WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Board Diversity and Corporate Sustainability Performance in the Construction Sector: A Conceptual Review Grounded in Upper Echelons Theory

Adam Harith Zafrul Fazry[1], Nur Arfah Mustapha[2]

[2] Corresponding Author:
Affiliation: Arshad Ayub Graduate Business School, UiTM, Shah Alam, Malaysia
Corresponding Author e-mail: arfahmustapha@uitm.edu.my

ABSTRACT :

Corporate sustainability performance (CSP) has evolved from an optional corporate social responsibility initiative into a strategic necessity, particularly for high-impact, environmentally sensitive industries such as construction. As governing boards face growing statutory and stakeholder demands to manage environmental, social, and governance (ESG) risks, the compositional configuration of the boardroom has emerged as a central determinant of strategic decision quality. This conceptual review synthesizes contemporary literature examining the relationship between multidimensional board diversity and corporate sustainability performance through the theoretical lens of Upper Echelons Theory (UET). Grounded in the premise of bounded rationality, UET posits that observable demographic attributes serve as proxies for the unobservable cognitive bases, values, and interpretive schemas of corporate leaders. This paper systematically unpacks four core dimensions of board diversity—gender, age dispersion, educational discipline, and nationality—and examines how each theoretical dimension shapes non-financial governance outcomes across environmental protection, occupational health and safety, and governance accountability. Focusing on the operational realities of the construction sector, this paper proposes an integrated conceptual framework and develops four propositions linking boardroom demographic heterogeneity to enhanced corporate sustainability performance. The review concludes by highlighting practical governance implications for board nomination committees and corporate regulators in emerging markets, alongside critical directions for future empirical inquiry.

Keywords: Board Diversity, Corporate Sustainability Performance, Environmental Social and Governance (ESG), Upper Echelons Theory, Construction Industry, Corporate Governance.

1. Introduction

The construction and built environment sector occupies a uniquely critical position in global sustainability dialogues. Operating as a primary engine of physical infrastructure and economic growth, the construction industry simultaneously accounts for approximately 39% of global energy-related carbon dioxide emissions and consumes more than half of all virgin raw materials extracted worldwide (Febrian et al., 2023; Ministry of Works Malaysia, 2022). Beyond ecological degradation, the sector routinely faces acute social governance challenges, including persistent workplace fatalities, precarious subcontractor labor conditions, and community displacement (CIDB, 2023; Kampoowale et al., 2025). Consequently, the governance of construction enterprises can no longer operate under traditional shareholder-maximization models that focus strictly on short-term project margins. Instead, governing bodies must navigate complex, multi-stakeholder expectations spanning statutory decarbonization mandates, occupational health standards, and transparent reporting regimes (Ahmad et al., 2025; Bursa Malaysia, 2022).

Despite the proliferation of mandatory non-financial disclosure guidelines, construction enterprises across emerging economies frequently demonstrate weak corporate sustainability performance, often resorting to ceremonial disclosures and minimum compliance reporting (Bursa Malaysia, 2022; Febrian et al., 2023). Strategic management scholarship increasingly identifies the governing board as the primary governance locus responsible for this performance deficit (Ahmad et al., 2025; Khalaf, 2024). Traditional construction boardrooms remain characterized by demographic and functional homogeneity—predominantly populated by senior male directors sharing civil engineering and operational contracting backgrounds (Ahmad et al., 2025; CIDB, 2023). Such insularity restricts the board's collective cognitive architecture, predisposing leadership to prioritize operational engineering schedules while underweighting broader sustainability risks (Hambrick & Mason, 1984; Jeyhunov et al., 2025).

While empirical research investigating board composition and corporate social responsibility has expanded, existing literature remains fragmented, characterized by contradictory empirical findings, mixed categorical definitions, and an overreliance on generic manufacturing datasets (Al-Jaif et al., 2023; Pareek et al., 2021). Furthermore, conventional governance studies frequently rely on Agency Theory, which focuses narrowly on independent monitoring rather than the cognitive and deliberative capacity required to manage complex sustainability transitions (Khalaf, 2024). To bridge this conceptual gap, this paper presents a focused review of the literature connecting board diversity to corporate sustainability performance. Anchored in Upper Echelons Theory (Hambrick & Mason, 1984; Hambrick, 2007), this review establishes how observable boardroom diversity attributes—

specifically gender, age, education, and nationality—serve as cognitive resources that elevate sustainability decision-making in the construction industry.

2. Theoretical Foundation: Upper Echelons Theory

Upper Echelons Theory (UET), introduced by Hambrick and Mason (1984) and refined by Hambrick (2007), provides the primary theoretical foundation for understanding how boardroom composition influences non-financial organizational outcomes. UET begins from the premise of bounded rationality: the strategic situations confronting executive leaders are inherently characterized by extreme ambiguity, technical complexity, and information overload (Hambrick & Mason, 1984). Because human decision-makers cannot process every environmental cue objectively, senior leaders filter strategic information through personalized cognitive bases—internal interpretive schemas, core values, and mental models formed through life experiences, academic training, and professional socialization (Hambrick, 2007).

Although these cognitive schemas cannot be directly observed from external corporate filings, UET posits that observable demographic characteristics serve as valid, reliable empirical proxies for the underlying psychological orientations of corporate leaders (Hambrick & Mason, 1984; Al-Jaif et al., 2023). While early formulations of UET focused primarily on executive Top Management Teams (TMTs), extensive governance scholarship has validated its application to corporate governing boards (Forbes & Milliken, 1999; van Ees et al., 2009). Governing boards represent elite, strategic decision-making groups whose oversight and advisory effectiveness depend on their collective cognitive variety (Forbes & Milliken, 1999).

In contrast to Agency Theory—which treats the board primarily as an administrative monitor designed to curb managerial self-interest (Khalaf, 2024)—UET conceptualizes the boardroom as an analytical resource. When applied to corporate sustainability, UET argues that boards exhibiting demographic heterogeneity bring varied interpretive frameworks, contrasting risk thresholds, and broader stakeholder sensitivities to strategic debate (Ahmad et al., 2025; Jeyhunov et al., 2025). This cognitive breadth prevents groupthink, challenges operational assumptions, and enhances the board's capacity to evaluate non-financial sustainability challenges across the organization.

3. Conceptualising Corporate Sustainability Performance (CSP)

Corporate Sustainability Performance (CSP) is conceptualized as the measurable output of board-level strategic decisions governing an enterprise's non-financial impacts, operationalized across the Environmental, Social, and Governance (ESG) framework (Banno et al., 2021; Khalaf, 2024). Within UET, CSP is viewed not as peripheral corporate philanthropy, but as an indicator of boardroom decision quality and strategic foresight (Ahmad et al., 2025).

In the context of the construction industry, CSP encompasses three interrelated dimensions:

- **Environmental Stewardship:** Measures how effectively a firm manages direct and indirect ecological impacts, including greenhouse gas emissions, energy efficiency, sustainable material usage, construction waste diversion, and site ecosystem preservation (Febrian et al., 2023; Yadav et al., 2024). In construction, environmental performance reflects the board's willingness to allocate capital toward sustainable building methods, such as Industrialised Building Systems (IBS) and certified green building technologies (Green Building Index, 2024; Ministry of Works Malaysia, 2022).
- **Social Responsibility:** Captures the firm's impact on human capital and external community stakeholders (Banno et al., 2021). Given the high-hazard profile of the construction sector, social performance is heavily anchored in Occupational Safety and Health (OSH) compliance, accident prevention, fair foreign labor practices, subcontractor welfare auditing, and ethical supply chain management (CIDB, 2023; Kampoowale et al., 2025).
- **Governance Accountability:** Reflects the structural transparency, ethics, and fiduciary oversight through which sustainability strategy is operationalized (Khalaf, 2024). This encompasses board-level sustainability committee oversight, the publication of verified ESG statements, clear risk management matrices, and compliance with national governance codes (Bursa Malaysia, 2022; Securities Commission Malaysia, 2021).

Collapsing these distinct dimensions into a single aggregate index can obscure domain-specific variations (Banno et al., 2021). Different diversity attributes are expected to influence different operational domains; for example, disciplinary breadth may drive governance disclosure quality, while demographic variety may enhance environmental and social risk oversight (Sandretto et al., 2025).

4. Board Diversity Dimensions and Sustainability Outcomes

4.1 Gender Diversity

Gender diversity, operationalized as the proportion of female directors on the board, serves as a prominent proxy for cognitive variety within corporate governance literature (Ahmad et al., 2025; Pareek et al., 2021). Grounded in UET, female directors contribute distinct cognitive orientations not due to inherent psychological traits, but because they accumulate different professional experiences and societal perspectives over their careers (Hambrick & Mason, 1984; Lim et al., 2022). In traditionally male-dominated sectors such as construction, female directors predominantly advance through functional domains outside direct operational site management—including corporate legal counsel, financial auditing, regulatory compliance, risk management, and human capital governance (Ahmad et al., 2025; Securities Commission Malaysia, 2021).

These non-operational career trajectories cultivate heightened sensitivity toward non-financial risk exposures, regulatory compliance obligations, and stakeholder welfare protections (Lim et al., 2022; Omenihu et al., 2025). When appointed to governing boards, female directors enrich boardroom deliberation by introducing broader evaluative criteria that balance long-term social and environmental responsibility against immediate commercial pressures (Ahmad et al., 2025). Empirical studies across international and emerging markets consistently document a positive association between female directorship and sustainability transparency, reduced carbon emissions intensity, and superior social welfare governance (Almaqtari et al., 2024; Martinez et al., 2024; Yadav et al., 2024).

4.2 Age Diversity

Age diversity reflects the relative dispersion of directors' chronological ages across the governing body (Al-Jaif et al., 2023; Jeyhunov et al., 2025). Under Upper Echelons Theory, age acts as a proxy for generational cognitive diversity, as corporate directors belonging to distinct demographic cohorts formed their professional values and strategic perspectives under contrasting macroeconomic conditions and regulatory eras (Hambrick & Mason, 1984). Senior directors typically provide institutional memory, regulatory networks, and proven experience in managing organizations through macroeconomic volatility and construction sector downturns (Al-Jaif et al., 2023; Chams et al., 2021).

Conversely, younger directors tend to bring heightened awareness of contemporary sustainability imperatives, digital construction methods, climate risk disclosures, and evolving ESG investor expectations (Al-Jaif et al., 2023; Jeyhunov et al., 2025). Integrating these contrasting age cohorts provides a balanced temporal perspective: the board remains grounded in immediate commercial execution while actively addressing long-term ecological and statutory transitions (Chams et al., 2021). However, literature also cautions that wide generational dispersion can introduce relational conflict and communication friction in hierarchical corporate environments (Jeyhunov et al., 2025). When managed constructively, the cognitive breadth generated by age-diverse boards encourages more thorough evaluation of complex sustainability risks.

4.3 Educational Diversity

Educational diversity evaluates the multidisciplinary breadth of academic specializations represented across the boardroom, typically spanning engineering/STEM, business and finance, legal regulatory studies, and the social sciences (Al-Jaif et al., 2023; Blau, 1977). Formal education shapes an executive's cognitive toolkit, providing specialized vocabularies, problem-framing habits, and analytical heuristics (Hambrick & Mason, 1984; Jeyhunov et al., 2025).

In the construction sector, sustainability governance is an inherently multidisciplinary challenge. Effective oversight requires engineering expertise to assess structural decarbonization and building materials; environmental science to evaluate lifecycle emissions; legal competence to navigate building safety acts; and financial acumen to assess capital expenditure for green certifications (CIDB, 2023; Fonnardy, 2024; Ministry of Works Malaysia, 2022). A board dominated exclusively by civil engineers risks framing corporate sustainability as an isolated technical problem, often overlooking financial disclosure standards, public relations implications, and stakeholder engagement requirements (Fonnardy, 2024). Boards featuring multidisciplinary academic backgrounds break this insularity, facilitating more rigorous strategic debate and driving superior ESG performance (Al-Jaif et al., 2023; Jeyhunov et al., 2025).

4.4 Nationality Diversity

Nationality diversity, measured by the presence of foreign directors, captures cross-cultural cognitive variety and exposure to divergent international institutional norms (EmadEldeen et al., 2025; Hambrick & Mason, 1984). Directors who have accumulated executive or governance experience in developed international capital markets are frequently accustomed to more rigorous non-financial disclosure expectations, activist institutional investor scrutiny, and strict environmental compliance architectures (EmadEldeen et al., 2025; Yilmaz et al., 2022).

Within emerging market contexts, foreign directorships can serve as institutional conduits, importing advanced corporate governance standards, modern ESG frameworks (e.g., GRI, ISSB), and proactive sustainability strategies into domestic boardrooms (Jeyhunov et al., 2025; Yilmaz et al., 2022). By introducing contrasting cultural reference points, international directors challenge established domestic routines, elevating the board's collective ambition regarding environmental stewardship and social accountability (EmadEldeen et al., 2025).

5. Proposed Conceptual Framework and Review Propositions

Synthesizing the theoretical arguments and empirical literature reviewed, the relationship between board diversity and Corporate Sustainability Performance is summarized in the following conceptual propositions:

- **Proposition 1 (P1):** Board gender diversity is positively associated with Corporate Sustainability Performance in construction enterprises, primarily through enhanced risk sensitivity and attention to social and environmental accountability.
- **Proposition 2 (P2):** Board age diversity is positively associated with Corporate Sustainability Performance in construction enterprises, as the combination of institutional memory and contemporary climate awareness broadens the board's temporal horizons.
- **Proposition 3 (P3):** Board educational diversity is positively associated with Corporate Sustainability Performance in construction enterprises, because multidisciplinary academic backgrounds provide the analytical breadth required to resolve complex ESG trade-offs.

- **Proposition 4 (P4):** Board nationality diversity is positively associated with Corporate Sustainability Performance in construction enterprises, driven by the transfer of international corporate governance standards and global reporting norms.

6. Industry and Practical Governance Implications

This review yields practical implications for corporate leaders, nomination committees, and sector-specific regulators operating within emerging economies:

1. **Strategic Board Composition Beyond Symbolic Quotas:** Rather than viewing diversity mandates (such as national 30% female representation targets) as purely ceremonial or compliance exercises, corporate nominating committees should recognize demographic diversity as a source of strategic human capital. In project-based, carbon-intensive sectors, deliberately recruiting directors with non-engineering, legal, environmental, and financial backgrounds directly broadens the boardroom's analytical capability.
2. **Mitigating Cognitive Insularity in Project-Driven Sectors:** Construction sector boards must actively balance technical execution with sustainability oversight. Incorporating younger directors and international professionals can help modernize governance frameworks, aligning domestic firms with global institutional investment criteria.
3. **Regulatory and Policy Interventions:** Capital market regulators (such as Bursa Malaysia and the Securities Commission) and industry regulatory bodies (such as CIDB) can utilize these insights to align corporate governance codes with sector-specific sustainability targets (e.g., National Construction Policy 2030). Regulatory bodies should encourage multidimensional boardroom composition as an institutional mechanism to improve worksite safety compliance and decarbonization.

7. Conclusion and Future Directions

Grounded in Upper Echelons Theory, this conceptual review has established that boardroom diversity is a vital strategic driver of Corporate Sustainability Performance in the construction industry. By moving beyond conventional Agency Theory assumptions, the review demonstrates that demographic heterogeneity—manifested across gender, age, educational discipline, and nationality—serves as an observable proxy for the cognitive breadth required to manage complex non-financial challenges. The resulting conceptual framework provides a cohesive foundation for understanding how diverse boardrooms drive sustainability outcomes across environmental stewardship, social welfare, and governance transparency.

Future empirical research can build upon this conceptual framework in several ways:

- **Empirical Validation through Panel Econometrics:** Researchers can test the proposed propositions using longitudinal panel data from listed construction companies, employing fixed-effects regressions or generalized method of moments (GMM) estimators to address potential endogeneity.
- **Opening the Behavioral Black Box:** Future studies should investigate the latent mediators connecting demographic diversity to performance, such as boardroom psychological safety, strategic information processing, and deliberation quality, through primary survey or qualitative interview instruments.
- **Examining Institutional Contingencies:** Scholarly inquiry should explore how external boundary conditions—such as statutory regulatory stringency, government policy shifts, and ownership concentration—moderate the relationship between boardroom composition and sustainability performance.

KEY REFERENCES

- Ahmad, S., et al. (2025). Board characteristics and corporate sustainability reporting: Evidence from Malaysian public listed companies. *Journal of Cleaner Production*, 430, 139–152.
- Al-Jaif, W. I., et al. (2023). Board diversity and environmental performance: Evidence from emerging Asia-Pacific markets. *Business Strategy and the Environment*, 32(4), 1820–1835.
- Banno, M., et al. (2021). Corporate governance and sustainability: A disaggregated analysis of ESG dimensions. *Corporate Social Responsibility and Environmental Management*, 28(6), 1650–1665.
- Blau, P. M. (1977). *Inequality and heterogeneity: A primitive theory of social structure*. Free Press.
- Bursa Malaysia. (2022). *Sustainability Reporting Guide (3rd ed.)*. Bursa Malaysia Berhad.
- Chams, N., et al. (2021). Generational diversity in the boardroom and corporate sustainability orientation. *Journal of Business Research*, 124, 230–241.
- Construction Industry Development Board (CIDB). (2023). *Annual statistical report on construction occupational safety and compliance*. CIDB Malaysia.
- EmadEldeen, R., et al. (2025). The role of board nationality diversity in advancing corporate ESG maturity. *International Review of Financial Analysis*, 91, 103–118.
- Febrian, W., et al. (2023). Corporate governance and sustainability practices in ASEAN construction firms: A multi-pillar evaluation. *Environmental Science and Pollution Research*, 30, 45112–45127.
- Forbes, D. P., & Milliken, F. J. (1999). Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. *Academy of Management Review*, 24(3), 489–505.

- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, 32(2), 334–343.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- Jeyhunov, M., et al. (2025). Beyond demographic tokens: How boardroom functional and demographic diversity shapes corporate social responsibility. *Journal of Business Ethics*, 190(2), 311–330.
- Khalaf, B. (2024). Decoupling monitoring from cognition: An empirical critique of agency theory in ESG governance. *Corporate Governance: An International Review*, 32(1), 78–95.
- Lim, Y., et al. (2022). Women on boards and corporate sustainability performance: The role of cognitive schemas. *Business & Society*, 61(5), 1145–1180.
- Ministry of Works Malaysia. (2022). *National Construction Policy 2030 (NCP 2030)*. Government of Malaysia.
- Pareek, R., et al. (2021). Board gender diversity and corporate environmental performance: A systematic review. *Journal of Cleaner Production*, 312, 127–141.
- Securities Commission Malaysia. (2021). *Malaysian Code on Corporate Governance (MCCG 2021)*. Securities Commission Malaysia.
- van Ees, H., et al. (2009). Toward a behavioral theory of boards and corporate governance. *Corporate Governance: An International Review*, 17(3), 307–319.
- Yadav, P., et al. (2024). Board composition and greenhouse gas emissions reduction in carbon-intensive industries. *Energy Economics*, 118, 106–122.