ORIGINAL ARTICLE

OPEN ACCESS

The Three ESG Pillars, Firm Value and Financial Performance: A Comparison of Developed and Emerging Markets.

Ozair Siddiqui[1], Naveed Khan[2], Muhammad Khalid Sohail

Author's Affiliation:

[1,2]Lecturer, Faculty of Management Sciences, International Islamic University, Islamabad Pakistan
[3]Department of Management Studies, Bahria University, Islamabad Pakistan

Article History:

Submitted: February 23, 2024
Revised: May 07, 2024
Accepted: May 19, 2024
Published online: June 30, 2024

Corresponding author(s):

Ozair Siddiqui
ozair.siddiqui@iiu.edu.pk

ABSTRACT

Purpose - The current study examines the impact of E, S, and G factors separately on firm performance and value of developed and emerging markets, a perspective overlooked in current literature.

Study Design/Methodology/Approach - The study uses a large international sample comprising 614 non-financial firms with 8,484 unbalanced observations, segregated between emerging and developed markets. The study estimates the output using the Generalized Least Square (GLS) technique.

Findings - Our study presents two novel findings in these markets. In the case of developed markets, we find that E, S, and G positively affect firm financial performance and firm value. However, in emerging markets we find that E, S, and G have mixed (that is, negative and positive, and significant and insignificant) effects on firm performance and firm value.

Practical Implications- Our findings show that the positive impact of ESG pillars on firm value and performance in developed markets must incentivize senior management to enhance their sustainability commitment, a model that should be replicated in emerging markets as well. Additionally, from the perspective of regulatory bodies, specifically considering emerging markets, our findings can help in understanding the causes of the unfavorable association between ESG practices, investor expectations, and firm performance.

Originality/Novelty- Previous literature mainly focuses on the overall ESG score when evaluating its impact on firm-specific variables. Additionally, the institutional settings and market dynamics of developed and emerging markets are significantly different and must be considered when interpreting results or developing empirical models. The current study addresses these gaps

Keywords: ESG, Financial performance, Firm value, developed markets, Emerging markets

1 | INTRODUCTION

The global economy faces considerable consequences of climate change, depletion of natural resources, and corporate scandals, increasing the concerns regarding corporate sustainable practices (Money & Schepers, 2007). Stakeholder theory (Freeman, 2010) attempts to cater to these concerns by holding firms accountable to a wider stakeholder group, not just the shareholders (Parmar et al., 2010). Agreeing with Freeman's (2010) notion, many studies provide empirical evidence that ESG principles do improve wider stakeholder confidence

in a company, reducing the cost for firms and improving their financial performance (Friede et al., 2015). Moreover, the new paradigm of sustainability, based on ESG factors, is increasingly becoming the basis for investment decisions (Avarmou et al., 2022; Yang et al., 2022). As such, several studies document that ESG strategies improve the value of a firm from shareholders' perspective (Hong & Kacperczyk, 2019; Luo & Balvers, 2017; Pastor et al., 2021, 2022; Zerbib, 2020; Zhang & Lucey, 2021).

Additionally, ESG integration in investment appraisal techniques has shown that these investments outperform the market during periods of uncertainty (Engelhardt et al., 2021). Cornell and Shapiro (2021) show that addressing the ESG issues not only helps the firms manage stakeholder relations but also improves brand values and corporate reputations, which simultaneously increases the market value of firms. In the past decade, companies around the world have been trying to reduce the risks arising from ESG issues (Mondal et al., 2022).

Overall, the current literature is quite rich in examining the impact of ESG factors on various firm-specific factors like performance, size, value, and risk. However, the previous literature mainly focuses on the overall ESG score when evaluating its impact on such variables. Additionally, the institutional settings and market dynamics of developed and emerging markets are significantly different and must be considered when interpreting results or developing empirical models. As such, this study addresses these two gaps in the current literature by examining the impact of E, S, and G factors on firm performance and the value of developed and emerging markets. Our study presents two novel findings in these two markets. Where in the case of developed markets, we find that E, S, and G positively affect firm financial performance and firm value. However, in emerging markets we find that E, S, and G have mixed (that is, negative and positive, and significant and insignificant) effects on firm performance and firm value. Later, we perform a robustness check to validate our earlier findings. Our study theoretically contributes to the existing literature by validating the notions of three main theories (Legitimacy, Agency, and Stakeholder), considering them separately from the perspective of developed and emerging markets. The findings of the study also have practical implications for regulators, practitioners, and policymakers, discussed in later sections.

2 | LITERATURE REVIEW

2.1 | Theoretical Support

ESG risks have become quite popular over the years. Literature has used various theoretical grounds to support the linkage of these risks with various macro, micro, and firm-specific factors. One popular theory commonly used to support the linkages of ESG factors with firm-specific factors (like firm performance, value, size, risk, etc.) is the Legitimacy theory, credited to Dowling and Pfeffer (1975). This theory states that firms must align their strategies and operations to meet societal expectations and norms, to stay competitive and relevant (Olateju et al., 2021). ESG factors have proven to be much in demand, not just by the investors but by the regulatory bodies as well (see, e.g., Bruno & Lagasio, 2021; Redondo-Alamillos & de Mariz, 2022; Singhania & Saini, 2022). Considering the notions of Legitimacy theory and the growing interest of nearly all stakeholder groups in ESG factors, it has become very important for firms to consider their ESG risks and performance.

Similarly, another theory commonly linked in the literature with the ESG factors is the Agency theory (not directly credited to a single author, but usually associated with Jensen & Meckling (1976)), specifically when interpreting the impact of ESG factors on firm-specific factors in emerging markets (Feng et al., 2022; Lee & Isa, 2020; Suttipun, 2021). More specifically, the work of Feng et al. (2022) provides strong evidence to support the notions of Agency theory in developing markets, where ESG factors show a negative relationship with firm returns. The reason for this association is tied to the fact that inefficient markets and weak institutional settings of emerging markets (when compared with developed markets, as highlighted by Fan et al. (2011)) make it rather difficult to transfer the increased costs to the investors, to control the agency costs.

Finally, the literature also links ESG factors and firm-specific factors quite extensively using the Stakeholder theory (credited to Freeman (2010)). According to Henisz and McGlinch (2019), firms prefer to avoid negative long-term consequences, and as such, must consider wider stakeholder groups when making economic decisions. Literature links Stakeholder theory with ESG and firms through two avenues. Firstly, it is argued that ESG factors reduce risk associated with the investment of companies, improving firm performance (Huang, 2021). Secondly, the literature links improved firm reputation due to ESG considerations, with increasing firm value (Huang, 2022). Although, Signori et al. (2021) argue that the improved value is primarily due to larger size, and not due to ESG performance. Additionally, Siddiqui et al. (2024) argue that the form of ESG relationship (that is, linearity vs. non-linearity) and institutional and market settings (that is, developed vs. emerging markets) must be considered when examining the impact of ESG with firm-specific variables. Nonetheless, considering a holistic extract of literature, we can conclude that Stakeholder theory argues that ESG performance should be linked with improved firm performance and value. Based on the understanding developed from Legitimacy, Agency, and Stakeholder theories, modern literature provides ample evidence that ESG factors show a significant impact on various firm-specific factors, for example, firm performance (Rastogi et al., 2023), firm value (Rastogi et al., 2023), and firm risk (Farah et al., 2021; Valls Martínez et al., 2022).

2.2 | Association between ESG and Firm Value

Current literature has rigorously examined the impact ESG factors have on the value of the firms. However, an important aspect to note here is that although the literature testing the impact of ESG factors on firm value is quite diverse and enriched, it lacks a consensus. This is expected when dealing with a complicated construct like ESG. For example, Wu et al. (2022) show that in China, ESG performance has a positive impact on firm value in only two out of the three regions tested. As such, these findings show that institutional settings play a very significant role in establishing the link between ESG performance and firm value (that is, the impact can differ even in country-specific studies if the sample is divided geographically). Such complication is confirmed by Rastogi et al. (2023) as well for the Indian market.

On the other hand, the study of Aydoğmuş et al. (2022) provides relatively simpler findings where the sample mainly represented developed markets. This study shows a positive impact of the three ESG pillars on both firm value and performance. These findings are corroborated by Qureshi et al. (2020), who again majorly focused on the developed markets, considering the sample that was selected for the analysis. Nonetheless, a general disagreement in the findings of the emerging markets makes this area more interesting, especially

considering the views of Fan et al. (2011). The authors highlight the importance of taking into account the different institutional settings among nations when examining and interpreting complex constructs like ESG. Additionally, the bulk of the literature examining the impact of ESG factors on firm value does not examine the three ESG pillars separately, which would enable a deeper insight into how this construct impacts firm value in different market settings. The two most popular proxies used in the literature to represent firm value is Tobin's Q (Aydoğmuş et al., 2022; Rastogi et al., 2023) and market capitalization of the firms (Garcia et al., 2019). Both these measures are thoroughly used, although Șerban et al. (2022) highlight that market capitalization helps enable a thorough insight into the growth aspect of the firm as well (as it enables a deeper classification of firms, revealing growth rates and risks as well). Cheng et al. (2023) investigate the impact of ESG performance on firm value in the Chinese market. The author employed a fixed effect regression model and found that ESG-related information positively affects firm value. Feng and Wu (2023) find that REITs with higher levels of ESG disclosure reduce the cost of debt. Further, it documents that improving the result of ESG helps REITs gain better access to the financial market and enhance corporate financial flexibility. Similarly, Hong et al. (2024) find that environmental regulation has a positive and significant impact on firm value. Bagh et al., (2024) document that ESG practices nonlinearly affect firm value. Based on the understanding developed from theory and literature, we hypothesize the following link between ESG factors and firm value:

H1(a): *The three ESG pillars improve firm value in developed markets.*

H1(b): *The three ESG pillars improve firm value in emerging markets.*

2.3 | Association between ESG and Firm Performance

The literature is quite thorough when examining the impact of ESG on firm performance as well. Considering different aspects and perspectives several studies examined the impact of ESG on firm performance (Alareeni & Hamdan, 2020; Aydoğmuş et al., 2022; Bissoondoyal-Bheenick et al., 2023; Carnini Pulino et al., 2022; Cho, 2022; Hira et al., 2023; Maji and Lohia, 2023; Pu, 2023; Saygili et al., 2022; Shaikh, 2022; Yawika & Handayani, 2019). Generally, the literature has consonance here as well, where ESG factors show a positive relation with firm performance. Similarly, Huang (2021) documents that ESG factors positively affect firm performance. Further, it argues that ESG factors mainly ensure that firms make profit in a sustainable manner, instead of improving the performance of the firms.

However, few studies also show a negative association of ESG factors with firm performance. For example, Garcia and Orsato (2020) demonstrate that ESG factors are negatively correlated with firm performance in emerging markets. Finally, the work of Folger-Laronde et al. (2022) also corroborates such findings by demonstrating that exchange-traded funds do not protect during economic crises or recession in Canada. Khan (2022) documents that the majority of the literature demonstrates that ESG factors are associated with improving firm performance (even if they have a modest or mild impact). Additionally, similar to firm value, literature uses various proxies for representing firm performance as well. However, the three most commonly used proxies include return on assets (or ROA) (Aydoğmuş et al., 2022; Carnini Pulino et al., 2022; Cho, 2022), return on equity (ROE) (Alareeni and Hamdan, 2020; Cho, 2022), and Tobin's Q

(Bissoondoyal-Bheenick et al., 2023; Cho, 2022). Modern literature shows a preference for using Tobin's Q as the proxy for firm performance, considering that it is a market-based performance measure, thus it covers the performance aspect of firms from an investor's perspective (Li et al., 2020). Veeravel et al. (2024) find that ESG positively affects firm financial performance. Further, it documents that firms looking to boost their performance need to pay more focus more on ESG disclosure practices.

Although the literature covering ESG and firm performance is relatively richer as compared to ESG and firm performance, notions of Fan et al. (2011) apply here as well. As such, the authors' findings would argue to evaluate the impact of a complex construct like ESG on firm performance considering the institutional background of the countries. Therefore, an assessment of developed and emerging markets separately would provide better insights. Additionally, insights from the three ESG pillars on firm performance have not been thoroughly evaluated as well. To conclude, although the literature is quite diverse and wide when examining the impact of ESG factors on firm value and firm performance, however, it lacks a thorough evaluation of the three pillars separately. Especially, considering the contradicting results obtained for emerging and developed markets, it is important to compare and contrast the impact of the E, S, and G factors on firm value and performance. As such, considering the notions of Legitimacy theory and analyzing the literature, this study hypothesizes the following relationship between ESG factors and firm performance:

H2(a): *The three ESG pillars improve firm performance in developed markets.*

H2(b): *The three ESG pillars improve firm performance in emerging markets.*

3 | METHODOLOGY & DESIGN

3.1 | Research Design and Sample

We use a quantitative research design to test the hypotheses of the study using an international sample comprising a total of 11 countries and 614 non-financial firms. Of these, 438 non-financial firms belong to developed markets, and the remaining 176 represent emerging markets. The data is collected from 2008 to 2021, totaling 8,484 unbalanced panel observations. The sample construction is summarized in Table 1.

Table 1

Sample Construction

		Developed	Emerging	Total
Countries		6	5	11
Total firms		1,500	1,362	2,862
Less: financial firms		(86)	(42)	(128)
Less: Firms with missing data		(976)	(1,144)	(2,120)
Net firms included in the sample		438	176	614
Total unbalanced observations		6,090	2,394	8,484
Country-wise breakup				
Country	**Market**	**Companies**	**Observations**	**%**
USA	Developed	179	2,498	29%
UK	Developed	88	1,222	14%
Germany	Developed	40	551	6%

France	Developed	48	669	8%
Netherlands	Developed	35	490	6%
Switzerland	Developed	48	660	8%
Brazil	Emerging	30	392	5%
China	Emerging	26	361	4%
India	Emerging	38	527	6%
South Africa	Emerging	71	963	11%
Turkey	Emerging	11	151	2%
Total		**614**	**8,484**	**100%**

Note: *This table shows the detailed breakup of the sample of the study.*

3.1 | Data Collection and Variables

E, S, and G index scores represent three independent variables of the study. The two dependent variables for firm value and performance are Tobin's Q and the natural log of market capitalization of firms. The study uses market-based measures for both firm value and performance, as they are usually preferred in the literature on the grounds of providing better insights into the growth and risk aspects of firms (Șerban et al., 2022). Data is gathered from Thomson Reuters DataStream for all the variables of the study, except for GDP, which is collected from World Bank DataBank (2023). Variables' definitions, measurements, and other relevant details are available in Table 2.

Table 2

Variable definition and measurement

Variable	Definition and measurement	Symbol	Classification	Reference
Tobin's Q	Market capitalization divided by the total assets of the company	TOBINQ	Dependent	Li et al. (2020)
Market capitalization	Total issued share capital multiplied by the market value per share	LNMCAP	Dependent	Garcia et al. (2019); Șerban et al. (2022)
E, S, and G Indexes	Environmental, social, and governance indexes of the firm	EESG, SESG, GESG	Independent	Wu et al. (2022)
Total assets	Total assets of the firm (expressed in natural log form)	LNASST	Control	Khan (2022)
Debt to equity ratio	Total (non-current plus current) debt divided by the total capital	LEV	Control	Khan (2022); and Verga Matos et al. (2020)
Gross domestic product	The total of gross value added in the economy, adding product taxes and subtracting subsidies	GDP	Control	Diaye et al. (2022)

Note: *This table shows the definition, measurement, and classification of the variables of the study.*

3.2 | Empirical Models and Testing Approach

We estimate the following two equations for developed and emerging markets separately. We perform the Redundant Fixed Effects Test first to check if the fixed effects are unnecessary. The Hausman Test is used to decide between the preference of fixed and random effects. Therefore, to enable comparison, our baseline estimations are a total of four in number, two for Equation 1, and two for Equation 2 (Table 6).

Equation 1

$$LNMCAP_{i,t} = \alpha_0 + \alpha_1 EESG_{i,t*} + \alpha_2 SESG_{i,t*} + \alpha_3 GESG_{i,t*} + \alpha_4 LNASST_{i,t*} + \alpha_5 LEV_{i,t*} + \alpha_6 LNGDP_{j,t*} + \delta_{i,t}$$

Equation 2

$$TOBINQ_{i,t} = \beta_0 + \beta_1 EESG_{i,t*} + \beta_2 SESG_{i,t*} + \beta_3 GESG_{i,t*} + \beta_4 LNASST_{i,t*} + \beta_5 LEV_{j,t*} + \beta_6 LNGDP_{j,t*} + \varepsilon_{i,t}$$

All the dependent variables are regressed in their lag form to control for the potential problem of endogeneity. The subscript 'i' represents firm, 't' represents time, 't*' represents first lag, and 'j' represents country. Additionally, 'α' and 'β' are the respective coefficients, and 'δ' and 'ε' are the respective error terms. Variables have been transformed where necessary to improve their linearity.

We perform Unit Root Tests to check stationarity for all variables before estimating the outputs. This is because one of the main concerns in estimating panel data is the stationarity of the variables. Stationarity is an important assumption of regression techniques, where the estimation of non-stationarity variables might indicate a spurious relationship (Lau et al., 2019). To test for stationarity, we perform four Unit Root Tests, which include: Levin, Lin & Chut Test; Pesaran and Shin Test; Augmented Dickey-Fuller Test (ADF); and Phillips Perron Test (PP). We also check for the robustness of our findings by estimating the following equations.

Equation 3a

$$LNMCAP_{i,t} = \gamma_0 + \gamma_1 EMRG_{i,t*} + \gamma_2 EESG_{i,t*} + \gamma_3 (EMRG_{i,t*} \times EESG_{i,t*}) + \gamma_4 LNASST_{i,t*} + \gamma_5 LEV_{i,t*} + \gamma_6 LNGDP_{j,t*} + \epsilon_{i,t}$$

Equation 3b

$$LNMCAP_{i,t} = \lambda_0 + \lambda_1 EMRG_{i,t*} + \lambda_2 SESG_{i,t*} + \lambda_3 (EMRG_{i,t*} \times SESG_{i,t*}) + \lambda_4 LNASST_{i,t*} + \lambda_5 LEV_{i,t*} + \lambda_6 LNGDP_{j,t*} + \zeta_{i,t}$$

Equation 3c

$$LNMCAP_{i,t} = \vartheta_0 + \vartheta_1 EMRG_{i,t*} + \vartheta_2 GESG_{i,t*} + \vartheta_3 (EMRG_{i,t*} \times GESG_{i,t*}) + \vartheta_4 LNASST_{i,t*} + \vartheta_5 LEV_{i,t*} + \vartheta_6 LNGDP_{j,t*} + \theta_{i,t}$$

Equation 4a

$$TOBINQ_{i,t} = \rho_0 + \rho_1 EMRG_{i,t*} + \rho_2 EESG_{i,t*} + \rho_3 (EMRG_{i,t*} \times EESG_{i,t*}) + \rho_4 LNASST_{i,t*} + \rho_5 LEV_{i,t*} + \rho_6 LNGDP_{j,t*} + \mu_{i,t}$$

Equation 4b

$$TOBINQ_{i,t} = \pi_0 + \pi_1 EMRG_{i,t*} + \pi_2 SESG_{i,t*} + \pi_3 (EMRG_{i,t*} \times SESG_{i,t*}) + \pi_4 LNASST_{i,t*} + \pi_5 LEV_{i,t*} + \pi_6 LNGDP_{j,t*} + \varpi_{i,t}$$

Equation 4c

$$TOBINQ_{i,t} = \tau_0 + \tau_1 EMRG_{i,t*} + \tau_2 GESG_{i,t*} + \tau_3 (EMRG_{i,t*} \times GESG_{i,t*}) + \tau_4 LNASST_{i,t*} + \tau_5 LEV_{i,t*} + \tau_6 LNGDP_{j,t*} + \nu_{i,t}$$

Where in Equations 3a-4c, EMRG is the dummy variable, having a value of unity if the observation pertains to an emerging market, otherwise has a value of null. The idea being tested in the robustness check is whether the slope and constant dummy representing the observations of emerging markets significantly differ from the developed markets or not. If the constant dummy and coefficient of the interactive term appear significantly different from zero, this would indicate that the ESG coefficients for developed and emerging markets statistically differ from one another. The reason for estimating the E, S, and G index scores separately, unlike in our baseline regression (Equations 1 and 2) is to control for the potential problem of multicollinearity.

Although the correlation matrix (Table 5) shows none of the correlations is stronger than 80%, however, the social and environmental pillars show a positive correlation of 74%. Regressing the three pillars separately for robustness helps further strengthen the findings of the study.

4 | RESULTS AND ANALYSIS

We start by testing the stationarity of the variables. The following table shows the results for the four Unit Root Tests. The results show that all the variables of the study are stationarity at a level. This demonstrates that the variables do not show problems with stationarity, indicating that we can test the panel data using a random and fixed effects approach.

Table 3

Unit Root Tests for Stationarity

	Levin, Lin & Chut		**Pesaran and Shin**		**ADF**		**PP**	
				Level				
TOBINQ	**-34.629**	***	**-10.2073**	***	**1913.39**	***	**2230.11**	***
LNMCAP	**-38.8002**	***	**-13.5212**	***	**2055.51**	***	**2300.02**	***
EESG	**-42.2608**	***	**-11.2749**	***	**1887.63**	***	**2071.89**	***
SESG	**-27.5473**	***	**-7.13848**	***	**1605.78**	***	**1697.07**	***
GESG	**-37.7561**	***	**-14.265**	***	**2140.36**	***	**2349.59**	***
LNASST	**-29.3146**	***	**-5.29793**	***	**1610.93**	***	**1745.44**	***
LEV	**-28.2792**	***	**-6.13046**	***	**1638.05**	***	**1850.39**	***
LNGDP	**-64.6885**	***	**-0.35666**	***	**3566.05**	***	**4651.09**	***

***Note**: This table shows results for four Unit Root Tests, showing stationary at a level for all variables. All values are significant at 1%.*

Further, Table 4 shows the summary of the descriptive statistics selected in the study. The table divides the descriptive statistics into developed and emerging market data. For developed markets, leverage shows the highest dispersion. When comparing the three ESG index scores, the highest dispersion is shown by the environmental index score. However, the highest mean and median (measures of central tendency) are shown by the social index score.

Shifting the focus to the emerging markets, the highest dispersion is shown by the GDP of the emerging markets. The highest dispersion among the three ESG index scores is demonstrated by the environmental index score as well. However, for emerging markets, the highest mean and median are shown by governance index score instead.

Referring to the dependent variables, both Tobin's Q and the market capitalization of firms show relatively stable values when considering standard deviation. Additionally, as expected, the mean values of both dependent variables and the three ESG scores are higher for the developed markets than the emerging markets.

Table 4

Descriptive statistics

	Obs.	Avg	Med	SD	Min
Developed					
TOBINQ	6090	1.53	1.01	2.78	0.00
LNMCAP	6090	9.59	9.71	1.80	-11.51
EESG	6090	59.63	65.13	25.47	0.00
SESG	6090	64.30	68.14	22.00	0.26
GESG	6090	59.26	62.15	21.90	0.70
LNASST	6090	16.54	16.55	1.47	7.53
LEV	6090	43.28	39.18	106.78	0.00
LNGDP	84	29.20	28.63	29.44	27.04
Emerging					
TOBINQ	2394	1.44	0.74	2.07	0.01
LNMCAP	2394	8.18	8.39	1.68	1.23
EESG	2394	46.49	48.25	25.26	0.00
SESG	2394	53.07	53.69	22.89	0.28
GESG	2394	54.85	56.10	20.93	2.17
LNASST	2394	15.34	15.32	1.74	9.75
LEV	2394	33.95	33.74	22.73	0.00
LNGDP	70	28.79	28.19	29.04	26.48

***Note**: This table lists the summary statistics of the variables of the study. The table is separated between developed and emerging markets. Obs. are observations, Avg is mean, Med is median, SD is standard deviation, and Min is minimum value.*

Similarly, Table 5 demonstrates the correlation among the variables of the study. The highest positive correlation is demonstrated by environmental and social index scores, which are around 74%. Similarly, the log of total assets and the log of market capitalization also show a very high positive correlation (around 73%). However, as one is a control and the other is a dependent variable, this high correlation is not of concern. Additionally, the high correlation between environmental and social index scores is expected, however, as it is below 80%, the study does not regress the three index scores separately. Nonetheless, this has been accounted for in the robustness check performed in the study (as explained earlier). Further, the strongest negative correlation is shown by Tobin's Q and natural log of total assets. This negative correlation is also expected, due to how Tobin's Q is computed (refer to Table 2).

Table 5

Correlation Matrix

	TOBINQ		LNMCAP		EESG		SESG		GESG		LNASST		LEV		LNGDP
TOBINQ															
LNMCAP	0.11	***													
EESG	-0.08	***	0.38	***											
SESG	-0.03	**	0.63	***	0.74	***									
GESG	-0.02	*	0.22	***	0.37	***	0.43	***							
LNASST	-0.24	***	0.73	***	0.48	***	0.41	***	0.25	***					
LEV	-0.04	***	0.02	**	0.04	***	0.03	***	0.02	**	0.07	***			
LNGDP	0.08	***	0.56	***	0.11	***	0.08	***	0.11	***	0.51	***	0.05	***	

Note: This table shows the correlation among the variables. Only values significant at 10% or below are demonstrated.

Table 6 shows the estimation results. Both (Equations 1 and 2) are regressed separately for developed and emerging markets. The results are rather interesting, specifically for emerging markets. All three ESG pillars show a positive impact on firm value in developed markets. Additionally, the impact is statistically different from zero (henceforth, we refer to the phrase 'statistically different from zero' as 'statistically significant' for simplicity and clarity). However, when considering the results of emerging markets, the environmental pillar does show a statistically significant relationship with firm value. However, the social pillar demonstrates a negative impact on firm value in emerging markets, which is statistically significant as well. Finally, the governance pillar shows a weakly significant impact on firm value in emerging markets, and interestingly, the value of the coefficient for the governance pillar is higher than in the developed markets. As such, our results show that the overall impact of ESG pillars on firm value is significantly different between developed and emerging markets.

Table 6 shows extremely high values for R2 and Adj-R2 due to the problem of cross-sectional dependence and including control variables showing very low variation between firms, as highlighted by deHaan (2021). We control cross-sectional dependence by regressing all the explanatory variables in their first lag form and using cross-sectional weights to generalize the estimation. However, this inflates the values for R2 and Adj-R2 for fixed effects estimation techniques. As explained by deHaan (2021), estimation still presents unbiased estimators in such cases, therefore, we do not go for the alternative of developing a multilevel model in our study.

Table 6

Estimation Outputs

	Equation 1 (LNMCAP) Fixed effects				**Equation 2 (TOBINQ) Fixed effects**			
	Developed		**Emerging**		**Developed**		**Emerging**	
C	**-32.4961**	***	0.7379		**-31.6013**	***	**1.4077**	**
EESG	**0.0049**	***	0.0002		**0.0046**	***	-0.0006	
SESG	**0.0065**	***	**-0.0020**	**	**0.0058**	***	**-0.0011**	**
GESG	**0.0008**	***	**0.0010**	*	0.0004		-0.0002	
LNASST	**0.6429**	***	**0.6312**	***	**-0.1722**	***	**-0.1097**	***
LEV	**0.0000**	***	**-0.0129**	***	0.0000		**-0.0088**	***
LNGDP	**1.0542**	***	-0.0626		**1.2112**	***	**0.0753**	**
R^2	0.9798		0.9400		0.8496		0.8074	
Adj- R^2	0.9780		0.9347		0.8368		0.7902	
F-Stat	**569.1591**	***	**176.3000**	***	**66.4027**	***	**47.1426**	***
Redundant Fixed Effects Test								
Cross-section F	**269.3695**	***	**50.9680**	***	**50.7331**	***	**40.6192**	***
Hausman Test								
Cross-section Random	**112.1864**	***	**1133.1966**	***	**142.4289**	***	**44.2871**	***

Note: *This table shows the estimation output for Equations 1 and 2, The Redundant Fixed Effects Test is used to test if the fixed effects of the cross-sections are redundant and unnecessary or not (to determine if the fixed effects approach is preferred over the common effects approach). The results show that the fixed effects are not redundant and must be considered during estimation. Further, the Hausman Test is used to determine if the estimation output of random effects is superior to fixed effects. For both equations, preference is shown for fixed effects. Cross-section weights (PCSE) are used as a coefficient covariance method to enable robust results for both equations. Additionally, all the explanatory variables are regressed in their lag form to control for the potential problem of*

endogeneity. Further, cross-section weights are used as Generalized Least Square weights to control the cross-sectional dependency observed in the data. (*), (**), and (***) represent significance at 10%, 5%, and 1%, respectively.

Finally, we test for the robustness of our results by estimating Equations 3a-4c. Table 7 shows the results of the estimation, which are overall consistent with the findings of the study. For all the equations, the interactive term shows a significant relationship and the value of the interactive term for all the cases is negative. This shows that the value of the coefficients for ESG pillars is lower for emerging markets than the developed markets.

Table 7

Robustness Check

Equation	3a		3b		3c		4a		4b		4c	
C	**-12.0838**	***	**-11.8219**	***	**-12.1451**	***	**-14.3087**	***	**-13.6980**	***	**-14.2345**	***
EMRG	**0.5928**	***	**0.7509**	***	0.1667		**1.4996**	***	**1.4438**	***	**1.0887**	***
EESG	**0.0106**	***					**0.0169**	***				
EESG*EMRG	**-0.0138**	***					**-0.0191**	***				
SESG			**0.0118**	***					**0.0181**	***		
SESG*EMRG			**-0.0156**	***					**-0.0167**	***		
GESG					**0.0045**	***					**0.0079**	***
GESG*EMRG					**-0.0052**	***					**-0.0109**	***
LNASST	**0.6550**	***	**0.6523**	***	**0.7141**	***	**-0.3482**	***	**-0.3506**	***	**-0.2504**	***
LEV	**-0.0001**	***	**-0.0002**	***	**-0.0001**	***	**-0.0002**	**	**-0.0003**	**	**-0.0002**	**
LNGDP	**0.3521**	***	**0.3404**	***	**0.3331**	***	**0.7070**	***	**0.6824**	***	**0.6674**	***
F-Stat	**730.56**	***	**750.19**	***	**659.07**	***	**44.10**	***	**46.04**	***	**26.07**	***

Note: *This table shows the estimation output Equations 3 and 4 (robustness check). The estimations are done following random effects with cross-section weights (PCSE) used for the coefficient covariance method. (**) are significant at 5% and (***) are significant at 1%.*

5 | DISCUSSION

For developed markets, our findings support the notion of Stakeholder and Legitimacy theories. More specifically, our findings are consistent with the work of Sidhoum and Serra (2017), who document that environmentally friendly strategy, better working conditions, and stakeholder interest are the key parameters that enhance firm value. However, when considering the relative sizes of the coefficients for the three ESG pillars, our findings support the notions of Agency theory, where Brogi and Lagasio (2019) argue that governance aspects need more time to show their impact on firm value than other ESG pillars (specifically the social aspects). Additionally, our findings also corroborate the conclusions of Huang (2021), that although ESG pillars positively affect firm performance in developing markets, the impact of ESG appears quite modest.

Similarly, when considering the results of Equation 2 (firm performance), we see relatively consistent results. Here, the developed markets show the positive impact of ESG pillars on firm performance (though the impact of the governance pillar appears statistically insignificant, indicating that developed markets have evolved ahead of merely considering compliance with governance regulations). Another possible explanation for the insignificant impact of the governance pillar in developed markets on firm value can be inferred from the findings of Atif et al. (2022). The authors find that in the case of non-financial firms, ESG disclosures elevate the financial and market performance of firms, despite reducing the agency problem through enhanced monitoring. This is reflected in our findings as well, where the governance aspect shows an insignificant

impact on firm value for developed markets, reflecting the impact of agency costs, but social and environmental aspects improve the firm's value. On the other hand, the emerging markets demonstrate an inverse relationship between the three ESG pillars and firm performance. Additionally, only the social pillar shows a statistically significance association here. Furthermore, the estimation results for both developed and emerging markets significantly differ here as well, corroborating the findings of Siddiqui et al. (2024) and Fan et al. (2011). Therefore, the results show evidence that institutional settings and market dynamics have an impact on the association of ESG factors with the performance of the firms. Nonetheless, it is important to emphasize that these results contradict the general theoretical understanding developed based on Freeman's Stakeholder theory (2010).

Overall, our baseline results support the notions of Legitimacy theory for developed markets, corroborating the findings of Olateju et al. (2021). As ESG reporting for developed markets can be considered more sophisticated and detailed due to refined legislative and institutional settings (Fan et al. 2011), this can be considered as a reason why the E and S pillars of the ESG show stronger impact in developed markets, as compared to the developing markets. The findings also highlight the need for more robust and transparent reporting and governance frameworks for emerging markets, as highlighted by Siddiqui et al. (2024). The regulatory institutions of emerging markets need to ensure the integration of ESG factors in corporate strategies. This can be achieved through effective intervention policies, rebates, and concessions, not just at local levels but at the global stage as well. ESG integration and sustainable practices appear to be a global challenge, and emerging and developed markets need to combine their efforts to improve global sustainability. Additionally, consistent with the findings of Siddiqui et al. (2024), the current study also advocates for tangible association of ESG practices in the developed markets, providing evidence for the regulatory bodies and institutions of emerging markets that proper integration of local and global sustainability goals and targets do improve performance at firm level as well.

6 | CONCLUSION

Recent studies show a growing demand for alignment of ESG factors with stakeholders' objectives and regulatory requirements, which helps understand the association of ESG and firm-specific factors (like firm performance and value). Therefore, we examine if ESG pillars demonstrate a relationship with firm financial value and performance by taking an international sample comprising 614 non-financial firms (representing both developed and emerging markets) over a period of 2008 to 2021. After performing the panel data estimation, we find that ESG pillars are positively associated with firm value and performance in the context of developed markets. However, emerging markets show a rather complex relationship, demonstrating a mix of positive and negative association of three pillars with firm performance and value, which are significant for social (both firm performance and value) and governance (only firm value) pillars, and insignificant for the rest. Further, our baseline findings support the earlier findings of documented literature in the context of developed, and partially support the earlier literature on emerging markets. Further, to support our findings we perform robustness checks, which are overall consistent with our baseline estimation results. The interactive terms show a statistically significant and negative association for emerging markets. This demonstrates that, consistent with the theoretical understanding developed using notions of Fan et al. (2011),

the coefficient for ESG pillars is lower for emerging markets than developed markets. Considering the underlying theoretical assumptions, we also support the concept of Legitimacy theory for developed markets, and Agency theory for developing markets.

These findings are helpful for academics, regulators, and practitioners to enhance ESG commitment. Theoretically, we enhance the available literature by linking Legitimacy and Stakeholder theory for ESG factors and firm performance and value for developed markets. Additionally, we link Agency theory ESG factors with firm value and performance in emerging markets. Considering the practical implications of the study, our analysis shows that from practitioners' perspective, the positive impact of ESG pillars on firm value and performance in developed markets must incentivize senior management to enhance their sustainability commitment. Additionally, from the perspective of regulatory bodies, specifically considering emerging markets, our findings can help in understanding the causes of the unfavorable association between ESG practices, investor expectations, and firm performance. These reasons include inefficient capital markets, weak overall governance and regulatory frameworks, as well as a deficiency in sophisticated ESG reporting systems. As a result, authorities can concentrate on strengthening emerging market regulations.

Finally, we observe a few limitations of the current study. The primary limitation of our study is the issue of cross-sectional dependence in our sample. Unfortunately, this is a common problem in cross-country panel data. An industrial or sector-wise analysis can resolve this issue or apply other estimation techniques like the Generalized Method of Movements (GMM), after identifying appropriate instrumental variables. A possible future direction can be to follow either of these approaches to improve the quality of the findings. Additionally, a possible future direction can also be to test the long-term relationship of ESG factors with firm-specific variables in emerging and developed markets, either through panel cointegration, or empirical estimation of a long time period.

REFERENCE

Aboud, A., & Diab, A. (2019). The financial and market consequences of environmental, social and governance ratings: the implications of recent political volatility in Egypt. *Sustainability Accounting, Management and Policy Journal, 10*(3), 498-520.

Alareeni, B. A., & Hamdan, A. (2020). ESG impact on the performance of US S&P 500-listed firms. Corporate Governance: *The International Journal of Business in Society, 20*(7), 1409–1428.

Alsayegh, M.F., Rahman, A. R., & Homayoun, S., (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG
disclosure. *Sustainability, 12*(9), 3910.

Atif, M., & Ali, S. (2021). Environmental, social, and governance disclosure and default risk. *Business Strategy and the Environment, 30*(8), 3937-3959.

Atif, M., Liu, B., & Nadarajah, S. (2022). The effect of corporate environmental, social and governance disclosure on cash holdings: life-cycle perspective. *Business Strategy and the Environment, 31*(5), 2193-2212.

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review, 22*, S119–S127.

Bagh, T., Fuwei, J., Khan, M. A. (2024). Corporate ESG investment and firm's value under the real options framework: Evidence from two world-leading economies. *Borsa Istanbul Review*, https://doi.org/10.1016/j.bir.2024.01.002.

Bhaskaran, R. K., Ting, I. W. K., Sukumaran, S.K. & Sumod, S. D. (2020). Environmental, social and governance initiatives and wealth creation for firms: an empirical examination. *Managerial and Decision Economics, 41*(5), 710-729.

Bissoondoyal-Bheenick, E., Brooks, R., & Do, H. X. (2023). ESG and firm performance: The role of size and media channels. *Economic Modelling, 121*, 106203.

Bodhanwala, S., & Bodhanwala, R., (2023). Environmental, social and governance performance: influence on market value in the COVID-19 crisis. Management.

Decision. https://doi.org/10.1108/MD-08-2022-1084.

Brammer, S., Brooks, C. & Pavelin, S. (2006). Corporate social performance and stock returns: UK evidence from disaggregate measures. *Financial Management, 35*(3), 97-116.

Brogi, M., & Lagasio, V. (2019). Environmental, social, and governance and company profitability: are financial intermediaries different? *Corporate Social Responsibility and Environmental Management, 26*(3), 576-587.

Bruno, M., & Lagasio, V. (2021). An Overview of the European Policies on ESG in the Banking Sector. *Sustainability, 13*(22), 12641.

Carnini Pulino, S., Ciaburri, M., Magnanelli, B. S., & Nasta, L. (2022). Does ESG Disclosure Influence Firm Performance? *Sustainability, 14*(13), 7595.

Cheng, R., Kim, H., Ryu, D. (2023). ESG performance and firm value in the Chinese market. *Investment Analysts Journal*, https://doi.org/10.1080/10293523.2023.2218124.

Cho, Y. (2022). ESG and Firm Performance: Focusing on the Environmental Strategy. *Sustainability, 14*(13), 7857.

Crespi-Cladera, R., Martín-Oliver, A. & Pascual-Fuster, B. (2021), Financial distress in the hospitality industry during the Covid-19 disaster. *Tourism Management, 85*, 104301.

Cupertino, S., Consolandi, C. & Vercelli, A. (2019). Corporate social performance, financialization, and real investment in US manufacturing firms. *Sustainability, 11*(7), 1-15.

deHaan, E. (2021). Using and interpreting fixed effects models. *Available at SSRN 3699777 or http://dx.doi.org/10.2139/ssrn.3699777*

Diaye, M.-A., Ho, S.-H., & Oueghlissi, R. (2022). ESG performance and economic growth: a panel co-integration analysis. *Empirica, 49*(1), 99–122.

Dowling, J., & Pfeffer, J. (1975). Organizational Legitimacy: Social Values and Organizational Behavior. *The Pacific Sociological Review, 18*(1), 122–136.

Ellili, N.O.D. (2022). Impact of ESG disclosure and financial reporting quality on investment efficiency. Corporate Governance: *The International Journal of Business in Society, 22*(5).

Engelhardt, N., Ekkenga, J. & Posch, P. (2021). ESG ratings and stock performance during the COVID-19 crisis. *Sustainability, 13*(13), 7133.

Fan, J. P. H., Wei, K. C. J., & Xu, X. (2011). Corporate finance and governance in emerging markets: A selective review and an agenda for future research. *Journal of Corporate Finance, 17*(2), 207–214.

Farah, T., Li, J., Li, Z., & Shamsuddin, A. (2021). The non-linear effect of CSR on firms' systematic risk: International evidence. *Journal of International Financial Markets, Institutions, and Money, 71*, 101288.

Feng, J., Goodell, J. W., & Shen, D. (2022). ESG rating and stock price crash risk: Evidence from China. *Finance Research Letters, 46*, 102476.

Feng, Z., & Wu, Z. (2023). ESG Disclosure, REIT Debt Financing, and Firm Value. *The Journal of Real Estate Finance and Economics, 67*, 388–422.

Folger-Laronde, Z., Pashang, S., Feor, L., & ElAlfy, A. (2022). ESG ratings and financial performance of exchange-traded funds during the COVID-19 pandemic. *Journal of Sustainable Finance & Investment, 12*(2), 490–496.

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). Stakeholder theory: The state of the art.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233.

Garcia, A. S., & Orsato, R. J. (2020). Testing the institutional difference hypothesis: A study about environmental, social, governance, and financial performance. *Business Strategy and the Environment, 29*(8), 3261–3272.

Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. J. (2019). Corporate sustainability, capital markets, and ESG performance. In individual behaviors and technologies for financial innovations (pp. 287–309). Springer International Publishing. https://doi.org/10.1007/978-3-319-91911-9_13

Henisz, W.J., & McGlinch, J. (2019). ESG, material credit events, and credit risk. *Journal of Applied Corporate Finance, 31*(2), 105–117.