



# Environmental, Social, and Governance (ESG) Performance and Firm Value: Panel Data Evidence from ASEAN

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**Abstract.** This study investigates the impact of corporate sustainability performance, measured through ESG scores, on firm value using a panel dataset of 568 publicly listed companies across Southeast Asia from 2019 to 2023. A random effects panel regression model, selected based on the Hausman test, is employed to estimate the relationship. The findings show that ESG performance has a positive and statistically significant effect on firm value, indicating that firms with stronger sustainability practices are viewed more favorably by investors. This suggests that ESG performance functions as a credible signal of corporate quality, strategic orientation, and risk management. The study contributes to the literature by extending the application of signaling theory within the ESG context and by providing empirical evidence from Southeast Asian emerging markets, where research remains limited. The results highlight that integrated ESG performance, captured through an aggregated score, plays an important role in enhancing firm valuation. These insights offer practical implications for managers, investors, and policymakers in promoting sustainability-driven value creation.

**Keywords:** ESG, Firm Value, ASEAN, Sustainability, Panel Data.

## 1 Introduction

### 1.1 Background

In recent years, awareness of the importance of sustainability has grown rapidly across the globe. One form of commitment to sustainability is reflected in the increasing number of companies disclosing their sustainability reports [1]. Sustainability reports provide information regarding a company's past, present, and future activities related to social and environmental issues, as well as the financial implications arising from corporate environmental management practices [2]. Such disclosures are often used as signaling mechanisms to build a positive reputation and gain legitimacy from stakeholders by integrating social and environmental concerns into business operations [3]

The assessment of a company's sustainability commitment is increasingly being evaluated by investors and stakeholders through ESG-based metrics, which capture

environmental, social, and governance performance. ESG has now become a key priority for both corporations and investors [4]. From a corporate management perspective, ESG engagement is considered an important factor in enhancing firm value and ensuring long-term sustainability [5].

Previous studies have shown a generally positive relationship between ESG performance and corporate financial performance [6]. Firms with strong ESG practices are often able to reduce conflicts with stakeholders, lower the likelihood of failure, and mitigate the risk of bankruptcy [1]. Moreover, empirical evidence shows that capital inflows to ESG-related mutual funds and ETFs more than doubled to \$405 billion globally regarding the report from Global Sustainable Investment Alliance & Broadridge in 2020.

On the other hand, ESG performance is also associated with risk reduction. The risk reduction hypothesis posits that firm risk decreases as companies become more involved in ESG activities [7]. Through ESG initiatives, firms are able to improve risk management, operational efficiency, and stakeholder relations, which ultimately enhance firm value.

Southeast Asia provides a unique context to explore the relationship between ESG performance and firm value. Although most countries in this region are classified as emerging markets, their stock exchanges have been ranked relatively high in terms of global sustainability reporting in 2019. Following the data from Corporate Knights in 2019, The Stock Exchange of Thailand ranked 9th out of 49 global exchanges, followed by Bursa Malaysia (22nd), the Singapore Exchange (24th), and the Indonesia Stock Exchange (36th).

Nevertheless, the literature on sustainability reporting in Southeast Asia remains limited compared to other regions such as North America and Europe [8]. The average level of sustainability disclosure among Southeast Asian companies is lower than that of European firms [9], although several countries such as Malaysia, Indonesia, and the Philippines have adopted “comply or explain” policies for sustainability reporting [10] [11]. Additionally, much of the existing research has focused on individual Southeast Asian countries such as Malaysia [12], Indonesia [13], and the Philippines [14]. As a result, there remains a need for cross-country studies to better understand ESG dynamics in the region.

This study aims to examine the relationship between ESG performance and firm value in the context of Southeast Asian countries. It is expected to provide empirical evidence on how sustainability efforts, as reflected in ESG scores, contribute to firm valuation. This research contributes both theoretically and practically by offering insights for companies, investors, and policymakers in emerging markets.

## **1.2 Purpose of the Research**

This study aims to examine the relationship between corporate ESG performance and firm value in the context of publicly listed firms in Southeast Asia. By focusing on firms operating in emerging markets, the study seeks to provide empirical insights that contrast with the majority of prior research, which has predominantly centered on developed economies. Through this approach, the research intends to offer a more

nuanced understanding of ESG dynamics within Southeast Asia's diverse regulatory and institutional landscape.

### **1.3 Purpose of the Research**

This study makes several important contributions to the literature, both theoretically and empirically. Theoretically, it enriches the ESG discourse by examining the relationship between ESG performance and firm value, offering a deeper understanding of how corporate sustainability initiatives contribute to firm valuation. It adds to the growing body of literature that emphasizes the strategic importance of ESG performance as a value-enhancing mechanism in corporate governance and stakeholder engagement.

Empirically, the study presents robust evidence drawn from a large sample of publicly listed companies across multiple Southeast Asian countries, an underrepresented region in ESG research. By adopting a cross-country approach, the study helps reconcile the inconsistent findings in previous studies and highlights regional ESG patterns that are often overlooked in the global literature.

Practically, this research offers valuable implications for corporate managers by providing insights on how ESG performance can be leveraged to enhance firm value. It also informs investors by clarifying the role of ESG initiatives in shaping long-term corporate performance. Finally, it offers policymakers empirical support for promoting consistent and transparent sustainability reporting frameworks across Southeast Asian markets.

## **2 Literature Review**

### **2.1 Theoretical Framework: Signaling Theory**

Signaling Theory originates from the concept of information asymmetry, as introduced by Akerlof in 1970. The theory posits that parties with access to superior information, such as corporate managers, can convey signals to external stakeholders, including investors, in order to reduce uncertainty. In the context of ESG, signals are transmitted through the disclosure of relevant non-financial information, such as sustainability reports, with the objective of building trust and demonstrating the firm's quality and long-term commitment to sustainability [1, 15].

Such disclosures are critical, as certain information is known only to internal parties and is not readily available to external stakeholders. Managers issue these signals to distinguish their firms from competitors within the same industry, thereby assuring investors of the firm's superior performance and capabilities. One of the most commonly used signaling mechanisms is the sustainability report, which seeks to enhance corporate reputation and legitimacy by integrating social and environmental concerns into core business operations [3].

Moreover, ESG performance metrics are considered important because they capture aspects of a firm's non-financial performance that are not reflected in conventional accounting data [16]. ESG scores, for instance, serve as indicators through which firms

can communicate their commitment to responsible and sustainable practices. Within this context, Signaling Theory provides a foundation for understanding how ESG scores function as positive signals to investors, reflecting the firm’s strategic orientation toward sustainability. This study adopts Signaling Theory as a theoretical lens to explore the relationship between ESG performance and firm value, particularly in the emerging market context of Southeast Asia.

### 2.2 ESG Performance and Firm Value

ESG performance serves as an indicator that evaluates a company's conduct across three main pillars: environmental, social, and governance. The environmental pillar encompasses aspects such as resource utilization, emissions, and innovation, assessing the firm’s contributions to climate change mitigation, energy efficiency, and waste management. The social pillar measures a firm’s responsibilities toward labor practices, human rights, product safety, and community engagement. Meanwhile, the governance pillar reflects corporate leadership, ownership structure, and the integration of corporate social responsibility (CSR) into strategic decision-making [1]. ESG scores provide a summary measure of a company’s effectiveness based on publicly disclosed information, enabling investors to evaluate a firm's commitment to sustainability [17].

Prior studies have generally found a positive association between ESG scores and firm value. A result from meta-analysis studies found that encompassing over 2,000 empirical studies, reported that approximately 50% of the studies demonstrated a positive relationship between ESG and financial performance, 40% found a neutral relationship, and only 10% indicated a negative one [18]. This positive relationship can be explained through mechanisms such as enhanced corporate reputation, which can attract investors, and reduced operational and reputational risks. For instance, the studies with US and German sample found that voluntary environmental disclosures are positively associated with firm value through their influence on cash flows and cost of equity components [19, 20].

However, the relationship between ESG performance and firm value can vary depending on market context. In the Asian region, empirical findings have been mixed. Some studies have reported a positive relationship between ESG scores and firm value [12, 21], while others found no significant association [14, 22]. These inconsistencies highlight the need for further investigation to better understand the dynamics of ESG performance in regional and emerging market contexts.

**Hypothesis 1: ESG performance is positively associated with firm value.**

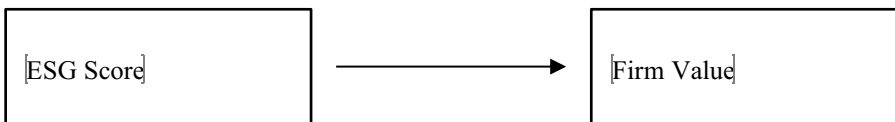


Fig. 1. Research Hypothesis Framework.

Source: Data Processed by Author

## **3 Research Methodology**

### **3.1 Research Design**

This study adopts a quantitative research approach utilizing moderated regression analysis to examine the relationship between ESG performance and firm value. This design is suitable for testing the interaction effects between variables using historical data from publicly listed firms. The research is conducted within the context of Southeast Asian capital markets, where firm-level ESG and financial data are available over a multi-year period. The use of panel data allows for more robust estimation by controlling for firm-specific and time-invariant effects.

### **3.2 Population and Sample**

The population of this study includes all firms listed on the stock exchanges of Southeast Asian countries during the study period. The sample was selected using purposive sampling based on the following criteria: (1) the firm is listed on a stock exchange in a Southeast Asian country; (2) the firm has complete ESG and financial data available in the Refinitiv Eikon database; and (3) the firm does not operate in the financial sector, due to the distinct financial reporting structure in this industry.

Based on these criteria, a final sample of 568 non-financial firms from Southeast Asia was selected, covering the five-year period from 2019 to 2023. The selected firms come from the following countries: Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. This results in an unbalanced panel dataset with a total of 2,843 firm-year observations.

### **3.3 Data Sources**

This study utilizes secondary data obtained from the Refinitiv Eikon database, which provides extensive information on corporate environmental, social, and governance (ESG) practices for publicly listed firms globally. ESG performance is proxied by ESG scores, reflecting the company's sustainability activities based on publicly disclosed environmental, social, and governance data.

The dependent variable, firm value, is measured using Tobin's Q, defined as the ratio of the firm's market value (i.e., the sum of the market value of equity and the book value of liabilities) to the book value of its assets.

To enhance the robustness of the analysis, the study includes several control variables: firm size, leverage, return on assets (ROA), return on equity (ROE), and market capitalization. Firm size is measured by the natural logarithm of total assets, reflecting the company's operational scale. Leverage is calculated as the ratio of total debt to total equity, indicating the firm's reliance on debt financing. ROA and ROE capture firm-level profitability, with ROA indicating asset efficiency and ROE reflecting the return generated on shareholders' equity. Additionally, market capitalization is included to control for market perception and valuation, and is calculated as the total market value of a company's outstanding shares.

### 3.4 Model Estimation

This study employs a panel data regression model to examine the relationship between ESG performance and firm value. The model is specified as follows:

$$FirmValue_{it} = \beta_0 + \beta_1 ESGScore_{it} + \gamma X_{it} + \varepsilon_{it} \quad (1)$$

In this model, FirmValue represents the value of firm  $i$  at time  $t$ , proxied by Tobin's Q. ESGPerformance denotes the firm's sustainability performance score.  $X_{it}$  represents the vector of control variables including firm size, leverage, ROA, ROE, and market capitalization. Finally,  $\varepsilon_{it}$  is the error term.

### 3.5 Data Analysis Technique

The analysis in this study was conducted using panel data regression with the support of Stata statistical software. Prior to the main estimation, the dataset was cleaned by removing incomplete observations and identifying abnormal values. To reduce the potential influence of extreme outliers, the data were winsorized at the 1% level, allowing for more robust and reliable regression estimates.

Descriptive statistics were then calculated to provide a summary of the data distribution, including mean, median, standard deviation, minimum, and maximum values for all variables of interest. These statistics offer an initial overview of the characteristics and variation present within the dataset.

To assess the relationship between ESG performance and firm value, the study employed panel data regression using a random effects model. The choice of model was determined through the Hausman specification test, which supported the use of the random effects approach over the fixed effects alternative. This model accommodates both within-entity and between-entity variation, making it suitable for analyzing firm-level data over time while controlling for unobserved heterogeneity.

### 3.6 Research Period and Setting

This study focuses on publicly listed firms in Southeast Asia over a five-year period from 2019 to 2023. Southeast Asia provides a compelling context due to its status as an emerging market with growing attention to sustainability practices, yet limited and fragmented ESG-related literature. The five-year period enables the study to capture meaningful trends and dynamics in the relationship between ESG performance and firm value.

## 4 Results

### 4.1 Descriptive Statistics

Descriptive statistics provide an initial understanding of the data distribution and characteristics of the variables used in this study, which includes a total of 2,843 firm-year observations from publicly listed companies in Southeast Asia over the period 2019–2023. The variables analyzed include the dependent variable (Firm Value), independent (ESG Performance), and control variables (Firm Size, Market Capitalization, Leverage, ROA, and ROE).

**Table 1.** Descriptive Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
FirmValue	2843	1.312	1.036	.314	6.794
ESG	2843	46.018	18.57	2.276	91.951
Env	2843	38.773	24.132	0	97.206
Soc	2843	49.197	21.673	.419	98.117
Gov	2843	49.365	21.855	.467	97.582
Size	2843	20.669	1.835	14.846	25.336
Market	2843	20.019	1.89	14.671	25.121
Lev	2843	.762	.944	0	5.489
ROA	2843	.041	.076	-.239	.306
ROE	2843	.089	.189	-.664	.991

Source: Data Processed by Author

The average Firm Value, proxied by Tobin's Q, is 1.312 with a standard deviation of 1.036, indicating moderate variation in market valuation relative to asset replacement costs across firms. The range of values, from a minimum of 0.314 to a maximum of 6.794, suggests the presence of both undervalued and overvalued firms in the sample.

The average ESG score is 46.018, with a standard deviation of 18.570, and ranges from a low of 2.276 to a high of 91.951. This indicates substantial variability in ESG performance across firms, reflecting differing levels of commitment to environmental, social, and governance practices.

When disaggregated into its three pillars, the Environmental (Env) score averages 38.773, which is notably lower than the Social (Soc) and Governance (Gov) scores, averaging 49.197 and 49.365, respectively. This suggests that environmental initiatives may be relatively less developed than social and governance practices among the firms in the sample.

Regarding the control variables, the average Firm Size, measured as the natural logarithm of total assets, is 20.669, with a range from 14.846 to 25.336. Market Capitalization displays a similar distribution, with an average of 20.019. The average Leverage ratio is 0.762, indicating moderate reliance on debt financing. Average profitability, as reflected by ROA (0.041) and ROE (0.089), is modest, with some firms exhibiting negative values, suggesting that certain firms experienced financial losses during the study period.

Overall, the descriptive statistics highlight a high degree of variation in ESG performance and financial characteristics across firms in Southeast Asia, providing a solid foundation for further empirical investigation into the relationship between ESG performance and firm value.

**4.2 Regression Results and Interpretation**

Table 2 presents the results of the random effects panel regression, which investigates the relationship between ESG performance and firm value, proxied by Tobin’s Q. The analysis incorporates a comprehensive set of control variables to isolate the direct effect of ESG performance on firm valuation.

**Table 2.** Panel Regression Results.

<b>Firm Value</b>	<b>Coef.</b>	<b>St.Err.</b>	<b>t-value</b>	<b>p-value</b>	<b>[95% Conf</b>	<b>Interval]</b>	<b>Sig</b>
ESG	.01	.005	2.13	.033	.001	.019	**
Env	-.001	.001	-1.09	.275	-.004	.001	
Soc	-.001	.002	-0.73	.467	-.004	.002	
Gov	-.001	.001	-0.92	.358	-.003	.001	
Size	-.847	.016	-52.53	.000	-.878	-.815	***
Market	.859	.017	50.27	.000	.826	.893	***
Lev	.137	.008	16.18	.000	.12	.154	***
ROA	-.321	.091	-3.51	.000	-.499	-.142	***
ROE	.246	.03	8.23	.000	.187	.305	***
Constant	1.124	.274	4.10	.000	.587	1.661	***
Mean dependent var			1.312	SD dependent var		1.036	
Overall r-squared			0.639	Number of obs		2843	
Chi-square			3268.	Prob > chi2		0.000	
R-squared within			0.470	R-squared between		0.645	

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

Source: Data Processed by Autor

The coefficient for ESG performance is positive and statistically significant at the 5% level ( $\beta = 0.010$ ,  $p = 0.033$ ), thereby supporting Hypothesis 1 (H1). This result indicates that firms with stronger ESG performance tend to demonstrate higher firm value. The finding is consistent with Signaling Theory, which posits that robust ESG practices act as credible signals of long-term strategic orientation, effective governance, and reduced risk, thereby enhancing investor confidence [1, 16]. ESG disclosures play a critical role in mitigating information asymmetry and fostering stakeholder trust, which in turn positively influences firm valuation [19].

This result aligns with prior studies conducted globally [18] and within the Southeast Asian context [12, 21], reinforcing the growing relevance of non-financial metrics in

investor decision-making, even in emerging markets. These findings suggest that capital market participants are increasingly responsive to ESG signals, viewing them as indicators of sustainable value creation and responsible corporate conduct.

When examining the disaggregated ESG components (environmental, social, and governance), none exhibit a statistically significant relationship with firm value. This implies that investors may place greater emphasis on aggregate ESG performance rather than on individual ESG dimensions. This observation is consistent with previous studies, who finds that composite ESG scores are generally more informative and reliable than standalone indicators [23], particularly in emerging markets where reporting practices may vary across ESG domains.

As for the control variables, firm size exhibits a negative and highly significant relationship with firm value ( $\beta = -0.847$ ,  $p < 0.01$ ), which may reflect valuation discounts or inefficiencies typically associated with larger firms in emerging markets. In contrast, market capitalization shows a strong positive association ( $\beta = 0.859$ ,  $p < 0.01$ ), suggesting that larger, more visible firms may enjoy higher investor confidence and market liquidity.

Leverage is also positively related to firm value ( $\beta = 0.137$ ,  $p < 0.01$ ), potentially indicating that debt is perceived as a sign of financial discipline rather than distress in this context. Among the profitability metrics, ROA has a negative effect ( $\beta = -0.321$ ,  $p < 0.01$ ), possibly indicating that asset efficiency may not be the primary driver of valuation. ROE, however, shows a significant positive association ( $\beta = 0.246$ ,  $p < 0.01$ ), highlighting that investors respond favorably to equity-based performance indicators. Overall, the model demonstrates strong explanatory power, with an  $R^2$  of 0.639, indicating a good model fit. The use of the random effects model is justified based on the Hausman test, which confirms the appropriateness of this specification for capturing both within- and between-entity variations.

These findings confirm that ESG performance plays a significant role in shaping firm value, supporting the argument that sustainability efforts are not merely ethical imperatives but also strategic drivers of corporate valuation [24, 25, 26]. The results contribute to the growing body of literature that underscores the financial materiality of ESG, particularly in the context of Southeast Asian emerging markets.

## 5 Conclusion

This study examines the relationship between corporate sustainability performance, proxied by ESG performance, and firm value, using a panel dataset of 568 publicly listed firms across Southeast Asia from 2019 to 2023. Employing a random effects panel regression model, as supported by the Hausman test, the findings reveal a positive and statistically significant impact of ESG performance on firm value.

The results underscore that sustainability initiatives contribute to long-term economic value and align with the expectations of diverse stakeholders. Firms with stronger ESG performance are perceived more favorably by investors, reflecting the role of ESG as a credible signal of corporate quality, strategic orientation, and risk management.

This research makes several important contributions. Theoretically, it advances the application of signaling theory within the ESG context by demonstrating how ESG performance serves as a valuable signal to capital markets, particularly in emerging economies. It also fills a gap in the literature by providing empirical evidence from Southeast Asia, a region with growing interest in sustainable finance but relatively limited prior studies.

Empirically, the study enriches understanding by focusing on the aggregate ESG score rather than isolated pillars, suggesting that investors value integrated sustainability efforts over segmented disclosures. Practically, the findings offer actionable insights for corporate managers, investors, and regulators: enhancing ESG performance is not only a matter of corporate responsibility but also a strategic approach to enhancing firm valuation.

However, the study has several limitations. First, the ESG data sourced from Refinitiv Eikon depend on publicly disclosed information, which may be subject to reporting bias or inconsistencies across firms and countries. Second, the analysis focuses on firm-level financial controls but does not explicitly account for macroeconomic or industry-specific influences, which may also affect firm valuation during the sample period.

Future research could explore multiple avenues. Employing qualitative or mixed-method approaches may provide deeper insights into how ESG practices influence stakeholder perceptions and investment decisions. Further disaggregation of ESG pillars and exploration of sector-specific dynamics could clarify which sustainability dimensions most strongly affect firm value. Additionally, expanding the sample to include private firms or integrating institutional and regulatory factors could broaden understanding of the ESG value relationship in emerging markets.

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