

CEO Characteristics, Board Gender Diversity, and Corporate Social Responsibility Performance: Evidence from Panel Data Across Asian Emerging Markets

Authors: Prof. Wen-Hua Zhang¹, Dr. Amara Diallo², Dr. Rekha Pillai Shankar³

¹School of Accounting and Finance, Hong Kong Polytechnic University, Hong Kong SAR

²Department of Corporate Governance, African School of Economics, Abidjan, Côte d'Ivoire

³Division of Business Ethics and Sustainability, S.P. Jain School of Global Management, Dubai, UAE

Corresponding Author: Prof. Wen-Hua Zhang | wenhua.zhang@polyu.edu.hk

Abstract

Corporate social responsibility (CSR) has become an integral dimension of corporate governance frameworks, yet the influence of CEO characteristics and board gender diversity on CSR performance remains an empirically contested domain. Anchored in Upper Echelons Theory and Agency Theory, this study examines the relationships between CEO tenure, CEO educational background, CEO narcissism, and board gender diversity on corporate CSR performance. Using an unbalanced panel dataset comprising 2,847 firm-year observations from 387 publicly listed companies across China, South Korea, Singapore, and Malaysia spanning 2015–2023, the study employs two-way fixed-effects panel regression with instrumental variable estimation to address endogeneity concerns. Findings reveal that board gender diversity ($\beta = 0.342$, $p < 0.001$) and CEO educational background in humanities/social sciences ($\beta = 0.187$, $p < 0.01$) positively predict CSR performance, while CEO narcissism exerts a significant negative

effect ($\beta = -0.264$, $p < 0.001$). CEO tenure exhibits an inverted U-shaped relationship with CSR performance, peaking at approximately 8.3 years. These relationships are moderated by institutional ownership concentration. The study contributes to Upper Echelons Theory by specifying the boundary conditions under which CEO characteristics shape CSR outcomes and provides governance implications for boards, institutional investors, and regulatory authorities.

Keywords: corporate social responsibility, CEO characteristics, board gender diversity, Upper Echelons Theory, panel data, corporate governance, Asian emerging markets

1. Introduction

Corporate social responsibility has evolved from a discretionary philanthropic activity to a strategically critical dimension of corporate governance, increasingly monitored by institutional investors, regulatory bodies, rating agencies, and civil

society organizations (Carroll & Shabana, 2010; Friede et al., 2015). The proliferation of mandatory CSR disclosure requirements—particularly in China (2018 CSRC guidelines), South Korea (KOSPI ESG disclosure mandates), Singapore (SGX sustainability reporting requirements), and Malaysia (Bursa Malaysia ESG framework)—has elevated CSR performance from a voluntary aspiration to a governance accountability mechanism. Nevertheless, significant inter-firm variation in CSR performance persists even within stringent regulatory environments, indicating that firm-level governance characteristics exert substantial explanatory power over and above regulatory compliance requirements.

Upper Echelons Theory, originally articulated by Hambrick and Mason (1984) and subsequently refined by Hambrick (2007), posits that senior executives' cognitive frames, values, and personalities shape strategic decisions and organizational outcomes, including CSR commitments. CEO characteristics—including tenure (functional experience accumulation and entrenchment dynamics), educational background (cognitive complexity and value systems), and personality traits (particularly narcissism as a dark-side characteristic)—are theorized to differentially influence CSR orientation and investment (Tang et al., 2018; Petrenko et al., 2016; Wowak et al., 2016). Yet, the empirical literature yields inconsistent findings, particularly regarding curvilinear CEO tenure effects and the contextual boundary conditions of personality-CSR relationships.

Simultaneously, board gender diversity has attracted substantial scholarly and regulatory attention as a governance mechanism with implications for CSR performance. Female

directors are theorized to bring distinctive value orientations, risk sensitivities, and stakeholder perspectives to board deliberations, generating stronger CSR commitments in diverse boards (Boulouta, 2013; Byron & Post, 2016). Meta-analytic evidence from Byron and Post (2016) across 140 studies and 78,000+ firms confirms a positive but heterogeneous relationship between female board representation and CSR, with effect sizes varying significantly across institutional and cultural contexts. The Asian corporate governance context, characterized by concentrated ownership, family business dominance, and evolving gender equity norms, provides a distinctive empirical testing ground for board diversity–CSR relationships.

The panel data approach adopted in this study offers significant advantages over cross-sectional designs prevalent in the CSR–governance literature. Panel data enables control for time-invariant firm heterogeneity through fixed effects, tracks longitudinal governance-CSR dynamics, and permits instrumental variable estimation to address the endogeneity concerns—particularly regarding board composition as a governance choice—that have been widely identified as methodological threats to causal inference in corporate governance research (Wintoki et al., 2012).

This study contributes to three streams of scholarship. First, it provides rare large-sample panel evidence on CEO characteristics–CSR relationships across four Asian emerging markets. Second, by incorporating CEO narcissism alongside structural CEO characteristics, it bridges the Upper Echelons and dark-side leadership literatures. Third, by testing institutional ownership as a governance moderator, it

identifies the boundary conditions under which CEO and board characteristics translate into CSR outcomes.

2. Literature Review

2.1 Upper Echelons Theory: Foundations and Extensions

Hambrick and Mason (1984) proposed that because organizational environments are too complex for completely rational strategic analysis, executives rely on cognitive schemas shaped by their observable characteristics—age, functional background, education, tenure, socioeconomic origins—to interpret strategic situations and formulate responses. Hambrick (2007) refined the theory by introducing managerial discretion as a moderating meta-variable, arguing that Upper Echelons effects are stronger in contexts where executives exercise greater strategic latitude. In CSR contexts, managerial discretion is particularly relevant because CSR investments often involve discretionary allocations beyond compliance requirements, making them particularly sensitive to executive values and cognitions (Petrenko et al., 2016).

CEO tenure has attracted considerable theoretical interest, with scholars proposing opposing effects. Learning and commitment perspectives suggest that longer-tenured CEOs develop deeper industry expertise, stakeholder relationship networks, and organizational commitment, enhancing their capacity and motivation to pursue long-horizon CSR investments (Yadav et al., 2018). Entrenchment perspectives, rooted in Agency Theory, propose that extended tenure generates complacency, hubris, and

declining responsiveness to stakeholder demands, potentially undermining CSR performance (Tang et al., 2018). Reconciling these perspectives, several scholars have proposed an inverted U-shaped tenure–performance relationship, with CSR performance peaking at moderate tenure levels (Yadav et al., 2018).

CEO educational background has been linked to value systems and cognitive complexity that shape CSR orientation. Executives educated in humanities, social sciences, and business ethics are theorized to exhibit stronger stakeholder orientation and sensitivity to social responsibility imperatives (Manner, 2010; Huang, 2013). In contrast, executives with exclusively technical or financial educational backgrounds may prioritize shareholder value metrics and exhibit narrower CSR orientations. Empirically, Manner (2010) found that humanities-educated CEOs in S&P 500 firms generated significantly higher CSR scores, though this finding requires replication in Asian corporate contexts.

2.2 CEO Narcissism and Corporate Social Responsibility

CEO narcissism—characterized by grandiosity, entitlement, exploitativeness, exhibitionism, and low empathy (Chatterjee & Hambrick, 2007)—represents a dark-side executive personality trait with significant strategic consequences. Petrenko et al. (2016) proposed and empirically confirmed that narcissistic CEOs engage in CSR as a self-promotion vehicle rather than genuine stakeholder responsiveness, generating a paradoxical positive narcissism–CSR relationship driven by reputational motives rather than ethical commitment. However,

Wowak et al. (2016) demonstrated that narcissistic CEOs' self-serving orientation ultimately undermines genuine CSR performance quality when assessed against substantive outcomes (e.g., environmental incidents, labor violations) rather than voluntary disclosure metrics. This study adopts a substantive CSR performance measure, predicting a negative narcissism–CSR relationship consistent with Wowak et al.'s (2016) analytical framework.

2.3 Board Gender Diversity and CSR Performance

Gender diversity on corporate boards has been extensively studied as a governance mechanism influencing CSR outcomes. Female directors are theorized to bring relational, communal value orientations that prioritize stakeholder welfare, long-term orientation, and ethical governance standards (Post & Byron, 2015). Boulouta (2013) demonstrated empirically that female board representation is negatively associated with CSR concerns—a proxy for CSR problems—in large US firms, confirming a positive governance effect. Byron and Post's (2016) meta-analysis found average corrected correlations of $\rho = 0.15$ between female board representation and CSR, with stronger effects in environments with stronger gender equity cultural norms.

In Asian corporate governance contexts, the relationship between board gender diversity and CSR may be attenuated by concentrated ownership structures, family board dominance, and institutional contexts that limit independent director influence (Liu et al., 2014). Conversely, the progressive gender equity regulatory reforms in Singapore (requiring board diversity reporting) and Malaysia (30% female

director targets) provide institutional pressure amplifying diversity–CSR relationships.

2.4 Institutional Ownership and Governance Moderation

Agency Theory (Jensen & Meckling, 1976) positions institutional investors as external governance monitors who reduce managerial agency costs by scrutinizing executive decisions. High institutional ownership concentration is associated with stronger monitoring, greater alignment of executive incentives with shareholder and stakeholder interests, and reduced managerial opportunism (Ferreira & Matos, 2008). In the CSR context, institutional investors—particularly ESG-oriented funds, sovereign wealth funds, and pension funds—increasingly use CSR performance as an investment screening criterion (Friede et al., 2015), strengthening the governance pressure on CEOs and boards to deliver CSR outcomes.

3. Research Gap

Despite extensive scholarship, three gaps persist. First, large-sample panel data evidence on CEO characteristics–CSR relationships from Asian emerging markets is limited, with most evidence from US and European contexts. Second, the moderating role of institutional ownership in the CEO characteristics–CSR and board diversity–CSR relationships has not been empirically integrated in a unified panel framework. Third, CEO narcissism's negative substantive CSR effect—distinguished from positive disclosure-based effects

documented by Petrenko et al. (2016)—has not been tested in Asian corporate contexts.

4. Research Objectives

RO1: To examine the effects of CEO tenure, educational background, and narcissism on CSR performance.

RO2: To assess the relationship between board gender diversity and CSR performance.

RO3: To investigate institutional ownership as a moderator of CEO characteristics–CSR and board diversity–CSR relationships.

RO4: To test the inverted U-shaped tenure–CSR relationship.

5. Hypotheses Development

H1: Board gender diversity is positively associated with CSR performance.

H2: CEO tenure exhibits an inverted U-shaped (curvilinear) relationship with CSR performance.

H3: CEO educational background in humanities/social sciences is positively associated with CSR performance.

H4: CEO narcissism is negatively associated with substantive CSR performance.

H5: Institutional ownership moderates the board diversity–CSR relationship,

amplifying positive effects under high institutional ownership.

6. Research Methodology

6.1 Sample and Data

The study utilizes secondary panel data from Bloomberg ESG database, Thomson Reuters Eikon, and BoardEx covering 387 publicly listed companies in China (n = 142 firms), South Korea (n = 89 firms), Singapore (n = 73 firms), and Malaysia (n = 83 firms) across 2015–2023, yielding 2,847 firm-year observations after excluding observations with missing CSR scores or governance data. Financial services firms are excluded due to distinct regulatory frameworks.

6.2 Variables

Dependent Variable: CSR performance measured using the Bloomberg ESG composite score (environmental + social + governance disclosure and performance, normalized 0–100).

Independent Variables: Board gender diversity (proportion of female board members); CEO tenure (years in position; quadratic term for curvilinearity testing); CEO educational background (dummy: 1 = humanities/social sciences/business ethics/law; 0 = STEM/economics/finance); CEO narcissism (composite score from Chatterjee and Hambrick's [2007] unobtrusive proxy measures: compensation relative to second-highest-paid executive, first-person singular pronoun use in letters to shareholders, bold leadership decisions index).

Moderator: Institutional ownership concentration (% shares held by institutional investors).

Control Variables: Firm size (log total assets), leverage (debt/equity), ROA, R&D intensity, firm age, country fixed effects, year fixed effects.

6.3 Analytical Method

Two-way fixed-effects panel regression (firm and year fixed effects) estimated in Stata 17 using Driscoll-Kraay standard errors robust to heteroskedasticity, autocorrelation, and cross-sectional dependence. The curvilinear tenure hypothesis tested by including CEO_tenure and CEO_tenure² simultaneously. Institutional ownership moderation tested through interaction terms. Endogeneity addressed using lagged independent variables (one-year lag) and GMM estimation as robustness checks.

7. Data Analysis and Findings

7.1 Descriptive Statistics

Table 1 Descriptive Statistics and Correlation Matrix (N = 2,847 firm-year observations)

Variable	M	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)
(1) CSR Score	54.32	.76	.4	.8	—					

Variable	M	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)
Board Gender	0.189	0.394	0.0	0.556	0.341***	—				
Director	7.84	5.23	0.50	28.0	0.089**	0.042	—			
CEO Tenure	0.312	0.464	0.0	1.0	0.198***	0.121***	-0.067*	—		
CEO Narcissism	0.487	0.31	0.0	1.0	-0.267**	-0.142**	0.089*	-0.189**	—	
Institutional Ownership	0.423	0.498	0.0	0.891	0.274***	0.183***	0.021	0.074*	-0.231**	—

Note. * p < 0.05; ** p < 0.01; *** p < 0.001.

7.2 Panel Regression Results

Table 2 Two-Way Fixed-Effects Panel Regression Results (DV = CSR Score)

Variable	Model 1 (Controls)	Model 2 (Main Effects)	Model 3 (Curvilinear)	Model 4 (Interactions)	Variable	Model 1 (Controls)	Model 2 (Main Effects)	Model 3 (Curvilinear)	Model 4 (Interactions)
Board Gender Diversity	0.342** * (0.067)	0.328*** (0.065)	0.287*** (0.071)			* (0.039)	(0.038)	(0.038)	(0.038)
CEO Tenure	0.089** (0.034)	0.214*** (0.058)	0.198*** (0.061)		ROA	0.187** * (0.043)	0.141** (0.041)	0.138** (0.041)	0.136** (0.041)
CEO Tenure ²		-0.013** (0.004)	-0.012** (0.004)		R&D Intensity	0.212** * (0.055)	0.176** (0.053)	0.172** (0.053)	0.169** (0.053)
CEO Education	0.187** (0.059)	0.183** (0.058)	0.176** (0.059)		Country FE	Yes	Yes	Yes	Yes
CEO Narcissism	-0.264** ** (0.061)	-0.258** * (0.060)	-0.241*** (0.063)		Year FE	Yes	Yes	Yes	Yes
Inst. Ownership	0.218** * (0.052)	0.211*** (0.051)	0.197*** (0.054)		R ² (within)	0.287	0.418	0.431	0.447
BGD × Inst. Ownership			0.189** (0.063)		F-stat	28.4***	38.7***	37.2***	34.9***
Narcissism × Inst. Ownership			-0.143* (0.059)		N	2,847	2,847	2,847	2,847
Firm Size	0.289** * (0.048)	0.241** * (0.046)	0.237*** (0.046)	0.234*** (0.047)	<i>Note.</i> Driscoll-Kraay standard errors in parentheses; * p < 0.05; ** p < 0.01; *** p < 0.001.				
Leverage	-0.124* (0.048)	-0.098* (0.046)	-0.094* (0.046)	-0.091* (0.047)	7.3 Hypothesis Evaluation				
					Table 3 Hypothesis Testing Summary				
					Hypothesis	Prediction	Key Result	Decision	
					H1: BGD → CSR	Positive	β = 0.342, p < 0.001	Supported	
					H2: Tenure	Inverted U	β_linear =	Supported	

Hypothesis	Prediction	Key Result	Decision
		0.214, $\beta_{quad} =$ -0.013; Turning point = 8.23 years	
H3: CEO Education → CSR	Positive	$\beta = 0.187, p < 0.01$	Supported
H4: CEO Narcissism → CSR	Negative	$\beta = -0.264, p < 0.001$	Supported
H5: BGD × Inst.Own → CSR	Amplifying	$\beta = 0.189, p < 0.01$	Supported

7.4 Turning Point Calculation for Curvilinear CEO Tenure

The inverted U-shaped relationship implies a turning point at: $Tenure^* = -\beta_{linear} / (2 \times \beta_{quad}) = -0.214 / (2 \times -0.013) = 8.23$ years.

CSR performance improves with CEO tenure up to approximately 8.2 years, after which entrenchment effects dominate and CSR performance declines. This finding reconciles the conflicting tenure–CSR predictions in the literature.

7.5 Robustness Checks

Two robustness strategies were employed. First, GMM estimation (Arellano-Bond dynamic panel estimator) yielded qualitatively consistent results across all

hypotheses. Second, alternative CSR measurement using the MSCI ESG rating confirmed the direction and significance of all main effects, with minor coefficient magnitude variations.

8. Discussion

The positive board gender diversity–CSR relationship (H1) is consistent with Byron and Post's (2016) meta-analytic findings and extends these to the Asian corporate governance context, which has been theorized as potentially attenuating diversity effects due to concentrated ownership and family board dominance. The finding that institutional ownership amplifies this relationship (H5) suggests that the governance monitoring function of institutional investors creates environmental conditions in which female directors' CSR-oriented values can be more effectively expressed in board deliberations. The inverted U-shaped tenure effect (H2) with a turning point at 8.23 years provides empirical resolution of the theoretical debate between learning and entrenchment perspectives, suggesting a life cycle model of CEO CSR engagement.

CEO narcissism's negative CSR relationship (H4) contradicts Petrenko et al.'s (2016) positive finding, which the present study attributes to the use of substantive rather than disclosure-based CSR measurement. Narcissistic CEOs may generate more sophisticated CSR communications while delivering inferior substantive environmental and social performance—a finding with significant implications for CSR greenwashing detection.

9. Theoretical Implications

This study advances Upper Echelons Theory by demonstrating that the CEO-CSR relationship is simultaneously shaped by structural characteristics (tenure, education), personality traits (narcissism), and governance moderators (institutional ownership, board composition), producing a more nuanced and contextually sensitive theoretical model. The tenure curvilinearity finding reconciles competing theoretical predictions by specifying a temporal life cycle within which different mechanisms dominate. The integration of Agency Theory through the institutional ownership moderation extends Upper Echelons beyond purely cognitive frameworks to incorporate external governance dynamics.

10. Practical Implications

For boards and nomination committees, these findings counsel deliberate management of CEO tenure through governance frameworks that maintain CEO engagement without enabling governance entrenchment—suggesting 7–9 year optimal tenure horizons for CSR performance maximization. Board gender diversity should be pursued not merely as a compliance response to regulatory quotas but as a substantive governance mechanism that, in combination with institutional investor engagement, generates measurable CSR performance improvements. Executive search processes should evaluate CEO educational backgrounds as a proxy for stakeholder orientation, and governance due diligence should include narcissism

screening through available unobtrusive measures, particularly in contexts where CEO authority concentrations amplify personality effects on organizational outcomes.

11. Conclusion

This panel study of 387 firms across China, South Korea, Singapore, and Malaysia across 2015–2023 provides robust evidence that board gender diversity, CEO educational background, and institutional ownership positively influence CSR performance, while CEO narcissism exerts a significant negative effect. CEO tenure exhibits an inverted U-shaped relationship with CSR performance peaking at approximately 8.2 years. These findings advance Upper Echelons and Agency Theory and provide actionable governance insights for Asian corporate boards and policymakers.

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**CEO Characteristics, Board Gender Diversity, and Corporate Social Responsibility Performance:
Evidence from Panel Data Across Asian Emerging Markets**
The Journal of Business, Management and Economics Engineering
Volume: 8 | Issue: 4 | DOI: 10226/jclp.433.839.672

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Volume: 8 | Issue: 4 | DOI: 10226/jclp.433.839.672

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