

# The Effects of ESG on Firm Value with Profitability as a Moderation Variable in Sensitive and Non-Sensitive Industries

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## ABSTRACT

The increasing importance of ESG in corporate strategy and investment decisions, combined with mixed empirical evidence and limited context-specific studies in developing countries like Indonesia, is a concern. The study aims to explore whether ESG disclosure has different short-term and long-term effects and whether profitability moderates the ESG and firm value causality relationship. The study employs panel data regression across four models to examine short- and long-term effects in sensitive and non-sensitive industries. The findings indicate that ESG components do not have consistent direct effects on firm value across industries and time horizons, with only limited evidence of a negative impact of governance in the long-term non-sensitive industry. However, profitability plays a significant moderating role, particularly in non-sensitive industries, where environmental and social interactions become significant in the long term, and social in the short term. In sensitive industries, only governance shows a significant moderating effect in the short term, while no individual moderating effects persist in the long term despite joint model significance. These findings imply that ESG strategies should be implemented in alignment with firm profitability and industry context, as their value relevance emerges primarily through interaction effects rather than as standalone factors.

**Keywords:** Corporate Finance, ESG Disclosure, Firm Value, Indonesian Firms, Profitability.

## INTRODUCTION

Along with economic development, the firm's paradigm has shifted towards the corporate form. In the corporate paradigm, there is a separation between ownership and control of the firm. Separation makes the management of the firm carried out by professionals. In public firms, firm value reflects the market's perception of economic performance and future prospects, shaped by evaluations from investors and stakeholders (Sholihin & Anggraini, 2021). It serves as an indicator of long-term performance expectations and market confidence in business sustainability, as supported by prior studies (Lonkani, 2018; Sasidharan, 2020).

Environmental, Social, and Governance (ESG) has become an essential factor in evaluating firms' policies, prospects, and long-term sustainability, and is increasingly embedded in corporate strategy to enhance competitiveness and resilience in alignment

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with the Sustainable Development Goals (SDGs) agenda (Rahmiyati, 2025). Investors also place greater emphasis on ESG practices due to their influence on both financial performance and ethical considerations, alongside rising global commitments to environmental sustainability, including climate finance initiatives in Southeast Asia (Starks, 2021; Khamisu & Paluri, 2024; Segal, 2024; Reuters, 2024). Socially, firms contribute to poverty reduction and SDG financing, particularly amid an estimated US\$4.2 trillion funding gap and declining public funding (Brubaker & Spencer, 2024). Governance quality is further associated with higher firm value by Tripathi et al. (2024), while ESG effects are strengthened through mechanisms such as customer satisfaction by Seok et al. (2024) and green innovation quality by Bai et al. (2024).

Indonesia's high economic, cultural, and political diversity creates opportunities for regional integration, including in the context of ESG (Ardiyanto et al., 2025; Lusy et al., 2025). However, as a developing country, it faces challenges such as inequality, poverty, and limited production capacity, requiring ESG factors to be addressed in an integrated manner to ensure long-term sustainability. Inadequate governance may also cause environmental policies to negatively impact vulnerable social groups (ASEAN-Korea Centre, 2023). Prior studies in Indonesia have examined ESG and firm value across various sectors and variables, reflecting growing academic attention to this issue (Qoyum et al., 2022; Agustina & Barokah, 2024; Rahmatullah & Hakam, 2025; Ridwan & Alghifari, 2025; Soetanto & Agustia, 2025; Wahyuningrum et al., 2025).

Indonesia's position in the ESG regulation intensity map in Southeast Asia reflects a relatively balanced profile, with strong scores in ESG policy frameworks, governance, and ESG agreements (each scoring 7), while ESG investment remains moderate (4), social performance is mid-range (5), and the environmental dimension is notably the weakest (2) (ASEAN-Korea Centre, 2023). Based on Figure 2, at the regional level, ASEAN's SDG indicators show the environmental pillar as the most achieved, followed by governance, economic, and social dimensions, although social and governance pillars still require significant attention (ASEAN-WGSDGI, 2025). Despite some firms demonstrating strong ESG performance, Indonesia's ESG standing remains relatively low compared to other ASEAN countries, with Thailand leading the region in overall ESG implementation.

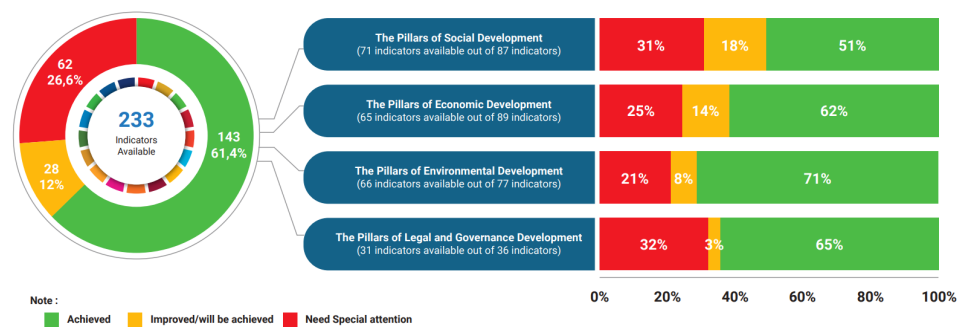


Figure 1. ASEAN's SDGs Indicator Achievement

Prior studies on ESG and firm value have provided mixed and incomplete evidence, leaving several important gaps. Existing research primarily focuses on the direct relationship between ESG scores and firm value, with limited attention to value volatility and firm resilience under uncertain conditions (Chen et al., 2024; Kheshtmasjedi, 2024). There is also a lack of differentiation between short-term and long-term impacts, despite evidence suggesting that ESG initiatives may generate initial costs but yield benefits over time (Seok et al., 2024; Wang et al., 2024; Tan et al., 2024). Additionally, empirical evidence from developing countries remains limited, and few studies explicitly compare socio-environmentally sensitive and non-sensitive industries. This study aims to address these gaps by providing a comprehensive and context-sensitive analysis of ESG disclosure

and firm value. Specifically, it examines both the short-term and long-term effects of environmental, social, and governance disclosures on firm value, while distinguishing between sensitive and non-sensitive industries with profitability as a moderating variable.

## **LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT**

### **The Effect of Environmental Disclosure on Firm Value**

The effect of environmental disclosure related to theories such as the capital structure concept, corporate governance theory, and stakeholder theory (Mahoney, 2012; Zeitoun & Osterloh, 2012). In relevance to hypothesis 1, within the Theory of the Firm framework, firm value reflects the market's response to a firm's strategic policies. From the perspective of Agency Theory and Signaling Theory, environmental disclosure is perceived as a mechanism to reduce information asymmetry and as a signal of management's commitment to sustainability, thus positively influencing firm value (Spence, 1973; Jensen & Meckling, 1976). A firm's attention to environmental issues influences stakeholder perceptions and support, so that ESG policies become part of the policy of managing relationships with stakeholders, which has a positive influence on firm value (Freeman, 1984).

Furthermore, Disclosure Theory explains that disclosing environmental information is a means of strategic communication to the market, including increasing firm value (Cerf, 1961; Choi, 1973). However, in accordance with Contingency Theory and Resilience Theory, the impact of such disclosures can differ in the short and long term, as well as between socio-environmentally sensitive and non-sensitive industries, related to the firm's internal analysis of whether to take prospective or defensive policies, financial and non-financial policies, and the willingness of companies to get involved in sustainability issues (Miles et al., 1978; Donaldson, 2001; Martos-Pedrero et al., 2025). Previous research has shown that there is a positive relationship between environmental factors and firm value (Chen et al., 2024; Qian et al., 2024; An et al., 2025).

H1a: Environmental disclosure has a significant effect on firm value in the short term for non-sensitive industries.

H2a: Environmental disclosure has a significant effect on firm value in the short term for the sensitive industry.

H3a: Environmental disclosure has a significant effect on firm value in the long term for non-sensitive industries.

H4a: Environmental disclosure has a significant effect on firm value in the long term for the sensitive industry.

### **The Effect of Social Disclosure on Firm Value**

One aspect observed by stakeholders is a firm's commitment to sustainability and social welfare. Within the Theory of the Firm framework, a firm's value reflects the market's perception of the firm's performance and prospects. Market perceptions are formed through the firm's interactions with stakeholders, as explained in Stakeholder Theory. Through Signaling Theory, social disclosure signals management's commitment to corporate social responsibility. Although social disclosure can increase investment costs in the short term, social policies have the potential to strengthen a firm's image. A firm's image drives consumer loyalty, investment interest, and stakeholder support (Gozgor et al., 2024).

The effect of social disclosure can be explained through Agency Theory and Resilience Theory, both of which highlight the importance of transparency in fostering stakeholder trust and strengthening a firm's ability to withstand challenges. Empirical evidence indicates that Indonesia's social performance remains at a moderate level, with a score of 5 out of 9 (Elbardan et al., 2023; Gozgor et al., 2024; Wang et al., 2024). Consistent with this, prior studies such as Aydoğmuş et al. (2022) and Suretno et al. (2022) find that social disclosure has a highly significant positive relationship with firm value, suggesting that

increased social engagement and transparency attract investor interest and contribute to higher firm valuation.

H1b: Social disclosure has a significant effect on firm value in the short term for non-sensitive industries.

H2b: Social disclosure has a significant effect on firm value in the short term for the sensitive industry.

H3b: Social disclosure has a significant effect on firm value in the long term for non-sensitive industries.

H4b: Social disclosure has a significant effect on firm value in the long term for the sensitive industry.

### **The Effect of Governance Disclosure on Firm Value**

The Theory of the Firm explains that companies are no longer dependent on ownership by a particular party and are not limited to a certain firm size. The separation between ownership and control (which is also discussed in Agency Theory, Contingency Theory, and Governance Theory) has implications for the need for companies to prioritize aspects of governance, as a form of awareness, well-monitored performance, transparency and accountability, which will provide confidence to shareholders, lenders, and other stakeholders that the firm is well managed, as discussed in Stakeholder Theory and Signaling Theory (Spence, 1973; Jensen & Meckling, 1976). Good governance minimizes the risk of poor management, and governance disclosure can be a signal that increases demand for shares and requests for loans from investors.

Effective corporate governance is widely expected to enhance firm value by strengthening oversight and improving decision-making processes (Seok et al., 2024). Governance mechanisms, including the role of analysts, contribute to value creation by monitoring management, improving the quality and dissemination of information, and increasing investor awareness and confidence (Huang et al., 2020). In addition, a more balanced distribution of power among major shareholders, often referred to as contestability, has been shown to improve financial performance by reducing agency problems (Jara et al., 2019). However, despite these benefits, firms with higher ESG scores may also experience greater value volatility, indicating mixed market responses (Chen et al., 2024).

H1c: Governance disclosure has a significant effect on firm value in the short term for non-sensitive industries.

H2c: Governance disclosure has a significant effect on firm value in the short term for the sensitive industry.

H3c: Governance disclosure has a significant effect on firm value in the long term for non-sensitive industries.

H4c: Governance disclosure has a significant effect on firm value in the long term for the sensitive industry.

### **Profitability as a Moderating Variable**

In capital markets that consider sustainability, investors consider a firm's financial performance and its policies in relation to the environment. Investors and stakeholders also pay attention to the environmental impact of a firm's operations, in accordance with stakeholder theory and disclosure theory (Choi, 1973; Freeman, 1984). Companies that disclose social information will be perceived as more valuable by the market, and corporate profitability can strengthen this relationship. Previous research supports the above theories by explaining the link between ESG and corporate performance (profitability, market ratios), including the explanation that profitability moderates the effect of social disclosure on firm value (Starks, 2021; Aydoğmuş et al., 2022; Khamisu & Paluri, 2024; Rahmah et al., 2024; Alkaraan, 2024).

Companies with governance disclosures will send signals to stakeholders regarding their perceptions of the firm's performance and prospects. Profitability will also be linked to governance and firm value, according to previous research by Starks (2021) and Rahmah et al. (2024). A study by Ali et al. (2024) in Pakistan found that profitability moderated the positive effect of corporate governance on the sustainability and completeness of Corporate Social Responsibility (CSR) reporting. The combined effect of ESG and ROA generates a meaningful signal for the market. Such signals are essential for investors, stakeholders, and other decision-makers to better understand and justify their decisions (Connelly et al., 2025).

H1d: Profitability moderates the effect of environmental disclosure on firm value in the short term for non-sensitive industries.

H2d: Profitability moderates the effect of environmental disclosure on firm value in the short term for the sensitive industry.

H3d: Profitability moderates the effect of environmental disclosure on firm value in the long term for non-sensitive industries.

H4d: Profitability moderates the effect of environmental disclosure on firm value in the long term for the sensitive industry.

H1e: Profitability moderates the effect of social disclosure on firm value in the short term for non-sensitive industries.

H2e: Profitability moderates the effect of social disclosure on firm value in the short term for the sensitive industry.

H3e: Profitability moderates the effect of social disclosure on firm value in the long term for non-sensitive industries.

H4e: Profitability moderates the effect of social disclosure on firm value in the long term for the sensitive industry.

H1f: Profitability moderates the effect of governance disclosure on firm value in the short term for non-sensitive industries.

H2f: Profitability moderates the effect of governance disclosure on firm value in the short term for the sensitive industry.

H3f: Profitability moderates the effect of governance disclosure on firm value in the long term for non-sensitive industries.

H4f: Profitability moderates the effect of governance disclosure on firm value in the long term for the sensitive industry.

### **Simultaneous Effect on Firm Value**

The simultaneous effect of Environmental, Social, and Governance (ESG) disclosures on firm value can be understood through the integration of multiple theoretical perspectives. Within the Theory of the Firm, firm value reflects how the market evaluates a firm's overall strategic orientation, including its sustainability practices. Agency Theory and Signaling Theory suggest that ESG disclosure reduces information asymmetry and provides credible signals regarding managerial quality and long-term commitment (Spence, 1973; Jensen & Meckling, 1976). From a Stakeholder Theory perspective, ESG represents a comprehensive approach to managing relationships with various stakeholders, which collectively influence market perception and firm value (Freeman, 1984). Disclosure Theory further supports this view by emphasizing ESG reporting as a strategic communication tool that enhances transparency and potentially increases firm value (Cerf, 1961; Choi, 1973).

However, the overall impact of ESG on firm value is not always uniform, as highlighted by Contingency and Resilience theories. The effectiveness of ESG practices depends on contextual factors such as industry characteristics, time horizon, and firm strategy (Miles et al., 1978; Donaldson, 2001). While prior studies generally find a positive relationship between ESG and firm value, the combined ESG effect may also produce varying market responses, including increased volatility in firms with high ESG scores (Chen et al., 2024). This indicates that ESG should be viewed as an integrated and

conditional mechanism, where its value relevance emerges when all dimensions operate collectively rather than individually.

H1g: ESG disclosure has a significant simultaneous effect on firm value in the short term for non-sensitive industries.

H2g: ESG disclosure has a significant simultaneous effect on firm value in the short term for the sensitive industry.

H3g: ESG disclosure has a significant simultaneous effect on firm value in the long term for non-sensitive industries.

H4g: ESG disclosure has a significant simultaneous effect on firm value in the long term for the sensitive industry.

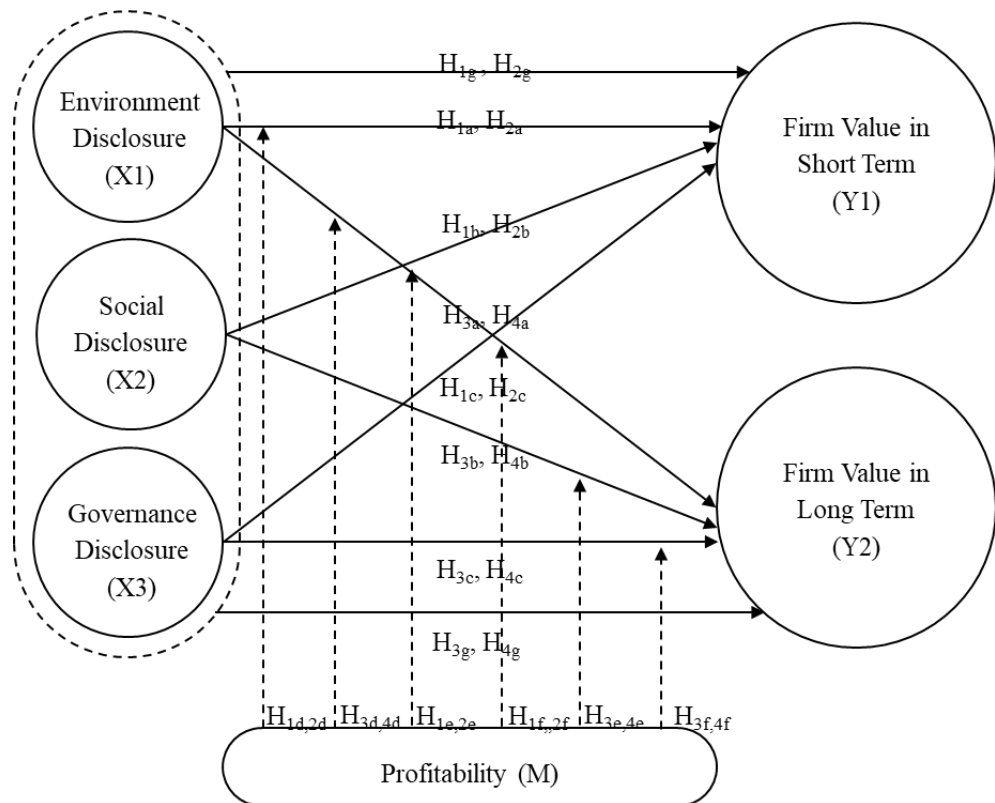


Figure 2. Research Model

According to Figure 2, this study develops a comprehensive research framework to examine the impact of ESG disclosure on firm value across different contexts. Specifically, the model investigates the direct effects of environmental, social, and governance disclosures on firm value, differentiated by time horizon (short-term and long-term) and industry type (sensitive and non-sensitive). In addition, profitability is incorporated as a moderating variable to assess whether it strengthens or weakens the relationship between each ESG dimension and firm value under varying conditions. Beyond partial effects, the framework also evaluates the simultaneous influence of ESG disclosure as an integrated construct on firm value. The model emphasizes that the relationship between ESG and firm value is multidimensional, conditional, and context-dependent, shaped by both internal performance (profitability) and external industry characteristics.

## RESEARCH METHODS

This research is based on quantitative research with hypothetical testing. The research hypothesis is built on theory and supported by empirical evidence. This research is an

explanatory research type because it aims to explain the relationship between variables. The population of this study is public companies listed on the Indonesia Stock Exchange. Of the 63 industries, there are 6 industry groups that are sensitive to socio-environmental aspects, and 57 other industry groups are non-sensitive to socio-environmental aspects (Richardson & Welker, 2001; Garcia et al., 2017).

The sampling technique in this study is purposive sampling. In this study, the sample criteria are that issuers operate in the non-financial sector, issuers with the availability of ESG disclosure information, issuers with the availability of information to measure Tobin's Q ratio and profitability, and issuers listed on the Indonesia Stock Exchange for at least one year in the range 2010-2025. Initially, 169 sensitive firms (both long-term and short-term) and 786 non-sensitive firms were identified as listed on the Indonesia Stock Exchange in 2025. No financial sector firms were included in the sensitive group, while 205 firms were excluded from the non-sensitive group. Further exclusions were applied to companies lacking financial statements and sustainability reports, removing 150 and 67 firms from the sensitive long-term and short-term groups, respectively, and 532 and 135 firms from the non-sensitive long-term and short-term groups. As a result, the final firm sample consists of 19 and 102 firms in the sensitive long-term and short-term categories, and 49 and 446 firms in the non-sensitive long-term and short-term categories. This yields 238, 268, 563, and 1,070 observations, respectively, resulting in a total sample of 616 companies and 2,139 firm-year observations.

The variables in this study are operationalized using established measures from reliable databases. Environmental, social, and governance disclosures are proxied by the respective E-score, S-score, and G-score obtained from ESG Intelligence, reflecting firms' activities and policies in each dimension. Firm value is measured using Tobin's Q, calculated as the ratio of enterprise value to total assets, and is classified into short-term (1–5 years) and long-term (more than 5 years) horizons. Profitability is measured by Return on Assets (ROA), defined as earnings after tax divided by total assets. All financial data, including Tobin's Q and ROA, is sourced from the Osiris database.

This study employs panel data, combining cross-sectional and time-series observations to capture variations across firms and over time. Panel data regression is utilized to estimate the relationships among variables, as it allows for controlling unobserved heterogeneity and improving estimation efficiency (Baltagi, 2005; Hidayat, 2014; Fatimah, 2021). Model estimation considers key assumptions regarding constants, slopes, and residuals, and is conducted using three alternative approaches: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the most appropriate model, a series of specification tests is applied, including the Chow test, the Lagrange Multiplier test, and the Hausman test to evaluate FEM against REM, with model selection based on the statistical significance of each test.

## **RESULTS**

Based on the data processing results presented in Table 1, the G-Score (Governance) consistently had the highest mean value compared to other scores in all models (ranging from 0.575 to 0.692). Companies in the sample tend to have more mature disclosure or governance performance than environmental and social aspects. The E-Score (Environmental) and S-Score (Social) show more volatile average values of 0.3 to 0.6, indicating a variation in the firm's commitment to environmental issues and social responsibility.

The average ROA value across the model is at a low positive number (0.028 to 0.065), but it has a very wide range between the minimum (up to -0.9489) and the maximum (up to 0.944) values. The high value of the coefficient of variation in ROA, which peaked at 358.79% in Model 3, indicates a very contrasting variation in profit performance between companies in the sample. The Tobin's Q variable shows quite extreme data distribution, especially in Model 1 and Model 3. On Model 3, Tobin's Q has a maximum value of 42.610 with a standard deviation of 3.5879. In general, Tobin's average Q value is above

1 (except for Model 2 of 0.981), which indicates that, on average, the market provides a higher valuation compared to the book value of the firm's assets.

Regarding comparisons between models, Model 2 appears to have the most stable data for the Tobin's Q variable with the lowest standard deviation (0.862) and Coef. Var. smallest (87.85%) compared to other models. Model 3 is the model with the highest level of data heterogeneity, indicated by the standard deviation value and the largest coefficient of variation in the variables of financial performance and firm value. Table 1 presents the descriptive statistics of the models.

Table 1. Descriptive Statistics

Model	Variables	Min	Max	Mean	Median	Std.Dev	Coef. Var.
1	E-Score	0	1	0.392	0.375	0.219	55.82%
	S-Score	0	1	0.375	0.333	0.226	60.4%
	G-Score	0	1	0.575	0.538	0.303	52.74%
	ROA	-0.6155	0.834	0.065	0.0449	0.155	238.45%
	Tobin's Q	0.042	17.917	1.277	0.788	2.0277	158.79%
2	E-Score	0	1	0.492	0.48	0.318	64.62%
	S-Score	0	1	0.6009	0.61	0.274	45.61%
	G-Score	0	1	0.671	0.727	0.346	51.53%
	ROA	-0.567	0.454	0.05	0.039	0.107	214.12%
	Tobin's Q	0.077	5.484	0.981	0.7115	0.862	87.85%
3	E-Score	0	1	0.352	0.344	0.205	58.14%
	S-Score	0	1	0.351	0.306	0.2048	58.36%
	G-Score	0	1	0.586	0.545	0.2777	47.39%
	ROA	-0.9489	0.944	0.028	0.0267	0.1011	358.79%
	Tobin's Q	0.0018	42.610	1.589	0.8669	3.5879	205.776%
4	E-Score	0	1	0.427	0.385	0.278	65.12%
	S-Score	0	1	0.521	0.522	0.2372	45.54%
	G-Score	0	1	0.692	0.8	0.326	47.05%
	ROA	-0.8708	0.921	0.0524	0.0444	0.141	269.1%
	Tobin's Q	0.0238	22.720	1.7056	0.877	2.753	161.41%

The correlation matrix between variables in the four research analysis models is found in Table 2. In the four models, there is a large correlational relationship between E-Score and S-Score (always above 0.5). A considerable correlational relationship exists between E-Score and G-Score (between 0.25 and 0.4). A small correlational relationship was found between E, S, G-Score, and ROA (about 0.1). A very small correlational relationship exists between E, S, G-Score, and Tobin's Q (almost 0.0). The correlation relationship between ROA and Tobin's Q varied, for three models it ranged from 0.25, and one model was above 0.5.

Table 2. Correlation Matrix in Short-Term & Long-Term in the Sensitive Socio-Environmental Model

Industry	Model	Variable	E-Score	S-Score	G-Score	ROA	Tobin's Q
Sensitive Socio-Environmental	Short Term	E-Score	1				
		S-Score	0.685	1			
		G-Score	0.355	0.393	1		
		ROA	0.168	0.135	0.031	1	
		Tobin's Q	0.052	-0.036	-0.008	0.251	1
	Long Term	E-Score	1				
		S-Score	0.830	1			
		G-Score	0.338	0.257	1		
		ROA	0.183	0.132	0.235	1	
		Tobin's Q	0.123	0.062	0.059	0.263	1
Non-Sensitive Socio-Environmental	Short Term	E-Score	1				
		S-Score	0.610	1			
		G-Score	0.298	0.372	1		
		ROA	0.086	0.109	0.087	1	
		Tobin's Q	-0.049	-0.031	-0.029	0.114	1

Industry	Model	Variable	E-Score	S-Score	G-Score	ROA	Tobin's Q
		E-Score	1				
		S-Score	0.694	1			
	Long Term	G-Score	0.318	0.272	1		
		ROA	0.057	-0.003	0.061	1	
		Tobin's Q	-0.048	-0.066	0.059	0.524	1

This study employed panel data regression models selected through Chow, Lagrange Multiplier (LM), and Hausman tests across eight model variations that distinguish time horizons and industry sensitivity. The Chow test consistently rejected H0 ( $p < 0.05$ ), indicating significant individual heterogeneity and supporting the Fixed Effect Model (FEM) over the Common Effect Model (CEM), while the LM test also rejected H0 ( $p < 0.05$ ), confirming that the Random Effect Model (REM) is more appropriate than CEM. The Hausman test results show that FEM is generally preferred, particularly in socio-environmentally sensitive industries and moderated models ( $p < 0.05$ ), whereas REM is selected in certain cases, such as short-term non-moderated sensitive industry models ( $p = 0.0856$ ) and several non-sensitive models, reflecting structural variation across samples.

To ensure robust statistical inference, this study addresses heteroscedasticity and autocorrelation using cluster-robust standard errors (vce cluster ID), which correct the variance-covariance matrix without altering regression coefficients. This combined approach of rigorous model selection and robust estimation strengthens the reliability of the findings, ensuring that conclusions on the impact of ESG and profitability on firm value are not biased by data irregularities.

Table 3. Hypothesis Test Results (Direct Effect)

Model	Industry	H	E-Score (a)	S-Score (b)	G-Score (c)	Simultaneous (g)	R <sup>2</sup>	Rho
Short Term	Non-Sensitive	1	z=0.17 *0.864 H rejected	z=-0.47 *0.638 H rejected	z=-0.26 *0.798 H rejected	Prob>chi2 *0.8276 H rejected	0.0017	0.708
	Sensitive	2	t=-0.58 *0.572 H rejected	t=-0.87 *0.393 H rejected	t=1.75 *0.092 H rejected	Prob > F 0.2533 H rejected	0.0201	0.586
Long Term	Non-Sensitive	3	z=0.61 *0.544 H rejected	z=0.89 *0.373 H rejected	z=-2.02 *0.044 H accepted Coeff. -0.4943097	Prob > chi2 0.0837 H rejected	0.0085	0.720
	Sensitive	4	z=-1.50 *0.133 H rejected	z=-1.35 *0.177 H rejected	z=-0.58 *0.561 H rejected	Prob > chi2 0.1898 H rejected	0.0186	0.751

Table 3 reports the direct effects of ESG components (E-score, S-score, and G-score) on firm value across industry types and time horizons. In the short-term non-sensitive industry, none of the ESG variables are statistically significant, as indicated by high p-values for E-score ( $p = 0.864$ ), S-score ( $p = 0.638$ ), and G-score ( $p = 0.798$ ). The overall model is also not significant ( $\text{Prob} > \chi^2 = 0.8276$ ), suggesting no direct ESG impact on firm value in the short term. Similarly, in the short-term sensitive industry, all ESG variables remain insignificant, although the G-score shows marginal significance ( $t = 1.75$ ;  $p = 0.092$ ). The model is not jointly significant ( $\text{Prob} > F = 0.2533$ ).

In the long-term non-sensitive industry (Model 3), only G-score has a significant negative effect on firm value ( $z = -2.02$ ;  $p = 0.044$ ), while E-score and S-score are not significant. However, the overall model is not significant ( $\text{Prob} > \chi^2 = 0.0837$ ). In the long-term sensitive industry (Model 4), none of the ESG variables show significant effects, and the model is also not significant ( $\text{Prob} > \chi^2 = 0.1898$ ). The results indicate that ESG

components do not exhibit consistent direct effects on firm value, with only limited evidence of significance found for G-score in the long-term non-sensitive industry.

**Table 4.** Hypothesis Testing for Moderation Effect

Model	Industry	H	E-Score x ROA (d)	S-Score x ROA (e)	G-Score x ROA (f)	Simultaneous (h)	R <sup>2</sup>	Rho
Short Term	Non-Sensitive	1	t=1.13 *0.262 H rejected	t=-2.28 *0.025 H accepted Coeff. -12.69362	t=1.72 *0.088 H rejected	Prob > F 0.0062 H accepted	0.1002	0.759
	Sensitive	2	z=-1.46 *0.145 H rejected	z=-0.25 *0.804 H rejected	z=3.08 *0.002 H accepted Coeff. 4.006523 Pure moderator	Prob > chi2 0.0006 H accepted	0.1061	0.500
Long Term	Non-Sensitive	3	t=-2.73 *0.007 H accepted Coeff. -9.264575 Pure moderator	t=2.61 *0.009 H accepted Coeff. 6.692487 Pure moderator	t=0.23 *0.818 H rejected	Prob > F 0.0111 H accepted	0.0183	0.750
	Sensitive	4	t=0.74 *0.464 H rejected	t=-1.27 *0.210 H rejected	t=-1.02 *0.311 H rejected	Prob > F 0.0020 H accepted	0.0583	0.747

Table 4 presents the results of the moderation effect testing across industry types (non-sensitive vs. sensitive) and time horizons (short-term vs. long-term). In the short-term non-sensitive industry, only the interaction between S-score and ROA is significant ( $t = -2.28$ ;  $p = 0.025$ ) with a negative coefficient, indicating a moderating effect. The interactions of E-score and G-score are not significant. However, the model is jointly significant ( $\text{Prob} > F = 0.0062$ ), suggesting that the moderating variables collectively influence ROA. In the short-term sensitive industry, only the interaction between G-score and ROA is significant ( $z = 3.08$ ;  $p = 0.002$ ) with a positive coefficient, indicating a pure moderating role. E-score and S-score interactions are not significant. The model is also jointly significant ( $\text{Prob} > \text{chi}^2 = 0.0006$ ).

In the long-term non-sensitive industry, both E-score ( $t = -2.73$ ;  $p = 0.007$ ) and S-score ( $t = 2.61$ ;  $p = 0.009$ ) interactions are significant, indicating their roles as moderators, while G-score is not significant. The model is jointly significant ( $\text{Prob} > F = 0.0111$ ). In the long-term sensitive industry, none of the interaction terms are statistically significant. Despite this, the overall model remains significant ( $\text{Prob} > F = 0.0020$ ), implying a collective effect without individual significance. The moderating effects of ESG dimensions on ROA vary by industry type and time horizon, with stronger and more consistent effects observed in non-sensitive industries.

**DISCUSSION**

The findings indicate that ESG disclosure does not have a significant direct effect on firm value in both short- and long-term periods, as well as across socio-environmentally sensitive and non-sensitive industries, leading to the rejection of most direct hypotheses, with only limited evidence of a negative governance effect in one long-term model. However, profitability significantly moderates several relationships, and the interaction between ESG and ROA is consistently significant. Environmental and social disclosures also show no partial significant effect on firm value, suggesting that markets do not regard them as decision-useful information. From the theory of the firm perspective, this implies that such disclosures have not improved efficiency, reduced costs, or enhanced expected

cash flows (Coase, 1937). In line with signaling theory, they do not function as strong economic signals, while disclosure theory argues that information has value only when material for decision-making (Cerf, 1961; Choi, 1973; Spence, 1973). Thus, ESG disclosure mainly supports legitimacy and stakeholder trust rather than firm value (Choi & Yoo, 2022; Bagh et al., 2024; Giovanni et al., 2025).

The governance dimension does not show a significant direct effect on firm value in most models, leading to rejection of related hypotheses, except for one long-term case with a negative effect. From agency theory, governance is expected to reduce agency costs and increase firm value, but the findings indicate it is not viewed as a differentiating factor. Low variation in governance scores compared to high variation in firm value suggests governance practices are relatively standardized (Jensen & Meckling, 1976). Therefore, governance disclosure does not provide a strong signal to investors (Spence, 1973). Prior studies by An et al. (2025) also show similar results when governance becomes common or mandatory, implying it is assessed alongside other firm characteristics rather than independently.

In contrast, the moderating role of profitability provides stronger explanatory power. Several moderating hypotheses are supported, indicating that ESG disclosure becomes value-relevant when firms are profitable. In socio-environmentally sensitive industries, governance disclosure positively influences firm value in the long term when supported by profitability. This suggests that profitability enhances the credibility of governance practices and signals effective managerial control, aligning with agency theory (Jensen & Meckling, 1976). In this context, the market is more likely to interpret governance as a substantive mechanism rather than symbolic compliance.

Social disclosure demonstrates a negative moderating effect in the short term when profitability is high. However, this effect diminishes in the long term, suggesting saturation. In contrast, environmental disclosure shows a negative moderating effect in the short term for non-sensitive industries, implying that when profitability is high, environmental activities may be perceived as non-core investments or overinvestment, increasing costs rather than creating value, although this negative perception weakens over time as market evaluations evolve (Coase, 1937; Jensen & Meckling, 1976).

The simultaneous results show that ESG and ROA jointly have a significant effect on firm value across all models, despite many insignificant partial coefficients. This confirms that ESG should be understood as a systemic and contextual mechanism rather than as independent components. From the perspectives of agency theory, signaling theory, and stakeholder theory, the market evaluates firms holistically, considering the interaction between ESG practices and financial performance (Li et al., 2023; Connelly et al., 2025). Therefore, ESG disclosure becomes relevant only when integrated with profitability, reinforcing the importance of a comprehensive and strategic approach to sustainability (Vurro et al., 2022; Fafaliou et al., 2022; Bonham & Riggs-Cragun, 2024). Firms in sensitive industries should prioritize long-term governance aligned with stable profitability to manage regulatory and reputational risks, whereas firms in non-sensitive industries should emphasize internal efficiency and short-term social initiatives supported by profit.

## **CONCLUSION**

This study finds that ESG disclosure does not have a significant direct effect on firm value, indicating that individual environmental, social, and governance signals are not sufficiently strong to influence market perception. The findings show that ESG components do not have significant direct effects on firm value, except for limited evidence on governance in the long-term non-sensitive industry. However, profitability acts as a moderator in several relationships, depending on industry type and time horizon. The simultaneous results also confirm that ESG and profitability jointly influence firm value, supporting all simultaneous hypotheses. The impact of ESG is conditional and context-dependent, with stronger and more consistent moderating effects observed in non-sensitive industries. These findings imply that ESG effectiveness is context-dependent and

must be integrated with financial performance to generate value, highlighting the importance of strategic alignment between sustainability practices and profitability.

This study has several limitations that provide directions for future research. First, the analysis is limited to Indonesia, whose specific institutional, regulatory, and ESG maturity characteristics may restrict the generalizability of the findings to other countries. Second, ESG measurements rely on a single rating source, which may introduce methodological bias due to differences in scoring approaches and indicator weighting. Third, the sample only includes listed firms, excluding large non-listed companies that may also have significant ESG practices and impacts. Additionally, the study uses profitability as the sole moderating variable, while other contextual factors may also influence the ESG–firm value relationship. Future research is therefore encouraged to conduct cross-country comparisons, utilize multiple ESG rating sources, include non-listed firms, and incorporate additional moderating variables such as market dynamics, firm characteristics, and external environmental factors to provide a more comprehensive understanding.

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