026) find that the association between ESG indicators and predicted firm value persistence depends on model specification. Under linear specifications, ESG-related directional patterns are more heterogeneous across sector groups, particularly for environmental and governance indicators. By contrast, nonlinear specifications yield more consistent directional patterns. Higher environmental, social, and governance indicator scores are generally associated with longer predicted firm value persistence, with governance transparency as the main exception. Wei & Tan (2026) show that machine learning can effectively support ESG performance identification and provide useful decision-making evidence for sustainable investment and corporate governance evaluation. Mohammed Abubakr et al. (2026) advocate for sustainable financial practices, optimal capital structures, and innovation-driven strategies to maximize profitability and market valuation for corporate managers and policymakers. It contributes to the literature on sustainable finance by providing empirical evidence from an emerging market perspective and aligns with Thailand's national sustainability agenda. De Lucia et al. (2020) offer useful policy insights to strengthen CSR strategies and sustainable development practices in European public enterprises.

CONCLUSION

This study examined the relationships between Environmental, Social, and Governance (ESG) Performance, profitability, leverage, and sustainable growth and firm value categories among companies listed on the Indonesia Stock Exchange (IDX) during

2020–2025. Using 88 firm-year observations and binary logistic regression, the findings show that the four explanatory variables are not statistically significant predictors of firm value categories, either simultaneously or individually, at the 5% significance level. The Omnibus Test ($\chi^2 = 5.071$; $p = 0.280$) indicates that the proposed model does not significantly improve upon the intercept-only model. Furthermore, the individual significance values for ESG Performance ($p = 0.084$), Return on Assets ($p = 0.364$), Leverage Ratio ($p = 0.757$), and Sustainable Growth ($p = 0.982$) provide insufficient statistical evidence to support the proposed hypotheses. The model's Nagelkerke R^2 of 0.075 and classification accuracy of 59.1% indicate limited explanatory and predictive performance. Although the Hosmer–Lemeshow test ($p = 0.477$) does not indicate significant lack of fit, this result does not establish the model's overall adequacy. Collectively, these findings suggest that ESG performance and the selected financial indicators, as measured in this study, are insufficient to reliably distinguish companies with Tobin's Q above the sample median from those at or below it. From a theoretical perspective, the findings contribute to the discussion of stakeholder, agency, and signaling theories by highlighting the complexity of translating sustainability performance and financial characteristics into market-based firm valuation. The absence of statistically significant relationships does not invalidate these theoretical perspectives; rather, it suggests that their proposed mechanisms may depend on additional organizational, industry-specific, and market conditions not captured by the present model. The study also provides empirical evidence concerning the limitations of using a median-based binary classification of Tobin's Q to assess firm value. From a practical perspective, investors, corporate managers, and policymakers should avoid relying exclusively on ESG scores, profitability, leverage, and sustainable growth indicators when evaluating corporate value. A more comprehensive assessment incorporating financial resilience, governance quality, growth prospects, business risks, and market conditions may provide a stronger foundation for investment and strategic decision-making. This study has several limitations, particularly its relatively small sample of 88 firm-year observations, the potential loss of information from dichotomizing Tobin's Q, and the limited set of explanatory variables. Future research should use larger, more representative datasets; consider continuous measures of firm value; incorporate additional determinants such as firm size, liquidity, industry characteristics, and macroeconomic conditions; and apply longitudinal or panel-data approaches that account for repeated observations across companies. Further investigation of nonlinear relationships, interaction effects, and potential lagged effects of

ESG performance may also provide deeper insights into the determinants of corporate valuation. Ultimately, this study emphasizes that firm value is a multidimensional phenomenon that a limited combination of sustainability and financial indicators alone cannot adequately explain. Its principal contribution lies in identifying the limited explanatory capacity of the tested model and establishing a basis for developing more comprehensive and methodologically robust frameworks for understanding corporate valuation in emerging capital markets.

Implications of the research results

Overall, the preliminary test results show that ESG Performance, ROA, Leverage Ratio, and Sustainable Growth have not been proven to be significantly related to firm value category at the 5% significance level. The model is also not significant overall based on the Omnibus Test, and the Nagelkerke R Square indicates relatively limited explanatory power. Practically, these results indicate that firm value assessment should not rely on one or a few financial and sustainability indicators alone. Investors and management need to consider company characteristics, business prospects, risks, and market conditions more comprehensively. For future research, adding relevant variables and evaluating firm-value measurement can improve model quality.

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