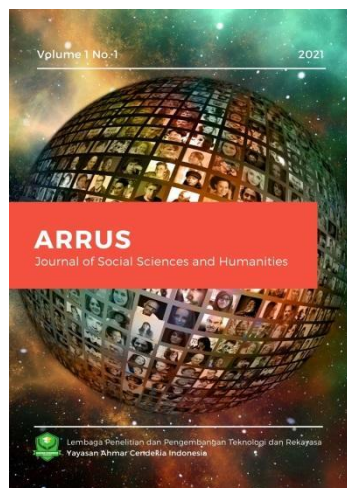




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RESEARCH ARTICLE

The Moderating Effect of Profitability on the Impact of ESG Risk Rating on Firm Value: ESG Leaders Index

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Abstract: Environmental, Social, and Governance (ESG) practices have become an important consideration for investors in evaluating corporate sustainability and long-term value creation. This study aims to examine the effect of ESG Risk Rating on firm value and to investigate the moderating role of profitability in this relationship. This study employed a quantitative research approach using a causal-associative design. The research sample consisted of 18 companies consistently included in the IDX ESG Leaders Index during the 2022–2025 period, resulting in 72 firm-year observations selected through purposive sampling. Secondary data were collected from annual reports, financial statements, and Morningstar Sustainalytics ESG Risk Ratings. Firm value was measured using Price-to-Book Value (PBV), profitability was proxied by Return on Equity (ROE), and the hypotheses were tested using Moderated Regression Analysis (MRA) with IBM SPSS Statistics version 31. The results demonstrate that ESG Risk Rating has a significant effect on firm value. Furthermore, profitability significantly moderates the relationship between ESG Risk Rating and firm value by weakening the influence of ESG Risk Rating on market valuation. These findings indicate that although ESG risk information is considered by investors, firms with stronger financial performance tend to rely more on profitability signals than on sustainability risk information in determining market value. The findings support stakeholder theory and signaling theory by demonstrating that ESG information serves as an important market signal, although its influence becomes relatively less dominant when firms exhibit higher profitability. The results also provide practical implications for corporate managers in balancing sustainability initiatives with financial performance to enhance firm value and strengthen investor confidence.

Keywords: ESG Risk Rating, Firm Value, IDX ESG Leaders Index, Profitability, Price-to-Book Value, Return on Equity.

1. Introduction

As attention toward sustainability issues grows, business sustainability has emerged as a strategic factor considered by both regulators and investors when assessing a company's prospects and value. In response to this trend, the Indonesia Stock Exchange launched the ESG Leaders Index on December 14, 2022. This index comprises listed companies with the lowest ESG risk scores based on Morningstar Sustainalytics assessments that are free from significant controversies and demonstrate adequate trading liquidity and financial performance (Aditya & Nainggolan, 2022). These rigorous selection criteria make the index



a relevant tool for examining whether ESG quality is truly reflected in the market valuation of Indonesian companies.

However, the performance of the ESG Leaders Index has lacked stability in recent periods. CEIC data indicates that the index reached an all-time high of 167.237 in August 2024 but subsequently declined to 146.830 in January 2026 (CEIC Data, 2026). These fluctuations raise the question of whether the low ESG risk scores of these top-performing companies consistently contribute to increased firm value, or if other factors specifically financial performance play a more dominant role in shaping market perception (Consolandi et al., 2022). This question is particularly significant given that empirical results from previous studies remain inconclusive.

Several studies in Indonesia indicate that ESG Risk Ratings do not necessarily have a significant impact on firm value. Rahayu & Sanjaya, (2024) found that ESG risk does not affect firm value in Indonesia. Similar findings were reported by Sadiq et al., (2020) regarding companies included in the ESG Leaders Index; they found that ESG risk did not significantly influence firm value, although CEO characteristics were shown to strengthen this relationship. Conversely, other studies have yielded different results. Ashari & Rahmawati, (2025) found that ESG scores have a positive and significant impact on firm value, with profitability acting as a moderator in this relationship. These divergent findings suggest that the impact of ESG on firm value remains context-dependent and has not yet led to a consensus.

Inconsistencies are also evident regarding the role of profitability as a moderating variable. Makridou et al., (2024) found that the interaction between ESG disclosure and ROA had no significant effect on firm value in the energy sector. Conversely, Surya et al., (2024) demonstrated that profitability measured by ROA moderates the impact of ESG on firm value in the mining sector. Meanwhile, (Nassar & Al Twerqi, 2021), using ROE as a proxy for profitability, did not find a significant moderating effect. These divergent findings indicate that the role of profitability requires further examination, particularly among companies with superior ESG characteristics, such as constituents of the ESG Leaders Index.

This study is grounded in stakeholder theory and signaling theory. Stakeholder theory posits that companies bear responsibility not only to shareholders but also to other interested parties, such as employees, the community, and the environment. From this perspective, ESG practices reflect a company's efforts to meet the expectations of a broader range of stakeholders. Meanwhile, signaling theory explains that the disclosure of credible information can reduce information asymmetry between companies and investors. In this context, a low ESG Risk Rating can be viewed as a positive signal, though the strength of this signal tends to be more effective when supported by strong profitability. Therefore, this study examines the impact of ESG Risk Ratings on firm value and the role of profitability as a moderating variable among companies listed on the ESG Leaders Index during the 2022–2025 period.

2. Literature Review

Stakeholder theory, as proposed by Freeman (1984), posits that companies operate within a network of interdependent relationships with various parties, rather than functioning solely as profit-generating entities for shareholders (Bakker et al., 2022). Within this framework, a company's success is measured not only by profitability but also by its ability to maintain harmonious relationships with stakeholders. Companies capable of balancing stakeholder interests tend to gain greater legitimacy, trust, and support, thereby increasing their prospects for achieving business sustainability.

In the context of ESG, stakeholder theory provides a conceptual basis for explaining the importance of a company's attention to environmental, social, and governance aspects. ESG practices demonstrate that companies are not solely focused on short-term profits but also strive to meet broader stakeholder expectations. When a company effectively manages ESG

risks, its relationships with stakeholders are strengthened, ultimately enhancing its reputation and market value.

Signaling theory, introduced by Spence (1973), explains that under conditions of information asymmetry, companies need to convey credible signals to investors to reduce uncertainty in decision-making. These signals may consist of financial or non-financial information reflecting the company's condition and prospects (Naveed et al., 2020). Investors interpret these signals as a basis for assessing the company's quality; thus, the more credible the signal, the greater the likelihood of a positive market response.

In this study, the ESG Risk Rating is positioned as a signal reflecting a company's sustainability and governance quality. A low ESG Risk Rating indicates lower sustainability risk and a superior ability to manage ESG issues. However, the credibility of the ESG signal does not stand alone; investors tend to place greater trust in ESG signals when a company also demonstrates strong financial performance, as high profitability indicates the capacity to execute sustainability strategies consistently and sustainably.

Research findings regarding the relationship between ESG Risk Ratings and firm value remain inconsistent. Natalia et al., (2025) found that ESG Risk Ratings have no effect on firm value in Indonesia. Similar findings were reported by (Menla Ali et al., 2024) regarding companies in the ESG Leaders Index, showing that ESG risk does not significantly impact firm value, although CEO characteristics can strengthen this relationship. These results indicate that ESG information is not necessarily viewed immediately as a material factor by investors in the Indonesian capital market.

Conversely, several studies indicate different results. Yu & Xiao, (2022) found that the ESG score has a positive and significant impact on firm value, and that profitability moderates this relationship. Cohen, (2023) also reported that, although the ESG Risk Rating does not significantly affect firm value, profitability and growth opportunities exert a significant positive influence. These divergent findings suggest that the impact of ESG on firm value remains heavily influenced by sample characteristics, industrial sectors, and the observation period.

Profitability is often viewed as a factor capable of strengthening or weakening the influence of ESG on firm value. Theoretically, highly profitable companies possess greater resources to consistently implement sustainability practices. Furthermore, profitability signals a healthy financial position, thereby fostering greater investor confidence. Consequently, profitability can serve as a moderating variable in the relationship between ESG Risk Rating and firm value.

However, empirical findings regarding the moderating role of profitability remain mixed. Zulfa & Purnamasari, (2025) found that profitability moderates the relationship between determinants and firm value among companies in the ESG Leaders Index. Wulanningrat & Hadiprajitno, (2025) also demonstrated that profitability measured by ROA moderates the impact of ESG on firm value in the mining sector. Conversely, studies by (Rahmawati et al., 2024) in the energy sector and (Ningsi, 2021) in the mining sector using ROE as a proxy for profitability did not find a significant moderating effect. These inconsistencies indicate that the role of profitability requires further examination, particularly for companies with superior ESG characteristics, such as those in the ESG Leaders Index.

The ESG Risk Rating is a sustainability risk measure issued by Morningstar Sustainalytics to assess a company's level of exposure to ESG risks and its ability to manage those risks. A lower ESG Risk Rating score indicates a superior level of risk management. Meanwhile, firm value reflects the market's perception of a company's prospects and is proxied in this study by the Price-to-Book Value (PBV) ratio. PBV indicates the extent to which the market values the company relative to its book value.

In this study, profitability is proxied by Return on Equity (ROE), a ratio that measures a company's ability to generate net profit from shareholders' equity. ROE was selected because

it reflects the company's ability to deliver returns to investors while also indicating its financial capacity to support ESG practices. Therefore, ROE is relevant for examining whether profitability strengthens or weakens the impact of the ESG Risk Rating on firm value.

Based on stakeholder theory and signaling theory, companies with low ESG Risk Rating scores should send a positive signal to investors regarding their governance quality and sustainability. Such a signal has the potential to enhance firm value, as investors tend to assign a higher valuation to companies perceived as responsible toward stakeholders and capable of managing risk effectively. However, this effect is expected to be stronger when supported by high profitability, given that profitable companies are viewed as better able to consistently implement sustainability strategies. Based on this reasoning, the first hypothesis is formulated as follows:

H1: ESG Risk Rating affects firm value for companies on the ESG Leaders Index.

Furthermore, profitability is hypothesized to moderate the relationship between the ESG Risk Rating and firm value, as high profitability indicates a company's capacity to support sustainability strategies and enhances investor confidence in the ESG signals provided. Thus, the second hypothesis is formulated as follows:

H2: Profitability moderates the effect of the ESG Risk Rating on firm value for the ESG Leaders Index.

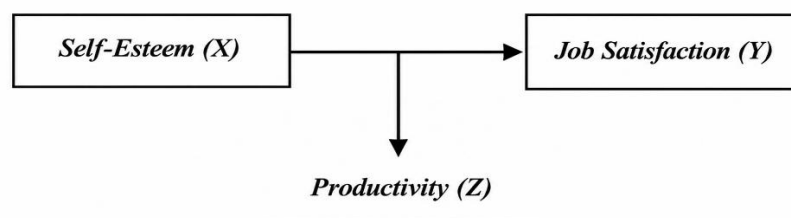


Figure 1. Research Model

Source: Data processed by the researcher, 2026

3. Research Method and Materials

This study employs a quantitative approach with a causal-associative design to examine the impact of ESG Risk Ratings on firm value, with profitability serving as a moderating variable. Secondary data were obtained from the Indonesia Stock Exchange (IDX) including financial statements, annual reports, and ESG Risk Ratings (derived from a collaboration with Morningstar Sustainalytics) as well as official company websites. The study utilizes year-end (December) ESG Risk Rating scores to ensure consistency with the annual financial reporting period.

The study population consists of all companies included in the IDX ESG Leaders Index for the 2022–2025 period. The sample was selected using purposive sampling based on the following criteria: consistent listing on the index, publication of complete financial and annual reports, and availability of ESG Risk Rating data throughout the study period. Based on these criteria, 18 companies were selected, resulting in 72 observations (18 companies × 4 years). Firm value is proxied by Price to Book Value (PBV), profitability by Return on Equity (ROE), and ESG Risk Rating by Sustainalytics scores.

Data analysis was conducted using IBM SPSS Statistics version 31. The analysis stages included descriptive statistics, classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation), and hypothesis testing via the t-test, F-test, and coefficient of determination (Azis & Rahim, 2025) and (Kaulika & Imronudin, 2025). The moderating effect was analyzed using Moderated Regression Analysis (MRA) via an

interaction variable between ESG Risk Rating and ROE, based on the equation: $PBV = \alpha + \beta_1 \text{ESGRisk} + \beta_2 \text{ROE} + \beta_3 (\text{ESGRisk} \times \text{ROE}) + e$. The coefficient β_3 was used to determine the significance of the moderating effect.

4. Results And Discussion

4.1. Descriptive Statistics

Table 1 presents descriptive statistics for the research variables, comprising the ESG Risk Rating, firm value (proxied by Price to Book Value/PBV), and profitability (proxied by Return on Equity/ROE) based on 72 observations of companies included in the ESG Leaders Index during the study period.

Table 1. Descriptive Statistics Results

Categories	N	Minimum	Maximum	Mean	Std. Deviation
ESG RISK RATING	72	9.47	29.28	19.8851	4.64262
PBV	72	.36	44.86	3.9540	8.02601
ROE	72	.00	1.71	.2270	.32301
Valid N (listwise)	72				

Based on Table 1, the ESG Risk Rating has a mean value of 19.89 with a standard deviation of 4.64, indicating that the sample companies generally fall within the Low Risk to Medium Risk categories regarding ESG risk management. Firm value (PBV) has a mean of 3.95 with a standard deviation of 8.03, suggesting variation in market valuation among the sample companies. Meanwhile, profitability (ROE) shows a mean of 22.70% with a standard deviation of 0.32, indicating that the sample companies are generally capable of generating a relatively good return on equity. Overall, these descriptive statistics demonstrate that the research data exhibits sufficient variation for analyzing the impact of ESG Risk Rating on firm value, with profitability serving as a moderating variable.

4.2. Classical Assumption Tests

Before conducting the regression analysis, classical assumption tests are performed to ensure that the regression model meets the requirements of the Ordinary Least Squares (OLS) method. The classical assumption tests conducted include tests for normality, multicollinearity, heteroscedasticity, and autocorrelation. These tests aim to ensure that the regression model yields estimates that are unbiased, consistent, and reliable.

Table 2. Normality Test Results

Test Method	Statistic	Sig. Value	Decision
Kolmogorov-Smirnov	0.076	0.200	Residuals are normally distributed

Normality testing was conducted using the One-Sample Kolmogorov-Smirnov (K-S) method. The test results yielded an Asymp. Sig. (2-tailed) value of 0.200, which is greater than the significance level of 0.05. Therefore, the regression model residuals are considered to be normally distributed. With the normality assumption satisfied, the regression model is deemed statistically suitable for further analysis and interpretation.

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF	Decision
ESG Risk Rating	0.999	1.001	No multicollinearity
ROE	0.999	1.001	No multicollinearity

The results of the multicollinearity test are presented in Table 3. The ESG Risk Rating and Return on Equity (ROE) variables have Tolerance values of 0.999 and Variance Inflation Factor (VIF) values of 1.001, respectively. Tolerance values greater than 0.10 and VIF values less than 10 indicate the absence of multicollinearity among the independent variables in the regression model. Furthermore, VIF values close to 1 suggest that the correlation between independent variables is relatively low; thus, the regression model satisfies the assumption regarding multicollinearity.



Table 4. Heteroskedasticity Test Results

Test Method	Variable	Sig. Value	Decision
Glejser	<i>ESG Risk Rating</i>	0.232	No heteroskedasticity
	ROE	0.100	No heteroskedasticity

The results of the heteroscedasticity test are presented in Table 4. Testing using the Glejser method indicates that the ESG Risk Rating and Return on Equity (ROE) variables have significance values of 0.232 and 0.100, respectively. Significance values greater than 0.05 for both variables indicate that the regression model does not exhibit heteroscedasticity. Consequently, the residual variance is constant (homoscedastic), meaning the regression model satisfies the assumption regarding heteroscedasticity.

Table 5. Autocorrelation Test Results

Test Method	Statistic	Decision
Durbin-Watson	1.950	No autocorrelation

The autocorrelation test results are presented in Table 5. Testing using the Durbin–Watson (DW) statistic yielded a value of 1.950. This value falls within the range indicating the absence of autocorrelation specifically, $1.6751 < 1.950 < 2.3249$ ($4 - d_u$). These results indicate that the regression model does not exhibit autocorrelation (either positive or negative), thereby satisfying the assumption regarding autocorrelation.

4.3. Coefficient of Determination Test

Table 6. Results of the Coefficient of Determination Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804 ^a	.646	.636	.6170

The results of the coefficient of determination test are presented in Table 6. The Adjusted R-squared value of 0.636 indicates that the Moderated Regression Analysis (MRA) model is capable of explaining 63.6% of the variation in firm value proxied by Price to Book Value (PBV) through the ESG Risk Rating variable and its interaction with profitability, proxied by Return on Equity (ROE). Meanwhile, 36.4% of the variation in firm value is explained by factors outside the research model.

4.4. Moderated Regression Analysis (MRA) Test

Table 7. Results of Moderated Regression Analysis (MRA)

Table 7. Results of Moderated Regression Analysis (MRA)						
Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.240	.871		-3.719	<.001
	ESG RISK RATING	2.568	.316	.627	8.126	<.001
	ESG RISK RATING*ROE	-1.405	.138	-.789	-10.216	<.001

The results of the Moderated Regression Analysis (MRA) are presented in Table 7. The ESG Risk Rating variable has a regression coefficient of 2.568, with a calculated t-value exceeding the critical t-value ($8.126 > 1.994$) and a significance level of < 0.001 ; this indicates that ESG Risk Rating has a significant effect on firm value, and thus H1 is accepted. The interaction variable ESG Risk Rating $\times$ ROE has a regression coefficient of -1.405 , with a t-value of -10.216 and a significance level of < 0.001 . These results demonstrate that profitability moderates the effect of ESG Risk Rating on firm value, and thus H2 is accepted. The negative interaction coefficient indicates that profitability weakens the effect of ESG Risk Rating on firm value.

4.5. F Test

Table 8. F-test Results

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.962	2	23.981	62.990	<.001 ^b
	Residual	26.269	69	.381		
	Total	74.231	71			

The F-test results are presented in Table 8. The calculated F-value of 62.990 which exceeds the F-table value ($62.990 > 3.13$) with a significance level of < 0.001 indicates that the regression model is simultaneously significant. Thus, the research model is suitable for explaining the relationship between ESG Risk Rating, profitability, and firm value.

The research results demonstrate that the ESG Risk Rating has a significant impact on firm value; thus, H_1 is accepted. These findings indicate that ESG risk constitutes relevant information for investors when valuing companies included in the ESG Leaders Index. The lower a company's ESG risk, the more positive the market's perception regarding its governance quality, risk management capabilities, and sustainability prospects, leading to a tendency for firm value to rise. Theoretically, these results support signaling theory, as the ESG Risk Rating serves as a signal reflecting the company's quality to investors, while also aligning with stakeholder theory, which emphasizes the importance of meeting stakeholder expectations (Qu & Su, 2024).

Empirically, these findings differ from those of (Aldieri et al., 2023) and (Shobhwani & Lodha, 2023), who found no significant effect of ESG Risk Ratings on firm value. This discrepancy can be explained by the characteristics of the research samples. Companies included in the ESG Leaders Index are issuers with relatively superior ESG quality; consequently, information regarding ESG risk is more readily captured and acted upon by the market (Ademi & Klungseth, 2022). Thus, the context of a leading ESG index enhances the relevance of ESG Risk Ratings as a basis for investor valuation (Zhang et al., 2026).

The research results also indicate that profitability proxied by ROE moderates the impact of the ESG Risk Rating on firm value; thus, H_2 is accepted. The negative interaction coefficient reveals that profitability weakens the influence of the ESG Risk Rating on firm value. These findings suggest that for companies with higher profitability, the impact of ESG information on firm value formation is relatively diminished, as market valuation is more strongly underpinned by financial performance (Moussa et al., 2024). In other words, high profitability directs investor attention toward the company's profit-generating capacity, thereby tending to reduce the role of the ESG Risk Rating in shaping market perception.

Theoretically, these results remain consistent with signaling theory, as profitability also serves as a strong signal of corporate quality to investors. These findings align with (Yeye & Egbunike, 2023) and (Lina & Rinaldy, 2025), which indicate that profitability plays a role in moderating the relationship between ESG and firm value. However, these results differ from those of (Hapsoro & Falih, 2020) and (Vural-Yavaş, 2021), who did not find a moderating effect of profitability. Such discrepancies may be attributed to variations in industry sectors, observation periods, and the profitability proxies employed.

5. Conclusion

The empirical findings demonstrate that ESG Risk Rating significantly influences firm value among companies included in the IDX ESG Leaders Index. This finding suggests that investors increasingly recognize sustainability risk information as an important component of corporate valuation. Companies capable of maintaining lower ESG risk are perceived as having stronger governance systems, more effective environmental management, and greater social responsibility, thereby enhancing investor confidence and increasing market valuation. These results are consistent with stakeholder theory, which argues that firms create long-term value by balancing the interests of multiple stakeholders rather than focusing solely on



shareholder wealth. Effective ESG management strengthens corporate legitimacy and fosters sustainable competitive advantages.

The findings also support signaling theory. ESG Risk Rating serves as a credible non-financial signal that reduces information asymmetry between managers and investors. Companies demonstrating lower ESG risk communicate their commitment to sustainability and responsible business practices, encouraging positive investor responses. As sustainability becomes increasingly integrated into investment decision-making, ESG-related information functions as an additional quality signal complementing traditional financial indicators.

However, this study further reveals that profitability weakens the influence of ESG Risk Rating on firm value. This finding implies that investors assign relatively greater importance to financial performance when firms generate high profitability. Under such circumstances, strong earnings become the dominant signal influencing market valuation, thereby reducing the incremental contribution of ESG information. In contrast, for firms with relatively lower profitability, ESG performance may become a more important source of differentiation because investors rely more heavily on sustainability information to assess long-term corporate prospects.

This moderating effect highlights the complementary nature of financial and sustainability performance. Rather than substituting each other, profitability and ESG information jointly shape investor perceptions under different corporate conditions. Managers should therefore avoid treating sustainability initiatives as separate from financial objectives. Instead, ESG implementation should be integrated into broader corporate strategies aimed at achieving both sustainable development and superior financial performance.

From a managerial perspective, the findings indicate that companies should continuously improve ESG risk management while maintaining healthy profitability. Strong financial performance alone may not guarantee sustainable competitive advantage if accompanied by weak ESG practices. Likewise, excellent ESG performance without adequate profitability may not generate optimal market valuation. Therefore, balancing sustainability performance with financial performance becomes essential for enhancing firm value and maintaining investor confidence in increasingly sustainability-oriented capital markets.

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