

Do Boards Moderate the Relationship between Sustainability and Financial Performance in Asia-Pacific Emerging Markets?

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Abstract

Research Originality: This study offers novel empirical evidence on the relationship between environmental, social, and governance (ESG) performance and financial performance in an underexplored sector of environmentally sensitive industries across Asia-Pacific emerging markets.

Research Objectives: This study aims to examine the direct impact of ESG performance on firm profitability and to investigate whether board characteristics moderate this relationship among environmentally sensitive industry firms in 10 Asia-Pacific emerging market countries.

Research Method: An unbalanced panel dataset of 762 firms in environmentally sensitive industries (energy, materials, and utilities) from ten Asia-Pacific emerging market countries over the period 2014–2024 was analyzed using fixed-effects panel regression.

Empirical Results: ESG performance had no statistically significant effect on either ROA or ROE. The moderation effects of board size, board independence, and board gender on the ESG–profitability nexus are also statistically insignificant.

Implications: These findings suggest that ESG activities in environmentally sensitive industries in Asia-Pacific emerging markets are primarily driven by legitimacy-seeking behavior rather than direct financial incentives.

Keywords:

environmentally sensitive industries; corporate governance; profitability; board size; board independence; board gender

How to Cite:

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INTRODUCTION

Extreme climate change is prompting a global realignment of priorities, requiring governments, businesses, and civil society organizations to address climate-related health, safety, and economic risks. The 2021 United Nations Climate Change Conference (COP26) mandated a 50% reduction in carbon emissions by 2030 (The United Nations Climate Change Conference, 2021). Meeting this milestone has shifted the focus from overconsumption to resource efficiency and a circular economy. At the same time, systemic climate hazards are increasing worldwide. All stakeholders are taking action on climate change through climate mitigation and adaptation measures. ESG criteria are being used to influence investment decisions, operational shifts, and sustainability reporting, as companies demonstrate how they are meeting stakeholder expectations regarding environmental and social impact, in line with commitments to reach net-zero carbon emissions (Chen et al., 2023; Shakil, 2021).

The impact of a company's ESG-related policies and practices on profitability performance has attracted significant attention in the academic and practitioner literature. For instance, Ahmad et al. (2021) examined the effect of overall ESG performance on the profitability of 351 firms in the FTSE 350 from 2002 to 2018. They concluded that ESG factors positively and significantly influence profitability. Focusing on 4,887 international companies, Bhaskaran et al. (2020) conducted a two-stage least squares analysis to examine the influence of ESG activities on company performance. Their findings indicate that ESG initiatives focused on improving internal stakeholder well-being and establishing robust corporate governance structures positively influence company performance. Moreover, De Lucia et al. (2020) investigated the effect of ESG initiatives on the corporate performance of publicly traded European companies. They reported a positive association between ESG practices and financial indicators.

Several studies have reported divergent findings. For instance, Duque-Grisales & Aguilera-Caracuel (2021) examined 104 multinationals from Brazil, Chile, Colombia, Mexico, and Peru between 2011 and 2015 and identified a clear negative statistical relationship between ESG scores and profitability. Similarly, Folger-Laronde et al. (2022) analyzed the differences and relationships between the financial return of ETFs and their ESG ratings during the COVID-19 pandemic-caused financial crisis. The results suggest that higher sustainability performance by ETFs does not immunize investments from financial losses during critical market crashes. Focusing on Italian firms listed on the FTSE MIB Index, Landi & Sciarelli (2019) conducted a panel data regression to examine the effect of ESG ratings on Italian firms' abnormal returns. The findings indicate that ESG ratings have a significantly negative impact on market premiums under the framework of socially responsible investment (SRI)

Previous research has shown mixed results. For instance, focusing on India's energy sector, Behl et al. (2022) conducted four-wave cross-lagged panel structural equation modeling to test bidirectional causality and autoregressive effects between ESG disclosures and firm value. The results suggest a negative relationship in the first two lags, and a

positive relationship in the last lag. In Norwegian, Giannopoulos et al. (2022) investigated the influence of ESG scores on the profitability performance of Norwegian listed firms from 2010 to 2019. The results indicate a mixed pattern: ESG scores are positively associated with firm value (Tobin's Q) but negatively associated with financial outcomes, particularly profitability (ROA). Furthermore, Saygili et al. (2022) examined how ESG metrics influenced the profitability of publicly listed Turkish companies during 2007–2017. Results show that environmental disclosure negatively impacts profitability; however, stakeholder inclusion in management activities improves operational efficiency within the social pillar of ESG, while corporate governance mechanisms, such as shareholders and board structure, show significant improvements in corporate financial performance. Many studies have been conducted in developed countries. For instance, De Lucia et al. (2020) analyzed how ESG affects the financial return of publicly listed companies in Europe. A further study by Sandberg et al. (2023) examined how ESG ratings affect the profitability performance of food companies in Europe. Furthermore, country-specific research has been done in developed countries. For instance, Rahi et al. (2022) examined the sustainability and financial returns of firms but focused only on financial institutions in Nordic countries. Moreover, Baran et al. (2022) investigated the corporate Environmental, Social, and Governance (ESG) scores and corporate financial performance (CFP) of firms in Poland's energy sector. Menicucci & Paolucci (2023) further examined ESG factors in the Italian banking sector.

While research on the connection between ESG and firm performance has been extensive, a significant gap remains and warrants further study. First, most studies focus on developed countries, leaving out emerging countries with distinct business environments and regulatory landscapes. Second, the findings remain mixed across industries and countries, leaving the relationship between ESG and firm performance unclear. For this reason, Rahi et al. (2022) have recognized the need to examine mediating or moderating variables that could explain the relationship between ESG and firm performance. Third, while many studies focus on broad industry groups, sectors such as energy and mining remain underexplored despite their considerable environmental impacts. This study addresses these gaps by examining how board characteristics moderate the relationship between ESG performance and firm profitability in environmentally sensitive industries across Asia-Pacific emerging markets. Specifically, this study examines the direct impact of ESG performance on firm profitability (ROA and ROE) in environmentally sensitive industries across 10 Asia-Pacific emerging market countries. It investigates whether board size, board independence, and board gender moderate the ESG–profitability relationship.

We contribute to the existing literature in three ways. First, it provides large-scale panel evidence from 762 firms across 10 Asia-Pacific emerging-market countries, a regional context that remains empirically underrepresented relative to its economic and environmental significance. Second, while existing evidence on board governance moderating the ESG–profitability relationship is largely confined to developed market settings (Moussa et al., 2024; Rossi et al., 2021), this study examines three distinct board characteristics, size, independence, and gender as moderating variables in an emerging

market context, offering a more nuanced examination of how governance structures shape the ESG–profitability nexus where institutional environments differ substantially from those in advanced economies. Third, by focusing exclusively on environmentally sensitive industries, this study provides targeted empirical evidence to guide regulators and investors in designing ESG policies tailored to high-impact sectors in Asia-Pacific emerging markets.

METHODS

We study all emerging market countries in the Asia-Pacific region, as defined by the MSCI Index. According to MSCI, these countries include China, India, Indonesia, Malaysia, Pakistan, the Philippines, Taiwan, Thailand, South Korea, and Vietnam. Purposive sampling was employed, guided by two criteria: first, only companies operating in environmentally sensitive industries, defined by the Global Industry Classification Standard (GICS) as energy, materials, and utilities (Gracia & Siregar, 2021; Liu, 2024; Nilipour et al., 2020; Yoon et al., 2019), were considered; second, only firms that publicly disclose relevant data in LSEG Workspace were included. The LSEG Workspace database is recognized as a reliable information source and has been frequently cited in prior studies (Bhaskaran et al., 2020; El Khoury et al., 2023; Menicucci & Paolucci, 2023; Shakil, 2021).

We use an unbalanced panel dataset of 762 firms located in emerging markets across the Asia-Pacific region. We selected region-specific data because of rapid internationalization and the implementation of sustainability initiatives. The White & Case report identifies key environmental, social, and governance (ESG) developments in Asia-Pacific for 2024. It emphasizes the need to understand how sustainable development regulations affect profitability, offering fresh insights for companies pursuing long-term growth (Hussain et al., 2026). The sample covers the period 2014 to 2024. This exact timeframe was chosen for one main reason: it reflects the early stages of ESG development. This led to rapid growth, for instance, from the 2015 Paris Agreement, a preliminary agreement, to the UN Climate Change Conference (COP 26). The agreement had a significant impact across various countries. For example, ESG indices increased substantially by 31.01% in China and Indonesia. These increases highlighted significant ESG trends in 2017, 2019, and 2021 (Naysary et al., 2025).

In this paper, we measure firm performance using return on assets (ROA) and return on equity (ROE). We also examine three moderating variables: board size, board independence, and board gender. To address potential confounding factors, we included seven control variables: firm size, firm age, firm growth, fixed asset ratio, leverage, GDP growth, and a dummy variable for company type. Table 1 summarizes the variables incorporated in the models, their respective measurements, and the prior studies referenced.

Winsorization is applied at 1% level to address extreme values. To estimate an appropriate model, this study uses the Breusch-Pagan Lagrangian and the Hausman

Test. The result indicates a fixed-effects model. To examine whether boards moderate the influence of ESG on the financial outcomes of environmentally sensitive industry firms in emerging markets, statistical regression models are used to estimate the proposed models.

First, it estimates the direct effect of ESG on corporate financial outcomes using panel fixed effects in Stata 16, without interaction terms.

$$ROA_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 CTRL_{i,t} + \mu_t + \varepsilon_{i,t}$$

$$ROE_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 CTRL_{i,t} + \mu_t + \varepsilon_{i,t}$$

Table 1. Description of Variables

Variables	Codes	Measurement	Source	Reference
Dependent Variables				
Financial Performance	ROA	Net Income After Tax/Total Assets	LSEG	(Jyoti & Khanna, 2021)
	ROE	Net Income After Tax/Total Equity	LSEG	(Chen et al., 2023)
Independent Variable				
ESG Performance	ESG	ESG Score of the firm as calculated by LSEG	LSEG	(M. Naeem et al., 2021)
Moderating Variable				
Board Size	BS	The overall of board members	LSEG	(Rossi et al., 2021)
Board Independence	BI	The proportion of non-affiliated directors to the total number of board members	LSEG	(Rossi et al., 2021)
Board Gender	BG	The proportion of female directors to the overall number of board members	LSEG	(Van et al., 2025)
Control Variable				
Firm Size	FS	Natural logarithm of total asset	LSEG	(Chairani & Siregar, 2021)
Firm Age	FA	Natural logarithm of (1+(observation year – IPO year))	LSEG	(Hwang et al., 2021)
Firm Growth	FG	Current year– previous year) / previous year’s operating revenue)	LSEG	(Wu et al., 2022)
Fixed Assets Ratio	PPE	Net fixed assets/total assets	LSEG	(Xie et al., 2024)
Leverage	LV	Total debt/total assets	LSEG	(Chairani & Siregar, 2021)
GDP Growth	GG	Annual GDP growth	World Bank	(Chairani & Siregar, 2021)
Company Type	CT	Dummy Variable that takes the value 1 if a company is state-owned, and 0 otherwise	LSEG	(Yuan et al., 2022)

Note: This table provides the definitions of the variables utilized in this research.

Second, this study includes interaction terms to examine whether board characteristics moderate the effect of ESG on corporate financial outcomes.

$$ROA_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 ESG * BOARD_{i,t} + \beta_4 CTRL_{i,t} + \mu_t + \varepsilon_{i,t}$$

$$ROE_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 ESG * BOARD_{i,t} + \beta_4 CTRL_{i,t} + \mu_t + \varepsilon_{i,t}$$

In the model, $ESG_{i,t}$ refers to the ESG score calculated by Refinitiv. $BOARD_{i,t}$ represents the firm's board, measured by three proxies: (BS), (BI), and (BG). $CTRL_{i,t}$ represents seven control variables. Details of all variables are presented in Table 1. Furthermore, μ before the error term is a control for year fixed effects.

RESULTS AND DISCUSSION

The study examines the impact of ESG on firm profitability in environmentally sensitive industries in emerging-market Asia Pacific. Moreover, we also investigate how board size, board independence, and board gender affect the ESG-firm profitability nexus. The findings indicate no significant direct relationship between ESG and either profitability measure (ROA or ROE). Furthermore, board size, board independence, and board gender do not significantly moderate the ESG-performance nexus. These findings offer new insights and encourage policymakers to raise awareness of firms operating in environmentally sensitive industries in emerging markets.

Table 2 reports the descriptive statistics for all variables. The average ROA and ROE are 5.2% and 9.6%, respectively, suggesting moderate profitability among firms operating in environmentally sensitive industries. The average ESG score of 45.385 indicates that sampled firms have not yet achieved a high level of sustainability performance, reflecting considerable room for improvement. Regarding board characteristics, the mean board size (BS) is approximately 9.5 directors, consistent with a governance structure that balances decision-making efficiency with oversight capacity. Board independence (BI) averages 42.5%, indicating a meaningful proportion of independent directors; however, board gender (BG) remains low at 14.6%, suggesting that female representation on corporate boards remains limited in this sample.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	4,152	.052	.0619	-.13	.28
ROE	4,152	.096	.117	-.35	.49
ESG	4,152	45.385	18.649	.77	88.28
BS	4,152	9.536	2.844	0	24
BI	4,152	.425	.124	0	.86
BG	4,152	.146	.117	0	.71
FS	4,152	14.904	1.785	8.48	19.79
FA	4,152	2.806	.742	0	4.79
FG	4,152	.091	1.579	-6.9	8.11
PPE	4,152	.582	.189	0	2.06
LV	4,152	.283	.177	0	.71
GG	4,152	.048	.031	-.095	.097
CT	4,152	.274	.446	0	1

Table 3 presents the pairwise correlation matrix and variance inflation factors (VIF) for all variables. The correlation coefficients indicate that variables below the threshold of <0.6 , suggesting that they do not indicate multicollinearity. The notably high correlation between ROA and ROE is theoretically expected, as both proxies capture firm profitability, albeit through different denominators, total assets and shareholders' equity, respectively. Furthermore, all VIF values range from 1.01 to 2.00, indicating that multicollinearity does not threaten the reliability and stability of the regression estimates.

The regression results show that ESG has no significant effect on either profitability proxy for environmentally sensitive firms in emerging markets (Table 4). One possible explanation is that ESG activities are not strong enough to affect profitability. Accounting-based measures such as ROA reflect a wide range of corporate activities, not only ESG-related practices (Huang, 2021). Huang (2021) also argues that the relationship between ESG and financial performance depends strongly on the context and industry characteristics. In environmentally sensitive industries, ESG engagement is often motivated by regulatory requirements and stakeholder pressure rather than value maximization (Khamisu et al., 2024). Our findings are consistent with M. Naeem et al. (2022), who reported no significant relationship between ESG and profitability in environmentally sensitive industries in emerging markets. However, our results differ from studies in developed markets that found a significant ESG-performance relationship (Ahmad et al., 2021; Aydoğmuş et al., 2022; De Lucia et al., 2020; Rahi et al., 2022). This difference may reflect weaker institutional environments in emerging markets, where firms often pay limited attention to transparency and accountability for their social and environmental impacts (Garcia & Orsato, 2020).

These findings challenge both shareholder and stakeholder theories. Shareholder theory focuses on maximizing returns for owners, while stakeholder theory emphasizes balancing the interests of employees, customers, communities, and other stakeholders. Legitimacy theory offers a more suitable explanation. It argues that firms must align their activities with societal norms and expectations to maintain their social acceptance. Thus, ESG practices may be driven mainly by the need to comply with regulations, respond to stakeholder expectations, and maintain legitimacy (N. Naeem et al., 2022).

Table 5 reports the fixed-effect moderation results using ROA and ROE as dependent variables. The findings show that board size, board independence, and board gender do not significantly moderate the ESG-firm performance relationship in environmentally sensitive industries in emerging markets. This is consistent with evidence that the governance role of board characteristics in this relationship is often weak, inconsistent, or context-dependent. Chancharat et al. (2026) found that board size did not significantly moderate the relationship among Thai listed firms. Similarly, Jung (2024) found that board independence did not significantly moderate the relationship among Chinese A-share listed companies. Meeprom et al. (2024) also showed that the moderating effect of board size varies across ESG dimensions.

Table 3 Correlation Matrix & VIF Values

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ROA	1.000												
(2) ROE	0.835	1.000											
(3) ESG	-0.035	0.003	1.000										
(4) BS	0.003	0.040	0.160	1.000									
(5) BI	0.010	-0.021	0.123	-0.137	1.000								
(6) BG	0.030	0.010	0.010	-0.100	0.159	1.000							
(7) FS	-0.152	-0.035	0.321	0.353	-0.235	-0.238	1.000						
(8) FA	-0.081	-0.073	0.184	0.190	0.003	-0.066	0.197	1.000					
(9) FG	0.229	0.217	-0.034	-0.002	-0.019	-0.0167	0.019	-0.003	1.000				
(10) PPE	-0.219	-0.165	0.071	0.174	-0.059	-0.101	0.402	0.132	-0.032	1.000			
(11) LV	-0.462	-0.249	0.057	0.131	-0.064	-0.053	0.407	0.017	-0.386	0.374	1.000		
(12) GG	0.144	0.142	-0.127	-0.024	0.029	0.0537	-0.081	-0.020	0.057	-0.073	-0.091	1.000	
(13) CT	-0.049	-0.009	-0.044	0.141	-0.257	-0.219	0.400	0.066	0.003	0.215	0.116	0.036	1.000
VIF			1.260	1.170	1.160	1.100	2.000	1.090	1.010	1.300	1.320	1.040	1.300

Table 4. Baseline Regression Results

	(1) ROA	(2) ROA	(3) ROA	(1) ROE	(2) ROE	(3) ROE
ESG	-0.0000316 (-0.34)	-0.0000504 (-0.54)	-0.0000033 (-0.35)	-0.000393 (-1.61)	-0.000410 (-1.67)	-0.000375 (-1.54)
BS	0.000133 (0.21)			-0.000936 (-0.58)		
BI		0.0221 (1.74)			0.0307 (1.15)	
BG			0.000375 (0.03)			-0.0138 (-0.49)
FS	0.00160 (0.20)	0.00195 (0.24)	0.00162 (0.20)	0.0207 (1.34)	0.0210 (1.36)	0.0208 (1.34)
FA	-0.0153 (-2.48) **	-0.0160 (-2.60) ***	-0.0153 (-2.51) **	-0.0307 (-2.34) **	-0.0311 (-2.37) **	-0.0298 (-2.30) **
FG	0.00579 (7.45) ***	0.00579 (7.48) ***	0.00579 (7.45) ***	0.0110 (6.21) ***	0.0110 (6.22) ***	0.0110 (6.21) ***
PPE	-0.149 (-6.04) ***	-0.147 (-6.02) ***	-0.149 (-6.04) ***	-0.265 (-5.64) ***	-0.263 (-5.63) ***	-0.265 (-5.65) ***
LV	-0.221 (-11.97) ***	-0.221 (-11.99) ***	-0.221 (-11.93) ***	-0.291 (-5.84) ***	-0.291 (-5.85) ***	-0.292 (-5.83) ***
GG	0.0699 (2.90) ***	0.0683 (2.84) ***	0.0702 (2.95) ***	0.182 (3.28) ***	0.177 (3.21) ***	0.180 (3.30) ***
CT	0.00877 (1.35)	0.00867 (1.34)	0.00878 (1.36)	0.0297 (1.63)	0.0295 (1.62)	0.0299 (1.64)
Constant	0.215 (1.99) **	0.204 (1.90) *	0.216 (2.00) **	0.118 (0.59)	0.0948 (0.47)	0.108 (0.54)
N	4,152	4,152	4,152	4,152	4,152	4,152
Within R ²	0.2696	0.2706	0.2696	0.1624	0.1627	0.1624

Note: t-statistics in parentheses: * p < 0.10. ** p < 0.05. *** p < 0.01.

Table 5. Regression Results

	(1) ROA	(2) ROA	(3) ROA	(1) ROE	(2) ROE	(3) ROE
ESG	0.000148 (0.59)	0.000151 (0.72)	-0.0000488 (-0.47)	-0.0001924 (-0.32)	-0.000480 (-1.20)	-0.000454 (-1.48)
BS	0.000934 (0.68)			-0.0000418 (-0.01)		
BI		0.0450 (1.56)			0.0227 (0.39)	
BG			-0.00557 (-0.19)			-0.0436 (-0.64)
ESG_BS	-0.0000179 (-0.78)			-0.0000199 (-0.40)		
ESG_BI		-0.000515 (-0.98)			0.000179 (0.16)	
ESG_BG			0.000124 (0.25)			0.000623 (0.49)
FS	0.00166 (0.21)	0.00208 (0.26)	0.00156 (0.19)	0.0208 (1.35)	0.0209 (1.35)	0.0205 (1.32)
FA	-0.0157 (-2.51) **	-0.0157 (-2.54) **	-0.0154 (-2.51) **	-0.0312 (-2.34) **	-0.0312 (-2.39) **	-0.0300 (-2.31) **
FG	0.00579 (7.45) ***	0.00580 (7.48) ***	0.00579 (7.45) ***	0.0110 (6.21) ***	0.0110 (6.22) ***	0.0110 (6.21) ***
PPE	-0.149 (-6.04) ***	-0.147 (-6.02) ***	-0.149 (-6.05) ***	-0.265 (-5.65) ***	-0.263 (-5.63) ***	-0.266 (-5.65) ***
LV	-0.221 (-11.97) ***	-0.221 (-12.03) ***	-0.221 (-11.94) ***	-0.291 (-5.84) ***	-0.291 (-5.85) ***	-0.292 (-5.86) ***
GG	0.0695 (2.87) ***	0.0681 (2.83) ***	0.0701 (2.95) ***	0.181 (3.26) ***	0.177 (3.21) ***	0.180 (3.30) ***
CT	0.00886 (1.36)	0.00859 (1.34)	0.00889 (1.37)	0.0298 (1.63)	0.0295 (1.62)	0.0304 (1.66) *
Constant	0.207 (1.88) *	0.192 (1.79) *	0.218 (2.01) **	0.110 (0.54)	0.0988 (0.47)	0.118591 (0.59)
N	4,152	4,152	4,152	4,152	4,152	4,152
Within R ²	0.2698	0.2710	0.2696	0.1625	0.1627	0.1625

Note: t-statistics in parentheses: * p < 0.10. ** p < 0.05. *** p < 0.01.

In contrast, studies from developed markets tend to show stronger evidence that board governance mechanisms can condition the ESG–performance relationship. For instance, Albitar et al. (2020), using FTSE 350 firms, showed that corporate governance mechanisms moderate the relationship between ESG disclosure and firm performance. Examining European firms, the results revealed that board size, board independence, and board gender significantly moderate this relationship (Alodat & Hao, 2025; Rossi et al., 2021). Related evidence: Brinette et al. (2024) showed that board gender diversity and board independence help mitigate the negative effect of ESG controversies on firm value among French-listed firms.

Variations in corporate governance can be attributed to differing levels of maturity in institutional and governance systems. In emerging countries, institutional factors more strongly influence firms to enhance ESG performance. In contrast, in developed countries, the board of directors assumes a more significant role due to the greater institutionalization of ESG and sustainability practices (Lozano & Martínez-Ferrero, 2022). This distinction highlights common governance weaknesses in emerging markets, such as concentrated ownership, limited board independence, insufficient ESG expertise, weak transparency, inconsistent disclosure practices, and inadequate regulatory enforcement (Nandan & Sinku, 2024). Furthermore, firms in emerging markets frequently lack the capacity to identify, measure, monitor, and integrate ESG risks into corporate risk management systems, resulting in reputational and stakeholder trust challenges (Tashman et al., 2019; Zioło et al., 2023). These issues are exacerbated by institutional duality, which requires firms to navigate local governance requirements, international ESG expectations, cultural pressures, and market demands concurrently (Nandan & Sinku, 2024).

CONCLUSION

This study examines the relationship between environmental, social, and governance (ESG) practices and firm profitability, as well as the moderating effect of board characteristics, using 4,152 firm-year observations from environmentally sensitive industries in Asia-Pacific emerging markets between 2014 and 2024. The results indicate that ESG engagement does not significantly affect profitability. This finding suggests that ESG activities in these industries may be driven primarily by institutional pressures, regulatory compliance, and legitimacy concerns rather than value-maximizing objectives. Furthermore, board characteristics do not significantly moderate the ESG–profitability relationship, implying that existing firm-level governance mechanisms may be inadequate for translating ESG engagement into financial returns in contexts where institutional development, regulatory clarity, and governance structures are still in transition.

These findings have several implications. Policymakers are encouraged to strengthen ESG regulatory frameworks by implementing clearer sector-specific reporting standards, more robust enforcement mechanisms, mandatory assurance, and board-level ESG capacity development. Such measures could reduce symbolic compliance and enhance disclosure quality. Managers are advised to integrate ESG considerations into core business strategy,

operational efficiency, and risk management, rather than treating ESG solely as a compliance requirement. This approach may enable ESG initiatives to contribute more directly to long-term competitiveness and sustainable value creation. The study is limited to environmentally sensitive firms in Asia-Pacific emerging markets, utilizes Refinitiv Eikon ESG data, adopts the MSCI emerging-market classification, and relies on accounting-based profitability measures. Future research could expand the scope to include developed Asia-Pacific economies, alternative ESG databases or market classifications, and market-based performance indicators to more comprehensively assess the long-term financial effects of ESG.

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