

# Determinants of Gender Diversity on Corporate Boards in Ghana: The Role of Firm Characteristics, Ownership Structure, and Corporate Governance

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## Abstract

*This study investigates the determinants of board gender diversity among listed firms in Ghana, focusing on firm-specific characteristics, ownership structures, and corporate governance variables. Drawing on agency, stakeholder, legitimacy, and resource dependence theories, the study analyses panel data from 25 firms spanning 2014 to 2023. Using the Panel-Corrected Standard Errors (PCSE) model alongside robustness checks with FE, RE, and GMM estimators, the findings reveal that board size, industry type, and the presence of a female board chair positively influence women's representation. Conversely, firm size, government and foreign ownership, and board independence are negatively associated with gender diversity. Notably, substantial shareholding shows a positive effect, diverging from earlier studies. These results highlight the contextual complexity of gender diversity in developing economies and underscore the strategic importance of inclusive governance. The study contributes to theory and practice by emphasizing how institutional dynamics shape board composition in emerging markets.*

## 1. Introduction

Despite substantial progress in educational attainment and workforce participation of women, a persistent global disparity remains in the representation of women at the upper echelons of corporate leadership. While women comprise nearly half of the global university and labour force population, their presence in boardrooms and senior executive roles continues to lag significantly behind that of their male counterparts (Halliday et al., 2020; Musah et al., 2019). This underrepresentation has sparked growing calls for equitable inclusion in corporate decision-making and leadership, yet the pace of progress has been slow and uneven across regions (Ararat et al., 2021).

Numerous international efforts, ranging from voluntary targets to mandatory quotas, have aimed to promote board gender diversity, but their effectiveness has varied widely. Despite the potential benefits of gender-diverse boards, such as enhanced ethical governance, strategic diversity, and improved financial performance (Post and Byron, 2015; Terjesen et al., 2015), male dominance persists across global corporate boards. This raises important questions about the structural and contextual factors that influence women's inclusion in corporate leadership.

Empirical evidence increasingly points to the positive impact of women's board representation on firm outcomes, particularly in terms of monitoring quality, risk reduction, and ethical oversight, aligning with agency theory's emphasis on board independence and accountability (Adenutsi, 2024; Adenutsi et al., 2024; Velte, 2017; Julizaerma and Sori, 2012). However, the literature remains inconclusive, with mixed findings about the firm performance effects of board gender diversity (De Masi et al., 2022). These inconsistencies suggest the need to move beyond firm performance to examine the determinants of gender inclusion in corporate governance.

To date, most empirical research has concentrated on either cross-country comparison of macro-level drivers (e.g., legal systems, cultural norms, institutional reforms) or firm-level characteristics in developed and emerging economies (Chizema et al., 2015; Saeed et al., 2016; Ngo and Melguizo, 2021). Specifically, variables such as firm size, profitability, industry type, and board structure have received substantial attention. Yet, there is limited empirical exploration in the context of sub-Saharan Africa, particularly Ghana, where corporate governance systems operate within distinct social, institutional, and economic dynamics. Even fewer studies have examined how ownership structures, such as state or foreign ownership, interact with corporate governance variables to influence women's board inclusion (Martin-Ugedo and Minguéz-Vera, 2014).

In Ghana, the representation of women on corporate boards remains low (Yeboah et al., 2014; Musah et al., 2019), despite an increasing number of qualified female professionals. This gender gap not only reflects issues of equity but also poses significant governance challenges. The lack of gender diversity reduces cognitive variety in strategic decision-making, limits innovation, and potentially damages corporate reputation and stakeholder confidence (Ali et al., 2021; Gurol and Lagasio, 2022). Moreover, recent corporate governance failures in Ghana's financial sector underscore the urgent need for stronger and more diverse board oversight.

Notably, the few existing Ghanaian studies on gender diversity have focused primarily on its consequences, such as its effect on firm performance (Adenutsi, 2024; Adenutsi et al., 2024; Musah et al., 2022; Adusei et al., 2017), rather than the factors that drive women's inclusion on boards. The influence of sociocultural norms, informal networks, and institutional inefficiencies in shaping these dynamics remains underexplored. Thus, a comprehensive investigation of the determinants of women's board representation, particularly incorporating firm-level factors, ownership structures, and corporate governance variables, is both timely and necessary.

This study addresses this gap by empirically examining the determinants of board gender diversity among listed firms in Ghana from 2014 to 2023. Specifically, it investigates how firm characteristics (e.g., size, profitability, market performance), ownership structures (e.g., state and foreign ownership), and governance attributes (e.g., board size, independence, CEO duality, and presence of female board chairpersons) influence women's representation on corporate boards.

The Ghanaian context provides a compelling setting for this analysis. First, promoting gender diversity in leadership is essential to transforming societal perceptions of women's roles and capabilities, advancing national gender equality goals. Second, in the aftermath of corporate failures, there is a heightened need for strong and diverse governance structures. Third, Ghana's growing engagement with ESG standards, driven by investor expectations and global development partners, demands a deeper understanding of the enablers and barriers to gender-inclusive governance.

### **Research Problem and Gap**

Despite rising awareness of gender inequality in corporate governance, limited attention has been paid to the determinants of women's inclusion on corporate boards in developing economies such as Ghana. Existing studies have largely cantered on the effects of gender diversity on firm outcomes or explored determinants within high-income or emerging markets. There is a clear gap in empirical knowledge regarding how firm-level characteristics, ownership structures, and governance mechanisms interact to shape women's representation in corporate boardrooms in contexts with informal institutions, patriarchal norms, and underdeveloped governance frameworks. This study seeks to fill this void.

### **Contribution and Significance**

This study makes three key contributions: It expands the gender diversity literature by providing firm-level, longitudinal evidence from a neglected African context. It integrates ownership structure and corporate governance dimensions, variables often overlooked in gender diversity studies. It informs policy and institutional reforms aimed at enhancing gender inclusion, corporate governance quality, and ESG compliance in Ghana and other developing countries.

The rest of the paper proceeds sequentially with literature review and hypothesis development, the methodology and data issues, analysis and discussion of the results, conclusions, recommendations, and limitations.

## **2. Literature and Hypotheses**

## **Firm Size and Women Representation on Boards**

Firms often adopt practices that reflect prevailing societal expectations to secure legitimacy and align with institutional norms (Coffie et al., 2018; Saeed et al., 2016). Legitimacy theory suggests that larger firms, due to their public visibility and stakeholder scrutiny, experience heightened pressure to conform to social demands, including board gender diversity (De Masi et al., 2022; Black et al., 2023). This pressure intensifies in contexts where institutional frameworks, such as corporate governance codes, national gender policies, or media oversight, explicitly prioritize diversity (Adams and Funk, 2012; Terjesen et al., 2015). In developed countries, firm size is positively linked to female board representation, as large firms face greater accountability to regulators, investors, and civil society (Adenutsi, 2024; Agrawal and Knoeber, 2001). Emerging economies, including BRICS nations, reveal similar dynamics, where institutional pressures from global investors and transnational governance frameworks (e.g., SDGs) prompt firms to diversify boards (Saeed et al., 2016; Kılıç and Kuzey, 2018). In Sub-Saharan Africa, however, institutional influences intersect with distinct cultural, legal, and economic realities. In Ghana, while progressive initiatives like the National Gender Policy (2015) and the draft Affirmative Action Bill (2016) exist, patriarchal norms and weak enforcement limit their effectiveness (Amponsah-Tawiah and Dartey-Baah, 2020). Recent studies in Kenya and South Africa reveal that large firms are more responsive to global ESG standards, while smaller firms trail due to limited resources and weaker external oversight (Ntim et al., 2022; Mwaura and Carter, 2021). These findings highlight the need to explore how firm size, institutional pressures, and cultural factors influence gender diversity in Ghana. Building on legitimacy and institutional theories, this study hypothesizes that larger Ghanaian firms, particularly those listed on the GSE or exposed to international markets, are more likely to appoint women to their boards (Agyemang-Mintah and Schadewitz, 2019; Okafor et al., 2021).

**H1:** There is a positive relationship between firm size and board gender diversity.

## **Firm Performance and Women Representation on Boards**

The relationship between firm performance and board gender diversity is theorized through complementary lenses of Signalling Theory, Resource-Based View (RBV), and Legitimacy Theory, yet empirical outcomes remain contested. Signalling Theory posits that high-performing firms (e.g., those with elevated Tobin's Q) appoint women to boards to signal progressive governance and attract socially conscious investors (Carter et al., 2003; Adams & Ferreira, 2009). RBV extends this logic, framing gender diversity as a strategic resource that high-performing firms leverage to sustain competitive advantage through diverse perspectives and stakeholder trust (Hillman et al., 2007; Liu et al., 2013). However, Legitimacy Theory introduces nuance: firms with strong market performance face heightened societal scrutiny, compelling them to adopt gender-diverse boards to align with normative expectations (Coffie et al., 2018; Terjesen and Singh, 2008). Conversely, substitutive legitimacy arguments suggest that firms with dominant market positions or exceptional profitability may deprioritize diversity, relying instead on economic success to secure legitimacy (Askarzadeh et al., 2024).

Empirical evidence reflects this tension. Studies in Spain (Martín-Ugedo and Mínguez-Vera, 2014) and Egypt (Attia et al., 2024) report positive associations between profitability and female board representation, aligning with RBV and legitimacy-driven narratives. Conversely, research in Malaysia (Abdullah, 2014) and South Africa (Mvita and Toit, 2024) reveals negative correlations, underscoring the role of institutional contexts, such as weak enforcement of diversity policies or patriarchal norms, in moderating these relationships. In Sub-Saharan Africa, Mensah and Onuamah (2023) found that gender-diverse boards reduce earnings management, validating resource-dependence arguments, while contradictory findings in Egypt (Saleh et al., 2023) highlight regional heterogeneity. This divergence underscores the need to contextualize performance-diversity linkages within institutional frameworks. For instance, in regions with robust gender equity regulations (e.g., EU quota laws), profitability may correlate positively with diversity due to compliance incentives. In contrast, in weakly regulated environments (e.g., Ghana, Malaysia), cultural or resource barriers may decouple performance from diversity outcomes (Adams and Funk, 2012; Amponsah-Tawiah and Dartey-Baah, 2020). Furthermore, substitutive legitimacy mechanisms may dominate in industries where innovation or market dominance overshadows governance expectations (Askarzadeh et al., 2024). In line with the legitimacy theory, therefore, the study posits the hypothesis that:

**H2:** There is a positive relationship between market performance or firm profit and board gender diversity.

## **Industry type and women representation on the board**

The impact of industry type on women's representation on corporate boards is increasingly recognized as significant. Adenutsi (2024) and Ahmed et al. (2018) argue that industry characteristics shape societal expectations and

external pressures, prompting firms to adopt gender diversity practices. This aligns with legitimacy theory, which suggests that firms in high-visibility industries, such as finance, are more likely to diversify their boards to meet stakeholder expectations (Coffie et al., 2018; Musah et al., 2022). Empirical evidence supports this view: Ngo & Melguizo (2021) found that public-facing industries like technology and finance in Vietnam show higher female board participation. Similarly, Ahmed et al. (2018) observed that firms in finance and IT are significantly more likely to have gender-diverse boards due to intense regulatory and societal scrutiny.

In Ghana, where the financial sector contributes over 20% to GDP and is globally integrated, these legitimacy pressures are amplified. Financial institutions face increased demands from regulators, investors, and civil society to demonstrate progressive governance (Musah et al., 2022). According to stakeholder theory, firms accountable to a broad stakeholder base are more likely to pursue gender inclusion. The Bank of Ghana's emphasis on corporate governance reforms further reinforces this trend (Bank of Ghana, 2021). In contrast, industries with lower public visibility, like agriculture or manufacturing, tend to lag, constrained by weaker oversight and cultural resistance. Nonetheless, this relationship is context-dependent. While financial firms in Ghana and Egypt exhibit inclusive trends (Attia et al., 2024), South African studies reveal minimal industry effect (Mvita and Toit, 2024), suggesting that institutional frameworks moderate outcomes. The Resource-Based View (RBV) adds that high-performing financial firms may view gender diversity as a strategic resource (Hillman et al., 2007). However, in less regulated sectors, strong profitability may substitute for legitimacy, weakening diversity incentives (Askarzadeh et al., 2024). Thus, industry visibility and stakeholder pressure are key predictors of board gender diversity in Ghana.

**H<sub>3</sub>:** Financial institutions have higher female representation on their board than non-financial institutions.

### **Government Ownership and Women Representation on Boards**

The imperative for accountability and alignment with stakeholder expectations has elevated gender diversity as a key pillar of corporate governance, particularly within state-owned enterprises (SOEs) (Saeed et al., 2016; Musah et al., 2022). In Ghana, this discourse is reinforced by proactive gender mainstreaming policies, including the Affirmative Action Bill (2016) and the National Gender Policy (2015), which advocate for equitable representation in public appointments (Amponsah-Tawiah and Dartey-Baah, 2020). These initiatives signal a strategic commitment to dismantling systemic gender barriers and aligning with global ESG benchmarks, positioning SOEs as agents of governance reform. Legitimacy theory explains this trend: SOEs, as publicly visible entities, adopt gender-diverse boards to meet societal expectations and enhance legitimacy (Grosvold, 2011; Coffie et al., 2018). Simultaneously, stakeholder theory highlights the government's dual role as regulator and dominant stakeholder, compelling SOEs to institutionalize gender equity (Reddy and Jadhav, 2019; Attia et al., 2024).

However, global evidence is mixed. Studies in China and Norway report a positive relationship between state ownership and female board presence due to top-down mandates (Liu et al., 2013; Teigen, 2020). In contrast, Saeed et al. (2016) show negative effects in contexts marred by patronage and weak implementation. In Sub-Saharan Africa, enforcement gaps persist: South African SOEs show progress, while Nigerian counterparts lag (Ntim et al., 2022; Mwaura and Carter, 2021). Ghana offers a critical case. Despite progressive policies, patriarchal norms and weak enforcement mechanisms hinder gender equity. This study posits that Ghanaian SOEs will have higher female board representation than private firms, though this relationship is shaped by sectoral visibility and policy enforcement strength. Building on these theoretical perspectives, the study formulates the hypothesis that:

**H<sub>4</sub>:** There is a positive relationship between government ownership and board gender diversity.

### **Foreign Ownership and Women Representation**

Foreign ownership introduces a vital dimension of transnational governance, compelling firms in developing economies like Ghana to align their board composition, particularly in gender diversity, with global standards. According to legitimacy theory, foreign-controlled subsidiaries often adopt their parent companies' governance norms to secure legitimacy across both home and host countries (Musah et al., 2021; Askarzadeh et al., 2023). This alignment is reinforced by increasing global ESG (Environmental, Social, and Governance) expectations, where gender-diverse boards signal inclusive leadership and attract socially conscious investors (Terjesen et al., 2021; Attia et al., 2024). MNCs from regions with strict gender quotas, such as the EU, often replicate such diversity standards across their subsidiaries (Reddy and Jadhav, 2019; Grosvold and Brammer, 2023).

Stakeholder theory highlights the influence of foreign parent companies as dominant stakeholders who institutionalize gender diversity to manage reputational risk (Hillman et al., 2021). Agency theory complements this by asserting that diverse boards enhance oversight, mitigating agency conflicts, a key concern for foreign investors (Adams and Ferreira, 2009; Musah et al., 2022). Empirical studies from Southeast Asia and Latin America confirm that foreign-

owned firms show 15–25% higher female board representation (Nguyen and Van Dijk, 2023; García-Sánchez et al., 2024). However, Ghana presents contextual challenges. Despite strong governance norms in foreign firms, patriarchal culture and weak enforcement dilute transnational mandates (Adenutsi, 2024; Amponsah-Tawiah and Dartey-Baah, 2023). For instance, sectors like mining show slow progress, revealing tension between global standards and local resistance (Okafor et al., 2023). Thus, this study hypothesizes that foreign-owned firms will have higher female board representation than domestic firms, though this effect varies by sector and institutional environment. Building on these theoretical frameworks, the study formulates the hypothesis that:

**H<sub>5</sub>:** There is a positive relationship between foreign ownership and board gender diversity.

### **Ownership Concentration and Female Representation on Corporate Boards**

Extensive research in corporate governance highlights the influence of ownership concentration on board composition, yet its specific effect on gender diversity remains underexplored (Adenutsi, 2024; Adenutsi et al. (2024) Reddy and Jadhav, 2019). Concentrated ownership, where dominant shareholders exercise significant control, often fosters homogeneity in governance structures, sidelining minority interests, including women's representation (Coffie et al., 2018). Ahmed et al. (2018), using OLS analysis, found a significant negative association between substantial shareholding and female board participation. This aligns with legitimacy theory, which posits that concentrated firms experience reduced external pressure to meet societal expectations, weakening incentives for gender diversity (Musah et al., 2021). Cross-country evidence supports this. In blockholder-dominated contexts like Germany and Japan, female board representation is lower compared to Scandinavia, where dispersed ownership and strong stakeholder engagement prevail (Grosvold and Brammer, 2021; Terjesen et al., 2023). Stakeholder theory suggests majority owners often prioritize control and profit over inclusion (Hillman et al., 2021). In Ghana, family-owned firms dominate, where patriarchal norms and concentrated ownership intersect to stifle diversity (Adusei et al., 2023). Agency theory offers nuance: while concentrated ownership reduces agency costs, it may suppress diversity to maintain board cohesion, as seen in South African mining firms (Mvita and Toit, 2024). However, institutional context matters. In EU-listed firms, gender quota laws mitigate ownership's negative impact (Adams and Funk, 2022). Similarly, foreign institutional investors in India and Brazil promote ESG compliance in concentrated firms (Kumar and Singh, 2023; Silva et al., 2024). In light of these theoretical considerations, the study posits the hypothesis that:

**H<sub>6</sub>:** There is a negative relationship between substantial shareholding and board gender diversity.

### **Board Size and Female Representation on Corporate Boards**

The relationship between board size and gender diversity is a critical yet contested dimension of corporate governance scholarship. Abdullah (2014) posits that larger boards inherently accommodate diverse constituents, including women, by expanding the pool of directorial appointments, a dynamic empirically validated across jurisdictions. For instance, Luckerath-Rovers (2011) demonstrated that Dutch firms with gender-diverse boards had board sizes 48% larger than those with homogenous compositions, while Griffin (2019) observed that women are frequently added as supplementary directors rather than replacements, reflecting a "diversity-as-expansion" approach. This trend is particularly pronounced in voluntary governance regimes (e.g., the US, UK), where gender diversity is often a goodwill gesture contingent on firms' capacity to absorb the costs of larger boards (Saeed et al., 2016). However, this relationship is nuanced by institutional and cultural contexts. In Malaysia, Abdullah (2014) identified a positive correlation between board size and female representation, contrasting with findings in Japan, where larger boards in traditional industries (e.g., manufacturing) remain male-dominated due to cultural conservatism (Yamaguchi and Sudo, 2023). Similarly, Saeed et al. (2016) reported divergent outcomes within their BRICS sample: while Brazilian and Chinese firms mirrored the positive trend, Russian firms exhibited no significant relationship, underscoring the moderating role of regulatory environments and gender norms. In light of these theoretical considerations, this study posits the hypothesis that:

**H<sub>7</sub>:** There is a positive relationship between board size and board gender diversity.

### **Board Independence and Female Representation on Corporate Board**

Within the area of corporate governance, agency theory elucidates the necessity for companies to incorporate independent board members to enhance the board's monitoring capabilities (Reddy and Jadhav, 2019). The rationale extends to the assertion that independent board members wield influence, fostering greater gender diversity on the board as a facet of proper diversity management (Adenutsi, 2024). The significance of women presence on the board is underscored by its critical role in facilitating the effective functioning of independent directors (Griffin, 2019).

Numerous empirical studies have embraced independent directors as potential determinants of women representation on corporate boards (Reddy and Jadhav, 2019). For example, Abdullah (2014), in a study on Malaysian firms, discovered a positive relationship between independent directors and women representation on the board. Saeed et al. (2016) similarly reported a positive association between board independence and female representation across companies in the BRIC countries. Framed within the context of legitimacy theory, this integration of independent directors and women on boards can be viewed as an organisational response to societal expectations, enhancing legitimacy (Coffie et al., 2018). Additionally, from the stakeholder theory perspective, the inclusion of independent directors and women on boards signifies responsiveness to the interests and expectations of diverse stakeholders. Moreover, from an agency theory standpoint, the collaboration of independent directors and women on boards is strategic, mitigating potential agency conflicts and enhancing overall corporate governance effectiveness. Building on these theoretical considerations, the study formulates the hypothesis that:

**H<sub>8</sub>:** There is a positive relationship between board independence and board gender diversity.

### **Female Board Chairperson and Women Representation on the Board**

The research landscape on gender diversity emphasizes the pivotal role of women in top-level positions, particularly as board chairpersons, in driving the appointment of female members to corporate boards (Reddy and Jadhav, 2019). These studies posit that the presence of women in the role of board chairperson serves as a clear manifestation of a company's commitment to diversity, signifying equal opportunities for women to ascend to leadership positions within their respective organisations (Musah and Adutwumwaa, 2021). Additionally, the female chairperson enhances the organisation's capacity to respond to environmental pressures, aligning with the tenets of legitimization theory, by appointing more women to the board. Despite the significance of this aspect, empirical studies on gender diversity in corporate boards have rarely explored the influence of female board chairpersons on the appointment of women to the board, with only a few studies addressing this gap. For instance, Ahmed et al. (2018) incorporated female board chairpersons as a potential determinant of female representation on the board, revealing a positive association between women representation on the board and the presence of female board chairpersons. These findings underscore the notion that women occupying the role of board chairpersons are likely to exert influence on the appointment of female board members. Framed within the context of agency theory, the appointment of female board chairpersons may be strategic in mitigating agency conflicts and improving overall corporate governance. From a legitimacy theory perspective, the presence of female board chairpersons reflects a commitment to societal expectations, enhancing the organisation's legitimacy. Adopting a stakeholder theory viewpoint, the inclusion of female board chairpersons aligns with meeting the expectations and interests of various stakeholders. Building on these theoretical considerations, the study formulates the hypothesis that:

**H<sub>9</sub>:** There is a relationship between female board chairpersons and board gender diversity.

## **3. Methods**

The research adopts a quantitative research design, using secondary data extracted from the annual reports of listed companies on the Ghana Stock Exchange (GSE). The study spans the past ten years, encompassing the period from 2014 to 2023, ensuring a comprehensive examination of trends over this timeframe. The sample includes both financial and non-financial listed firms to allow for industry analysis in line with previous studies such as Adenutsi (2024). To maintain data balance, the study employs a sample selection criterion focusing on firms listed on the GSE throughout the specified decade. A total of 25 firms were sampled based on the availability of consistent data over the past 10 years of being listed. This sample size allows for a robust analysis while ensuring representation across diverse sectors of the Ghanaian economy. The analysis employs a combination of descriptive statistics, correlation analysis, and panel-corrected standard error modelling. This methodological approach addresses inherent limitations in panel data analysis, enhancing the study's rigour and reliability. The selected sample and analytical methods aim to provide a thorough and nuanced understanding of the factors influencing women representation on corporate boards in the Ghanaian context over the specified timeframe.

### **Empirical Model**

The dependent variable for the study is board gender diversity proxied by women representation on a corporate board (BGD). The independent variables are in three categories: firm characteristics, ownership structures and corporate governance variables. First, the firm characteristics include firm size (FSize), firm profit (FProfit) or market performance

(MktP), and industry classification (industry). Second, the ownership structure variables are government ownership (Govown), foreign ownership (Forown), and substantial shareholding (Subshares). Finally, the corporate governance variables are board size (BDsize), board independence (BDind) and woman board chairperson (WBChair). The baseline empirical panel regression model estimated to determine the factors that affect board gender diversity is specified in Equation 1.

$$BGD_{it} = \alpha_i + \beta_1 FSize_{it} + \beta_2 MktP_{it} + \beta_3 Industry_{it} + \beta_4 Govown_{it} + \beta_5 Forown_{it} + \beta_6 Subshares_{it} + \beta_7 BDsize_{it} + \beta_8 BDind_{it} + \beta_9 WBChair_{it} + \varepsilon_{it} \quad (1)$$

Here,  $\alpha_i$  is the constant term specific to each firm  $i$ ,  $\beta_1, \beta_2, \dots, \beta_9$  are the unknown parameters estimated to establish the relationship between each independent variable and board gender diversity (the dependent variable),  $\varepsilon$  is the error term while  $_{it}$  denotes a sampled listed firm  $i$  at year  $t$ . The definition and measurement of each of the variables in Equation 1 are presented in Table 1.

### Data Issues

This study relied on secondary data from the published annual reports and audited financial statements of companies listed on the Ghana Stock Exchange (GSE). The data was obtained from the website of the GSE ([www.gse.com.gh/listed-companies](http://www.gse.com.gh/listed-companies)). The panel data size is 25 listed firms covering the period, 2014-2023. The selection of the firms was purposive based on the availability of consistent data for the study period. The data obtained from GSE for research purposes is available online with no specific rights or permissions required to access them. The authors computed the final data in line with the definition and measurement of each variable presented in Table 1.

**Table 1**

Variable Definition and Measurement

Variable	Measurement
BGD	Percentage of women on a corporate board
FSize	Natural logarithm of total assets
FProfit	Return on assets (profit before interest and tax divided by total assets)
MktP	Tobin's Q ratio computed as the total market value of a firm divided by the total asset value of the firm
Industry	Dummy, 1 if a firm is a financial institution, 0 otherwise
Govown	Dummy, 1 if the firm is controlled by the government, 0 otherwise
Forown	Dummy, 1 if the firm is controlled by foreigners, 0 otherwise
Subshares	Percentage of shares held by substantial shareholders (5% and above)
BDsize	Number of directors on the board
BDind	Proportion of non-executive directors on the board
WBChair	Dummy, 1 if the board chairperson is female, 0 otherwise

The descriptive statistics of each of these variables are presented in Appendix A.

### Estimation Procedure of the Empirical Model

To estimate the baseline model, this study employs the Panel-Corrected Standard Errors (PCSE) estimator, which is well-suited for panel data characterised by heteroskedasticity and contemporaneous correlation across panels. PCSE offers robust standard error adjustments, enhancing the reliability of hypothesis testing and confidence intervals when standard OLS assumptions are violated (Baltagi, 2021). Given the moderate size of the panel and potential cross-sectional dependence among Ghanaian firms, PCSE provides more accurate statistical inference. However, a limitation of PCSE is that it does not account for unobserved heterogeneity that may be correlated with the regressors, potentially biasing coefficient estimates.

To address this limitation, robustness checks were conducted using alternative estimators: Pooled OLS, Fixed Effects (FE), Random Effects (RE), and Arellano-Bond Generalised Method of Moments (GMM). Pooled OLS assumes homoskedastic and uncorrelated errors and ignores firm-level heterogeneity, making it less suitable for panel data

(Wooldridge, 2002). FE models control for time-invariant firm-specific effects but cannot estimate coefficients on time-invariant variables. RE models allow such estimation but require the assumption that unobserved effects are uncorrelated with regressors (Greene, 2003). Lastly, GMM was used to address potential endogeneity and dynamic effects; however, its reliability is limited by the short time dimension and risk of weak instruments (Arellano, 2003; Adenutsi, 2014). Overall, PCSE is preferred for the main analysis due to its strength in addressing error structure issues, while alternative estimators serve as robustness checks to confirm the consistency of results.

#### 4. Results

##### Descriptive Statistics

The first variable is the dependent variable, which measures women representation on corporate boards of listed entities in Ghana. The study measured board gender diversity in line with previous literature such as Saeed et al. (2016), and Halliday et al. (2020) where they used the proportion of women on the board of corporations to represent board gender diversity.

**Table 2**  
Descriptive Statistics of Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Board Gender Diversity	0.2132	0.1364	0	0.6667
Firm Size	8.4282	1.3719	5.1844	11.545
Firm Profit	-4.776036	0.7920	-0.13e+08	0.3774
Industry Classification	0.40	0.4908	0	1
Government Ownership	0.28	0.4498	0	1
Foreign Ownership	0.48	0.5005	0	1
Substantial Shareholding	0.7008	0.1805	0.1498	0.9549
Board Size	8.3127	2.1059	5	15
Board Independence	0.6645	0.1715	0.1111	1
Market Performance	4	1.6245	0.01072	8.4214
Woman Board Chairperson	0.1018	0.3030	0	1

Descriptive statistics indicate that women hold, on average, 21% of board seats among listed firms in Ghana. While some firms have no female board members, the highest female representation reaches 67%, reflecting wide heterogeneity in gender diversity practices. This average exceeds reported figures for several emerging and developed economies, including Brazil (5%), India (6%), Russia (6%), China (9%), the United States (13%), and the United Kingdom (11.1%) (Saeed et al., 2016). Although still below gender parity, this comparatively higher representation suggests a modest but noteworthy advancement in Ghana's corporate gender inclusion landscape.

The average firm size (measured as the natural log of total assets) ranges from 5.18 to 11.55, with 40% of firms in the financial sector. Ownership characteristics show that 28% of firms are government-owned, a proportion higher than in Brazil, India, the U.S., and the U.K., but lower than in Russia and China (Saeed et al., 2016). Additionally, 48% of the firms are foreign-owned, and 70% exhibit concentrated ownership, defined as having shareholders with  $\geq 5\%$  equity holdings, higher than reported in Australia (Ahmed et al., 2018).

Average board size stands at 8.3 members, broadly consistent with global benchmarks (Saeed et al., 2016), while 66% of board members are non-executive directors, a figure surpassing levels in the U.K., India, Brazil, and Russia. Notably, only 10% of firms had a female board chairperson during the study period.

The correlation matrix (Table 3) shows relatively weak associations between the explanatory variables and board gender diversity. Notably, firm size, state ownership, board size, and board independence are negatively correlated with female representation, whereas firm profitability, foreign ownership, substantial shareholding, industry type, and female board chair presence exhibit positive associations. These preliminary insights justify the multivariate analysis that follows.

**Table 3**  
Bivariate Correlation Analysis

	BGD	FSize	FProfit	Industry	Govown	Forown	Subshares	BDsize	BDind	WBchair	MktP
<b>BGD</b>	1.0000										
<b>FSize</b>	-0.0920	1.0000									
<b>FProfit</b>	0.0264	-0.084	1.0000								
<b>Industry</b>	0.0744	0.4726	-0.0745	1.0000							
<b>Govown</b>	-0.2335	0.2500	0.0378	0.0393	1.0000						
<b>Forown</b>	0.0306	0.2201	-0.0632	0.1924	-0.5984	1.0000					
<b>Subshares</b>	0.0404	0.1334	0.0054	0.0855	0.1701	-0.0657	1.0000				
<b>BDsize</b>	-0.1160	0.5496	-0.1070	0.3432	0.2170	0.2331	-0.1184	1.0000			
<b>BDind</b>	-0.2158	0.0718	-0.0914	0.1998	0.2604	-0.0211	0.0015	0.3488	1.0000		
<b>WBchair</b>	0.3950	-0.064	0.0204	-0.1019	0.0303	-0.1299	-0.0533	-0.2496	-0.1896	1.0000	
<b>MktP</b>	-0.0088	0.5109	-0.1523	0.3308	0.0758	0.0855	-0.1355	0.3935	0.0531	-0.0994	1.0000

The correlation analysis was also used to determine the perceived presence of multicollinearity among the independent variables. The correlation coefficient between the independent variables is below the rule of thumb of 0.8 which suggests that there is no problem with multicollinearity. The results from Table 3 suggest that none of the correlation coefficients among the dependent variables was even up to 0.55 which confirms the assertion that there are no serious problems with multicollinearity.

**Table 4**  
Test for Multicollinearity (Variance Inflation Factor)

Variable	VIF	VIF <sup>-1</sup>
Government ownership	2.48	0.403138
Firm size	2.42	0.413920
Foreign ownership	2.29	0.436277
Board size	2.04	0.490537
Market performance	1.53	0.653573
Industry	1.40	0.715063
Board independence	1.32	0.758141
Substantial shareholding	1.19	0.841235
Women board chair	1.12	0.891403
Firm profit	1.04	0.961568
<b>Mean VIF</b>	<b>1.68</b>	<b>0.6564855</b>

The study further conducted the variance inflation factor analysis of the variables to establish whether indeed there is no problem with multicollinearity. Determining the presence of multicollinearity and correcting it is important because it reduces the statistical significance of the independent variables. The result of the analysis is shown in Table 4. The results of the VIF in Table 4 show that none of the independent variables has an issue with multicollinearity since none of the variables has a VIF close to five as often applicable to cross-sectional and panel data. Government ownership records the highest VIF which is 2.48.

To empirically determine the firm characteristic factors that influence board gender diversity of listed companies in Ghana, the results of the estimated linear panel-corrected standard errors model represented in Table 5 were relied upon.

The estimated results from the Linear Panel-Corrected Standard Error Regression Model (Table 5 column 1) show various impacts of the explanatory variables on board gender diversity of listed companies in Ghana. From the complete model including firm profit, the highlights of key findings are:

- **Firm Size:** A negative coefficient (0.0166) with a standard error of 0.0080, is statistically significant at 5% levels ( $p=0.037$ ), suggesting a tentative negative impact of firm size on women representation on boards of listed companies.

- **Firm Profit:** Shows no effect (coefficient of 0.0000) with low z-statistic of 0.95, and a high uncertainty (p=0.3430), indicating firm profit does not significantly influence the representation of women on boards (see Table 5, column 2).

- **Market Performance:** Reveals a positive coefficient (0.0077) with a corresponding standard error of 0.0006 and z-score of 12.83, implying that market performance is a statistically significant positive determinant of board gender diversity in Ghana.

- **Industry:** A significant positive impact (coefficient of 0.0483) with high statistical significance (p<0.001) indicates that board gender diversity of directors is dependent on the type of industry being a financial institution.

- **Government Ownership:** A significant negative effect (coefficient of -0.0991), indicating that increased government ownership adversely affects board gender diversity (p<0.001). In other words, board gender diversity is negatively affected by the firm being under state ownership and control.

- **Foreign Ownership:** Shows a negative coefficient (-0.0396), suggesting foreign ownership negatively influences board gender diversity, with strong statistical significance (p<0.001).

- **Substantial Shares:** A significant positive coefficient (0.1113) indicates a beneficial effect of substantial shares on board gender diversity (p=0.001).

- **Board Size:** Positively affects the outcome (coefficient of 0.0108) with statistical significance (p<0.001), suggesting larger board sizes are favourable to board gender diversity.

- **Board Independence:** A negative coefficient (-0.1096) with a significance level of 5% (p=0.015), indicating that higher board independence negatively impacts board gender diversity.

- **Women as Board Chair:** A highly significant positive coefficient (0.1900) suggests a strong positive impact of having women as board chairs on board gender diversity (p<0.001).

- **Constant:** The model includes a significant constant term (0.2525), indicating the base level of the outcome variable when all predictors are zero.

The model exhibits an R-squared of 0.2830, suggesting that approximately 28% of the variability in the dependent variable is explained by the model. By implication, other non-firm-specific factors such as culture, values, politics, and attitudes might be crucial to the determination of board gender diversity. The Wald  $\chi^2$  statistic (290.70) with a p-value below 0.001 indicates that overall, the estimated model is statistically significant and relevant. These results are technically the same even when firm profit was omitted and the model was re-estimated (Table 5, column 2).

**Table 5**

Estimated Results of Linear Panel-Corrected Standard Error Regression Model

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	Panel-Corrected Standard Error <sup>TM</sup>	Panel-Corrected Standard Error <sup>SM</sup>	Panel Generalised Least Squares
<b>Market Performance</b>	0.0077 (0.0006) [12.83]***	0.0000 (0.0000) [0.95]	0.0077 (0.0008) [9.63]***
<b>Firm Size</b>	-0.0166 (0.0080) [-2.08]**	-0.0134 (0.0074) [-1.82]*	-0.0166 (0.0080) [-2.11]**
<b>Industry</b>	0.0483 (0.0129) [3.76]***	0.0505 (0.0137) [3.68]***	0.0483 (0.0167) [2.88]***
<b>Government Ownership</b>	-0.0991 (0.0222) [-4.46]***	-0.1033 (0.0184) [-5.61]***	-0.0991 (0.0243) [-4.08]***
<b>Foreign Ownership</b>	-0.0396 (0.0120) [-3.29]***	-0.0431 (0.0112) [-3.85]***	-0.0396 (0.0210) [-1.88]*
<b>Substantial Shares</b>	0.1113 (0.0318) [3.50]***	0.1016 (0.0340) [3.28]***	0.1113 (0.0420) [2.65]***
<b>Board Size</b>	0.0108 (0.0029) [3.76]***	0.0116 (0.0031) [3.77]***	0.0108 (0.0047) [2.29]**
<b>Board Independence</b>	-0.1096 (0.0449) [-2.44]**	-0.1088 (0.0451) [-2.41]**	-0.1096 (0.0464) [-2.36]**
<b>Woman Board Chair</b>	0.1900 (0.0236) [8.05]***	0.1887 (0.0221) [8.52]***	0.1900 (0.0243) [7.82]***
<b>Constant</b>	0.2525 (0.0694) [3.64]***	0.2299 (0.0676) [3.40]***	0.2525 (0.0689) [3.67]***
<i>R-squared</i>	0.2830	0.2816	not applicable
<i>Wald <math>\chi^2</math></i>	388.42***	334.67***	108.56***
<i>Estimated Covariances</i>	325	325	1
<i>Estimated Autocorrelations</i>	0	0	0
<i>Estimated Coefficients</i>	10	10	10
<i>Serial Correlation DW Statistic</i>	1.76805	1.78754	1.72469
<i>Panel Cross-Section</i>	LR 10.20556{0.9961}	10.16066{0.9962}	not applicable
<i>Heteroskedasticity LR Test</i>	df 25	25	not applicable
<i>Residual Cross-Section</i>	B-P LM 1.408{0.999}	1.403{1.000}	not applicable
<i>Dependence Tests</i>	P-LM 0.295{0.774}	0.295{0.769}	not applicable
	P-CD 2.872{0.004}***	2.872{0.004}***	

\*/\*\*/\*\*\*/\*\*\* represents 10%, 5% and 1% level of statistical significance respectively. { } reports probabilities.  
B-P LM, P-LM and P-CD are Breusch-Pagan LM, Pesaran scaled LM, and Pesaran CD tests respectively.  
Column 1 estimation involves the Tobin Q's ratio while column 2 represents firm profitability

To ensure the reliability of the PCSE results, robustness checks were conducted using Pooled OLS, Fixed Effects (FE), Random Effects (RE), and Arellano-Bond one-step GMM estimators (Appendix B). Three dummy variables (industry type, government ownership, and foreign ownership), were omitted in the FE and GMM models, likely due to limited within-entity variation rather than multicollinearity, as confirmed by both the correlation matrix (Table 3) and VIF analysis (Table 4).

Pooled OLS results closely aligned with the PCSE estimates in sign and direction, reinforcing the model's robustness. Given the moderate time dimension, pooled OLS is appropriate when individual effects are minimal, and when the focus is on the average effect across firms. This model performs adequately in panels with more cross-sectional than time observations, and where heterogeneity is less of a concern.

Across models, firm size consistently emerged as a significant determinant, showing a positive effect in the FE, RE, and GMM models, but with mixed significance in pooled OLS. Firm profit remained insignificant across all specifications. The FE model identified only firm size and female board chair as positive influences. The RE model confirmed these while also showing negative effects of government ownership, foreign ownership, and substantial shareholding. GMM results further highlighted the dynamic nature of female board representation and reaffirmed firm size as a key determinant.

Panel diagnostics support the PCSE model's validity. While Breusch-Pagan LM and Pesaran LM tests reject cross-sectional dependence, the Pesaran CD test suggests some residual dependence. Nonetheless, applying a majority rule across diagnostics, we conclude that cross-sectional dependence is not a major concern, affirming the reliability of the PCSE-based inferences.

## **Discussion**

### **Firm Characteristics and Board Gender Diversity**

The regression results (Table 5) reveal a significant negative relationship between firm size and female board representation, contrary to Hypothesis 1 and much of the extant literature (Agrawal and Knoeber, 2011; Saeed et al., 2016). This finding diverges from resource dependence and legitimacy theories, which posit that larger firms, due to heightened public scrutiny, are more likely to adopt gender-inclusive governance practices. In the Ghanaian context, however, it appears that large firms do not face sufficient external or institutional pressure to enhance gender diversity, potentially reflecting weak enforcement of regulatory standards and enduring patriarchal norms. This also challenges stakeholder theory, suggesting that influential stakeholders in Ghana may not prioritize gender parity in larger firms.

Conversely, market performance shows a significant positive association with women representation, supporting signalling theory and the resource-based view (Carter et al., 2003; Hillman et al., 2007). This finding aligns with Adams and Ferreira (2009) and Terjesen and Singh (2008), implying that high-performing firms may use gender-diverse boards to signal commitment to governance quality. Interestingly, firm profit was statistically insignificant across models, contradicting agency theory, which anticipates governance adjustments (like diverse boards) in pursuit of profit maximization. These findings underscore the importance of distinguishing between market-based performance and accounting profitability in governance research.

The positive and significant coefficient for industry classification confirms that financial firms are more likely to appoint women to boards, aligning with Hypothesis 3 and previous studies (Ngo and Melguizo, 2021; Ahmed et al., 2018). Financial institutions, due to regulatory oversight and high public visibility, are more susceptible to legitimacy pressures and stakeholder expectations, making them more responsive to diversity norms. This finding reinforces resource dependence and stakeholder theories, suggesting that institutional environments can shape board composition even in emerging markets.

### **Ownership Structures and Gender Diversity**

The results show a negative and significant relationship between government ownership and women representation, contradicting Hypothesis 4 and prior evidence from China and Norway (Liu et al., 2013; Reddy and Jadhav, 2019). This result is unexpected, as state-owned firms are often perceived as instruments for promoting public policy, including gender equity. It challenges assumptions under agency theory that governments use board appointments to enhance oversight, and it suggests that in Ghana, political patronage and entrenched gender norms may undermine formal inclusion efforts.

Similarly, foreign ownership was found to have a significant negative association with gender diversity, contrary to Hypothesis 5 and the propositions of legitimacy theory. Prior research argues that multinational firms transplant home-country diversity norms to host-country subsidiaries (Terjesen et al., 2021; Askarzadeh et al., 2023), but in Ghana, foreign firms may deprioritize gender inclusion due to weaker institutional enforcement or local cultural resistance. This finding points to the contextual limits of transnational governance diffusion and highlights the need to critically assess assumptions about global norm transfer in developing countries.

Interestingly, substantial shareholding ( $\geq 5\%$ ) is positively associated with board gender diversity, opposing Hypothesis 6 and Adenutsi et al. (2024), who reported negative effects of concentrated ownership. This result suggests that in Ghana, large shareholders may be more reform-oriented, possibly responding to ESG pressures or seeking reputational benefits. While agency theory often views concentrated ownership as a threat to diversity, these findings propose a more nuanced relationship, where ownership concentration does not necessarily conflict with gender inclusion in certain institutional contexts.

### **Corporate Governance Factors**

The findings show a positive and significant effect of board size on female representation, in line with Hypothesis 7 and prior studies (Saeed et al., 2016). This supports the notion that larger boards offer more opportunities for diversity and may reflect efforts to balance multiple stakeholder interests. The result is consistent with resource dependence theory, which suggests that larger boards seek diverse expertise, including gender diversity, to enhance board functionality.

Conversely, board independence shows a negative and significant relationship with female board representation, rejecting Hypothesis 8 and contrasting with previous studies (Saeed et al., 2016). While agency theory assumes independent directors promote governance best practices, including diversity, the Ghanaian evidence suggests that independence, as operationalized, may not align with inclusion goals. It may also reflect the symbolic appointment of male-dominated independent boards to satisfy formal governance codes, without substantive commitment to diversity.

Finally, the presence of a female board chair is positively and significantly associated with women representation, validating Hypothesis 9 and reinforcing prior evidence (Ahmed et al., 2018). This result strongly aligns with agency, stakeholder, and legitimacy theories, all of which predict that gender-inclusive leadership facilitates further diversity. A female board chair likely reduces structural and cultural barriers, creating pathways for other women to ascend to leadership roles.

Overall, these findings provide mixed support for prevailing corporate governance theories, emphasizing the importance of institutional and cultural context in shaping board gender diversity. While some results confirm expectations from agency, legitimacy, stakeholder, and resource dependence theories, others diverge significantly, particularly with respect to firm size, state ownership, and foreign ownership. These deviations challenge the universal applicability of theoretical frameworks developed in Western or more institutionalized economies, underscoring the need for context-sensitive governance models in African settings like Ghana. The nuanced patterns observed call for tailored policy interventions, enhanced enforcement of diversity policies, and a reconsideration of how ownership and governance structures interact with social norms in shaping corporate leadership outcomes.

### **Conclusion**

This study provides robust evidence that firm-specific characteristics, ownership structures, and corporate governance variables significantly influence gender diversity on the boards of listed firms in Ghana. Key determinants include firm size, industry classification, board size, board independence, and notably, the presence of a female board chairperson. These findings reveal a complex interplay between organisational structures and gender inclusion, shaped by both institutional dynamics and cultural context. The results offer critical theoretical contributions to agency, stakeholder, legitimacy, and resource dependence theories. The unexpected negative relationship between firm size and gender diversity challenges agency and legitimacy theories, which typically predict that larger, more visible firms are more responsive to societal pressures for inclusive governance. Similarly, the negative associations with government and foreign ownership suggest that formal ownership ties do not automatically translate into diversity gains, particularly in institutional environments where policy enforcement is weak. In contrast, the positive influence of board size and female leadership supports stakeholder and resource-dependence perspectives. Larger boards may have greater flexibility to accommodate diverse voices, while female chairs appear to serve as powerful catalysts for broader female inclusion. These findings suggest that gender-diverse boards are not only a reflection of social progress but a strategic

asset that can enhance board functionality, stakeholder trust, and reputational capital. In sum, this research underscores the need to recontextualize corporate governance theories within developing economies and highlights the importance of embedding gender diversity into corporate governance as both a strategic and normative imperative. Future efforts should prioritize context-sensitive reforms that align diversity goals with institutional realities to promote more inclusive, effective governance frameworks.

## Recommendations

Recommendations stemming from the findings of this study underscore the imperative for Ghana to take decisive measures to enhance board gender diversity. First, regulatory bodies overseeing corporate compliance in both public and private sectors in Ghana should actively promote ownership diffusion. The study underscores that substantial shareholding diminishes board gender diversity; therefore, encouraging a broader distribution of ownership enhances the likelihood of appointing more women to corporate boards. Second, introducing new corporate governance regulations that advocate for larger board sizes and greater independence is essential. The study reveals that fostering large board sizes and incorporating independent board members positively influences board gender diversity. Therefore, the formulation of regulations promoting these characteristics is crucial for fostering gender diversity. Third, acknowledging the influential role of female board chairpersons in increasing female representation, there should be a concerted effort to appoint more women to chair boards. This strategic move will subsequently contribute to the broader appointment of female directors on corporate boards, aligning with the study's findings. Finally, recognising the global trend and legislative interventions in some developed countries, Ghana should consider the introduction of gender quotas. Legislation compelling corporations to reserve a specific percentage of board appointments for women, as witnessed in countries like France, has proven effective in bolstering gender diversity. Implementing gender quotas can be a proactive step toward achieving greater gender diversity on corporate boards in Ghana. The leading targeted stakeholder-specific action-oriented recommendations are:

- ✓ Regulatory bodies and policymakers should consider mandates or incentives for larger firms and industries with traditionally lower female representation to adopt more gender-inclusive board recruitment policies and provide conducive environments for female participation.
- ✓ Listed firms should be encouraged to review and possibly revamp their governance structures to promote gender diversity, including appointing qualified and capable women to significant leadership positions and ensuring board independence.
- ✓ Investors and shareholders could play a pivotal role by advocating for gender diversity as a criterion in their investment decisions, influencing corporate practices indirectly.
- ✓ Industry associations should develop sector-specific initiatives and benchmarks for gender diversity, recognising the unique challenges and opportunities within each industry.

## Limitations and Future Related Research

While this study makes important contributions to the discourse on gender diversity and corporate governance in developing economies, several limitations must be acknowledged. First, the analysis is confined to listed firms on the Ghana Stock Exchange, which may not fully capture the governance dynamics of private firms, state-owned enterprises outside the listing framework, or SMEs. The institutional pressures and governance structures in these firms likely differ, limiting the generalizability of findings beyond the formal sector. Second, although the study incorporates firm-level control variables such as firm size, profitability, and ownership structure, it does not fully account for external macro-level factors such as political influence, regulatory enforcement gaps, or cultural attitudes toward gender roles. These contextual variables, while conceptually discussed, could not be empirically tested due to data limitations. Incorporating such factors in future mixed-method or cross-country studies would strengthen the understanding of how institutional environments condition board diversity outcomes. Third, the study relies on secondary, archival data, which, while robust, does not capture qualitative nuances, such as board culture, appointment processes, or informal barriers to inclusion, that might shape gender representation. Future studies may benefit from interview-based or ethnographic approaches to enrich the explanatory depth. Fourth, the cross-sectional panel design restricts causal interpretation. Although techniques like PCSE and GMM were employed to strengthen inference, only longitudinal or experimental designs can definitively establish causality between governance mechanisms and board diversity. Finally, while gender representation was operationalized through numerical inclusion, the study does not assess the quality of participation or

influence of women on boards. Future research should explore not only how many women are appointed but also their roles, leadership impact, and decision-making power within the boardroom. These limitations notwithstanding, the study offers a solid foundation for rethinking gender and governance dynamics in emerging markets like Ghana.

### **Contribution of Authors**

Deodat Emilson Adenutsi was responsible for writing the methodology, specification of the empirical model, estimations, and analysing the estimated results. He was also responsible for the final proofreading prior to the submission of the manuscript. Abigail Padi was responsible for reviewing the theoretical literature and construction of the theoretical framework. Alhassan Musah was responsible for reviewing the empirical literature, writing out the implications of the results, and drafting the manuscript. Bismark Okyere was responsible for data collection and preliminary proofreading of the manuscript. Marshall Wellington Blay was responsible for data editing, verification, and compilation of the references.

### **Disclosure statement**

The authors have no relevant financial or non-financial interests to disclose.

### **Declaration of data availability**

The data that support the findings of this study are available from the corresponding author, Dr. Deodat Emilson Adenutsi (dadenutsi@htu.edu.gh), upon request.

### **Declaration of competing interest**

The author declares that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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**Appendix A: Statistical Summary of Data**

<b>VARIABLE</b>	<b>Observations</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Board Gender Diversity	275	0.23131709	0.1364117	0	0.666667
Firm Size	275	8.428268	1.37191	5.184379	11.75392
Firm Profit	275	-477603.6	7920160	-1.31E+08	0.37743
Industry	275	0.4	0.4907911	0	1
Government Owned	275	0.28	0.4498175	0	1
Foreign Owned	275	0.48	0.5005107	0	1
Substantial Shares	275	0.7008031	0.1804954	0.1498	0.9549
Board Size	275	9.312727	2.105871	5	15
Board Independent	275	0.66444586	0.171457	0.111111	1
Market Performance	275	4	1.62447	0.01072	8.4214
Woman as Board Chair	275	0.1018182	0.3029604	0	1

**Appendix B: Robustness Estimations**

	<b>Pooled Regression</b>	<b>Fixed Effect</b>	<b>Random Effect</b>	<b>Arellano-Bond GMM</b>
<b>Board Gender Diversity (Lag_1)</b>	<i>not applicable</i> <i>not applicable</i> <i>not applicable</i>	<i>not applicable</i> <i>not applicable</i> <i>not applicable</i>	<i>not applicable</i> <i>not applicable</i> <i>not applicable</i>	0.2544 (0.1166) [2.18]**
<b>Firm Size</b>	-0.0166 (0.0080) [-2.07]**	0.1429 (0.0234) [6.11]***	0.0315 (0.0142) [2.22]**	0.1041 (0.0242) [4.31]***
<b>Market Performance</b>	0.0077 (0.0019) [4.05]***	-0.0022 (0.0009) [-2.49]**	-0.0005 (0.0009) [-0.55]	0.0032 (0.0010) [3.11]***
<b>Industry</b>	0.0483 (0.0171) [2.83]***	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )	0.0023 (0.0360) [0.06]	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )
<b>Government Ownership</b>	-0.0991 (0.0248) [-4.00]***	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )	-0.1766 (0.0499) [-3.54]***	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )
<b>Foreign Ownership</b>	-0.0396 (0.0214) [-1.85]*	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )	-0.0998 (0.0447) [-2.23]**	0.00000 ( <i>omitted</i> ) ( <i>omitted</i> )
<b>Substantial Shares</b>	0.1113 (0.0428) [2.60]**	0.1471 (0.1278) [1.15]	0.1166 (0.0778) [1.50]	0.1725 (0.0411) [4.20]***
<b>Board Size</b>	0.0108 (0.0048) [2.25]**	-0.0018 (0.0060) [-0.29]	0.0061 (0.0057) [1.07]	0.0242 (0.0066) [3.67]***
<b>Board Independence</b>	-0.1096 (0.0473) [-2.32]**	-0.0301 (0.0275) [-0.54]	0.0029 (0.0529) [0.05]	-0.0006 (0.0633) [-0.01]
<b>Woman Board Chair</b>	0.1900 (0.0248) [7.67]***	0.0754 (0.0275) [2.74]***	0.1203 (0.0272) [4.42]***	0.0314 (0.0132) [2.37]**
<b>Constant</b>	0.2525 (0.0702) [3.60]***	-1.0569 (0.1873) [-5.64]***	-0.1072 (0.1100) [-0.97]	-0.6075 (0.1968) [-3.09]***
<b>R2 (within)</b>	<i>not applicable</i>	0.1974	0.2104	<i>not applicable</i>
<b>Corr (u<sub>i</sub>, X<sub>b</sub>)</b>	<i>not applicable</i>	0.8774***	0.0000 (assumed)	<i>not applicable</i>
<b>F-statistic</b>	<i>not applicable</i>	10.00***	<i>not applicable</i>	<i>not applicable</i>
<b>Wald (χ<sup>2</sup>)</b>	<i>not applicable</i>	<i>not applicable</i>	37.81***	37.39***
<b>Hausman (χ<sup>2</sup>)</b>	<i>not applicable</i>	<b>117.51</b> {0.0000}***		<i>not applicable</i>

\*/\*\*/\*\* denotes statistical significance at 10%, 5% and 1% respectively