

ESG Performance and Firm Value in India: The Moderating Role of Board Gender Diversity Under the Mandatory BRSR Regime

Dr. Shobana R.¹, Sai Sona S.², Rakshana N. S.³

¹Assistant Professor, PSGR Krishnammal College for Women, Coimbatore, Tamil Nadu 641004, India

^{2,3}Students, BBA RM, PSGR Krishnammal College for Women, Coimbatore, Tamil Nadu 641004, India

ABSTRACT: Since the Securities and Exchange Board of India (SEBI) mandated Business Responsibility and Sustainability Reporting (BRSR) for the top 1,000 listed firms, environmental, social, and governance (ESG) disclosure has shifted from a voluntary signal to a regulatory requirement, renewing debate on whether ESG performance translates into shareholder value and how board composition conditions this link. Drawing on stakeholder theory and upper echelons theory, this study examines the relationship between firm-level ESG performance and firm value (Tobin's Q) among 210 non-financial firms listed on the NSE-500, using unbalanced panel data for the financial years 2019–20 to 2023–24 (N = 1,008 firm-years). Fixed-effects panel regression shows that ESG performance is positively associated with firm value ($\beta = 0.184, p < .01$), and that board gender diversity positively moderates this relationship ($\beta = 0.096, p < .05$), such that the ESG–value link is stronger for firms with more gender-diverse boards. Results are robust to alternative performance measures (ROA) and a two-stage least squares specification addressing endogeneity. The study contributes evidence on how governance composition shapes the financial payoff of mandatory ESG disclosure in an emerging-market regulatory setting.

KEYWORDS: ESG performance, firm value, board gender diversity, BRSR, panel regression, corporate governance, emerging markets

1. INTRODUCTION

Corporate sustainability disclosure in India has moved decisively from voluntary practice to regulatory mandate. SEBI's Business Responsibility and Sustainability Reporting (BRSR) framework, introduced in 2021 and tightened through the 2023 BRSR Core update, now requires the top 1,000 listed companies to report standardized, assured environmental, social, and governance metrics, including workforce diversity and board representation indicators. This regulatory shift has intensified a long-standing question in strategy and corporate finance research: does stronger ESG performance create or merely signal firm value, and does the composition of the board — particularly its gender diversity — change the strength of that relationship?

The managerial and policy problem motivating this study is that Indian firms are now compelled to invest resources in ESG data collection, assurance, and disclosure regardless of whether they expect a direct financial return, while investors and boards need evidence on whether governance characteristics amplify or dampen the value relevance of that disclosure. Prior international evidence on the ESG–financial performance nexus is mixed, and evidence specifically on the moderating role of board gender diversity in emerging-market, mandatory-disclosure settings remains limited despite India's distinctive combination of a 2013 mandatory gender-quota law and a 2021 mandatory sustainability-reporting regime operating simultaneously.

This study addresses two research questions. RQ1: Is firm-level ESG performance associated with firm value among Indian listed non-financial firms under the mandatory BRSR regime? RQ2: Does board gender diversity moderate the strength of the ESG–firm value relationship? The study contributes theoretically by testing an upper-echelons-informed boundary condition on the ESG–value relationship in a regulatory context where both ESG disclosure and board gender composition are legally mandated rather than voluntarily chosen, and contributes practically by informing corporate boards and policymakers on whether diversity mandates and sustainability mandates reinforce one another's financial payoff.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 ESG performance and firm value

Stakeholder theory holds that firms attending to the interests of a broad set of stakeholders — employees, communities, regulators, and the environment, not only shareholders — build reputational and relational capital that reduces risk and supports long-run value creation. Consistent with this logic, recent emerging-market evidence finds a bidirectional association between ESG and financial performance, with the strength and direction of the relationship varying by disclosure component and governance context. Other recent panel studies of gender diversity and financial performance around India's 2013 mandatory quota report measurable gains in accounting returns following compliance, suggesting that governance-linked disclosure reforms can carry real financial consequences rather than being purely symbolic.

H1: Firm-level ESG performance is positively associated with firm value.

2.2 Board gender diversity as a moderator

Upper echelons theory suggests that the demographic composition of top management and boards shapes strategic choices and the interpretation of stakeholder information, because directors' backgrounds and cognitive frames influence which signals the board attends to and how it allocates resources. A growing body of Indian and cross-national evidence associates gender-diverse boards with stronger environmental governance and more credible sustainability oversight, while recent sectoral evidence cautions that the ESG-enhancing effect of board gender diversity can be weaker or statistically insignificant outside specific sectors, indicating that the diversity–ESG relationship is context-dependent rather than universal. Building on this literature, gender-diverse boards are expected to strengthen — rather than merely coexist with — the financial payoff of ESG performance, because such boards are argued to provide closer oversight of sustainability strategy execution and more credible external signaling of governance quality to investors.

H2: Board gender diversity positively moderates the relationship between ESG performance and firm value, such that the relationship is stronger for firms with greater board gender diversity.

2.3 Research gap

Although several Indian studies examine board gender diversity's direct effect on ESG performance or on financial performance in isolation, few jointly model ESG performance, board gender diversity, and firm value within a single moderation framework specific to the post-BRSR mandatory disclosure period. This is the gap the present study addresses using panel data spanning the years immediately before and after the BRSR Core tightening.

3. METHODOLOGY

3.1 Sample and data sources

The study uses an unbalanced panel of 210 non-financial firms listed on the NSE-500 index, observed over five financial years (2019–20 to 2023–24), yielding 1,008 firm-year observations after excluding firms with missing BRSR or financial data. Financial firms were excluded owing to differing regulatory and balance-sheet structures. ESG performance scores were sourced from firms' BRSR filings and cross-validated against a third-party ESG data provider; financial and governance variables (Tobin's Q, ROA, board size, board independence, firm size, leverage, firm age) were compiled from CMIE Prowess and company annual reports.

3.2 Variable measurement

The dependent variable, firm value, is operationalized as Tobin's Q (market value of equity plus book value of debt, divided by book value of total assets); return on assets (ROA) is used as an alternative performance measure in robustness checks. The independent variable, ESG performance, is a composite score (0–100) aggregating environmental, social, and governance sub-scores disclosed under BRSR. The moderator, board gender diversity, is measured as the proportion of women directors on the board. Control variables include board size (natural log of total directors), board independence (proportion of independent directors), firm size (natural log of total assets), leverage (total debt to total assets), and firm age (years since incorporation), consistent with prior governance–performance literature.

3.3 Analytical strategy

A Hausman test was used to select between fixed-effects and random-effects panel estimators; the test favored the fixed-effects model ($\chi^2 = 34.62$, $p < .001$), which also controls for time-invariant unobserved firm heterogeneity. Year fixed effects were included

to absorb macroeconomic and regulatory shocks common to all firms (e.g., the BRSR Core rollout). Standard errors were clustered at the firm level to address heteroskedasticity and serial correlation. The moderation hypothesis (H2) was tested by introducing an ESG performance $\times$ board gender diversity interaction term, with both constituent variables mean-centered to reduce multicollinearity. As a robustness check, a two-stage least squares (2SLS) specification using lagged ESG performance and industry-average board gender diversity as instruments was estimated to address potential endogeneity between governance characteristics and firm value.

4. RESULTS

4.1 Descriptive statistics and correlations

The average ESG performance score across the sample was 58.3 (SD = 14.7), and the average proportion of women directors was 16.4% (SD = 7.2), modestly above the regulatory minimum implied by India's mandatory quota. Mean Tobin's Q was 1.72 (SD = 0.94). Pairwise correlations among key variables were below 0.60, and variance inflation factors (VIFs) for all regressors were below 4.0, indicating multicollinearity was not a material concern. Table 1 reports descriptive statistics for the core variables.

Table 1. Descriptive statistics (N = 1,008 firm-years).

Variable	Mean	SD	Min	Max
Tobin's Q	1.72	0.94	0.51	5.38
ESG Performance Score	58.3	14.7	22.0	89.5
Board Gender Diversity (%)	16.4	7.2	0.0	44.4
Board Size (directors)	9.8	2.4	5	17
Firm Size (ln total assets)	9.1	1.6	5.9	13.4

4.2 Panel regression results

The fixed-effects model explained a substantial share of within-firm variation in Tobin's Q (within $R^2 = 0.29$, $F = 21.7$, $p < .001$). As shown in Table 2, ESG performance was positively and significantly associated with firm value (H1 supported), and the ESG performance $\times$ board gender diversity interaction term was positive and significant (H2 supported), indicating that the value relevance of ESG performance is amplified in firms with more gender-diverse boards. Among controls, firm size and leverage were significant predictors of Tobin's Q, while board independence was not statistically significant in this specification.

Table 2. Fixed-effects panel regression results (dependent variable: Tobin's Q). Year fixed effects included; standard errors clustered by firm.

Predictor	β (Tobin's Q)	Robust SE	t-value	p-value
ESG Performance	0.184	0.041	4.49	< .01
Board Gender Diversity	0.062	0.038	1.63	.103
ESG $\times$ Board Gender Diversity	0.096	0.045	2.13	< .05
Board Size (ln)	-0.028	0.031	-0.90	.368
Board Independence	0.019	0.026	0.73	.466
Firm Size (ln assets)	0.147	0.052	2.83	< .01
Leverage	-0.211	0.067	-3.15	< .01

Robustness checks using ROA as an alternative dependent variable produced directionally consistent results for both the direct ESG effect and the interaction term, and the 2SLS specification retained a significant, positive coefficient on ESG performance, mitigating concern that the main findings are driven by reverse causality between firm value and ESG disclosure quality.

5. DISCUSSION

The findings indicate that ESG performance carries positive value relevance for Indian listed non-financial firms in the post-BRSR mandatory disclosure period, consistent with stakeholder-theoretic accounts in which credible non-financial disclosure reduces information asymmetry and perceived risk for investors. The significant positive interaction between ESG performance and board gender diversity supports an upper-echelons interpretation in which more gender-diverse boards translate ESG performance into firm value more effectively, plausibly through closer oversight of sustainability strategy execution and stronger external signaling of governance credibility, rather than through a mechanical or symbolic diversity effect alone.

5.1 Theoretical implications

This study extends the ESG–financial performance literature by demonstrating that a governance characteristic mandated under one regulatory instrument (the 2013 gender-quota law) conditions the value relevance of disclosure required under a separate, later instrument (BRSR), suggesting that India's overlapping governance and sustainability mandates may interact rather than operate independently — a boundary condition not well captured in single-country or single-mandate studies.

5.2 Managerial and policy implications

For corporate boards, the results suggest that meeting the minimum gender-quota threshold may be insufficient to fully capture the financial benefits of ESG investment; firms seeking to maximize the value relevance of sustainability disclosure may benefit from board gender diversity meaningfully above the regulatory floor. For policymakers, the complementarity between the two mandates offers a rationale for continuing to align gender-diversity and sustainability-disclosure regulation rather than treating them as separate compliance tracks.

5.3 Limitations and future research

The sample is limited to non-financial NSE-500 firms and a five-year post-BRSR window, which may limit generalizability to smaller listed firms, financial-sector firms, or longer time horizons. ESG composite scores aggregate environmental, social, and governance sub-dimensions that may have differing value relevance; future research could disaggregate these components and examine whether board gender diversity moderates each sub-dimension differently. Extending the analysis to other emerging markets with comparable overlapping mandates would further test the generalizability of the interaction identified here.

6. CONCLUSION

This study finds that ESG performance is positively associated with firm value among Indian listed non-financial firms under the mandatory BRSR regime, and that this relationship is significantly strengthened by board gender diversity. The results suggest that India's gender-quota and sustainability-disclosure mandates may be mutually reinforcing rather than independent compliance requirements, offering both a theoretical contribution to the ESG–governance literature and practical guidance for boards and regulators.

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