EFFECT OF GENDER DIVERSITY ON CORPORATE BOARDS ON THE FINANCIAL PERFORMANCE OF SAUDI COMPANIES: A SURVEY STUDY

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Abstract: This study investigates the associations between gender diversity (GD) within the board of directors (BD) and financial performance (FP) in Saudi Arabia. It aims to provide empirical evidence on how the inclusion of women in top corporate governance structures impacts firms' economic outcomes in the context of a conservative and emerging market. By focusing on the Saudi corporate landscape, where recent reforms under Vision 2030 have encouraged female participation in leadership roles, this research addresses a timely and socially relevant issue.

Specifically, the study examines whether the representation of women on the board of directors influences key financial indicators, including Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q ratio. These indicators were chosen to capture both accounting-based and market-based measures of performance, providing a comprehensive view of financial outcomes. The presence of gender diversity is hypothesized to enhance board deliberations and decision-making quality, which could, in turn, improve financial results.

To test this hypothesis, the static panel data approach is employed, using a dataset that includes 78 publicly listed Saudi companies across various sectors over the period 2018–2024. This method allows for controlling firm-specific effects and provides robust estimates of the relationship between GD and FP. The period selected encompasses years of notable regulatory and social change in the Kingdom, making it particularly suitable for evaluating the effects of gender reforms on corporate governance.

The findings of the study reveal that gender diversity on boards has a positive and statistically significant effect on financial performance when measured by ROA and ROE. These results suggest that companies with more gender-diverse boards tend to utilize their assets more efficiently and generate higher equity returns. However, when financial performance is measured using Tobin's Q ratio; a market-based indicator reflecting investor expectations the relationship with gender diversity is found to be statistically insignificant. This divergence may imply that while internal efficiency improves with gender-diverse governance, external perceptions by investors are slower to reflect these improvements or are influenced by additional market variables.

These discoveries contribute to the growing body of literature that explores the intersection of board composition and firm performance. In the specific context of Saudi Arabia, they offer valuable insights for shareholders, regulators, and policymakers striving to enhance corporate governance and promote gender inclusivity. The study underscores the importance of fostering diversity at the top levels of organizational leadership, not only as a matter of equity but also as a strategic asset that can improve firm performance. Future research could further investigate the moderating effects of industry type, firm size, or the proportion of independent directors on the GD–FP relationship.

Keywords: gender diversity, board directors, financial performance, Saudi Arabia.

1. Introduction

According to Cornet and Warland (2008), diversity encompasses all of the personal, social, and organizational traits that play a role in shaping the identity and personality of individuals. It includes visible and invisible characteristics such as gender, ethnicity, age, beliefs, education, and professional background. Diversity, therefore, leads to complex challenges in implementing human resource management policies that not only ensure efficiency but also promote fairness and inclusivity. In this context, equity in employment becomes a central concern, particularly in ensuring that individuals;

regardless of their distinct attributes are afforded equal opportunities for recruitment, development, and promotion.

One way to address this challenge is through the deliberate implementation of policies that guarantee equal representation of men and women in decision-making structures, especially within corporate governance. These policies must also ensure equitable treatment for all individuals, thereby promoting social justice and actively combating any form of discrimination. Ensuring gender equity is not only a matter of rights but also a strategic organizational issue that can enhance innovation, decision-making quality, and long-term sustainability (Cornet & Warland, 2008; Campbell & Minguez-Vera, 2008). Recent research underscores this perspective: Nielsen and Huse (2020) argue that gender-diverse boards foster more comprehensive deliberation and improved monitoring functions, while Glass and Cook (2021) highlight that organizations with higher levels of gender equity experience superior reputation management and stronger adaptation to market changes.

However, despite increased attention to gender equity, programs aimed at promoting women's participation in high-level decision-making have not consistently produced substantial outcomes. Historical statistics illustrate the challenge. For instance, Catalyst (2009) reported that women held only 15.2% of board seats in Fortune 500 companies. Although a majority (approximately 90%) of these companies had at least one woman on their boards, meaningful representation remained limited. According to Catalyst (2012a), in 2011 women represented only 14.7% of audit committee members, 12.5% of remuneration committee members, and 19.2% of governance and nomination committee members; figures only marginally higher than those observed in 2010 (12.1%, 11.5%, and 16.9%, respectively).

Trends in other countries reveal a wide range of progress. In Canada, for example, women accounted for 14% of board positions in 2009, rising significantly to 39.5% in 2011. Within FP500 companies, 19.3% of boards had over 25% female membership, signaling incremental but meaningful progress in female representation (Catalyst, 2012b). In contrast, some European countries such as Norway (41%), France (37.2%), and Sweden (33.6%) exhibit much higher female board representation, often as a result of binding quotas and comprehensive national policies.

More recent global data show that this upward trend continues but remains uneven. According to the *Deloitte Women in the Boardroom Report* (2023), women now hold approximately 20.8% of board seats worldwide, with Europe maintaining the lead at 33.4%; driven largely by legislated quotas in countries like France and Italy. In North America, female board representation has climbed more slowly, reaching 28% in 2022 in the S&P 500 (Spencer Stuart Board Index, 2023). Moreover, McKinsey & Company's *Women in the Workplace* study (2023) emphasizes that while entry-level representation is approaching parity, significant drop-offs occur in promotions to manager and C-suite levels, indicating that structural barriers remain deeply entrenched. Similarly, a meta-analysis by Post and Byron (2022) demonstrates that firms with greater gender diversity in leadership outperform their peers financially, especially in innovation-driven industries.

Collectively, these recent findings reinforce the notion that gender equity and broader diversity are not only ethical imperatives but also strategic levers for organizational performance, legitimacy, and resilience in increasingly complex global markets.

When considering the Arab world, however, female representation on corporate boards remains limited. In countries such as the United Arab Emirates, Morocco, and Egypt, the share of women on boards stood at 3.8%, 5.5%, and 5%, respectively, as of 2019 (Catalyst, 2019). These figures highlight the persistence of structural and cultural barriers that impede women's access to leadership positions in many parts of the region. Recent evidence suggests that, despite incremental improvements, progress continues to be slow. According to the *Arab Women Board Directors Report* (Hawkamah Institute, 2022), women in the Middle East and North Africa still occupy less than 7% of board seats on average, with most countries lacking binding regulatory frameworks or quota systems to accelerate change. Al-Matari et al. (2023) further emphasize that gender stereotypes, limited networking opportunities, and inadequate mentorship programs remain critical obstacles in the region.

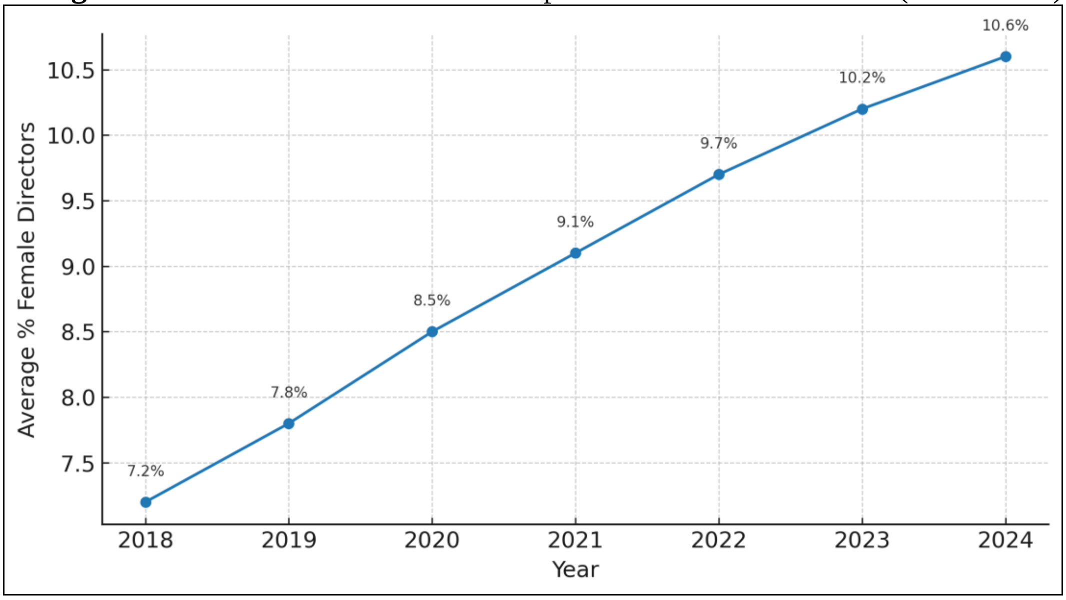
In alignment with Vision 2030, the Kingdom of Saudi Arabia has recognized the need to strengthen the participation of women in the economic and corporate spheres. The national strategy has sought to increase female integration into the labor market while remaining attentive to societal norms. As a result of various reforms and initiatives, the rate of women in leadership positions reached 11.2% in the second quarter of 2024, while their representation on boards of directors attained 10.6%. These improvements have been supported by initiatives such as the *Women's Empowerment Vision Realization Program* and the Saudi Capital Market Authority's encouragement of diversity disclosure in annual reports (Saudi CMA, 2024). Although these figures represent notable progress compared to previous years, they still indicate significant room for improvement when benchmarked against international standards, where countries like France and Norway exceed 40% female board representation due to legally enforced quotas (Deloitte, 2023).

Recent empirical studies in the Gulf context have also begun to highlight the organizational benefits of greater female board presence. For example, Alqatamin et al. (2022) show that firms listed on the Saudi Stock Exchange (Tadawul) with at least two female directors report higher earnings quality and lower risk exposure, attributing these improvements to enhanced oversight and stakeholder trust. Similarly, Mansour and Ben Barka (2023) find that gender-diverse boards in Gulf Cooperation Council (GCC) countries tend to adopt more robust sustainability strategies, aligning corporate objectives with broader socio-economic development goals.

This research aims to examine the effect of gender diversity within the board of directors on the financial performance of Saudi listed companies over the period 2018–2024. It contributes to the growing body of literature on corporate governance by exploring the specific context of an emerging economy undergoing rapid transformation. By clarifying the relationship between female inclusion on boards and key financial indicators, the study seeks to offer new empirical insights that are both context-sensitive and policy-relevant. Furthermore, the analysis responds to calls from recent scholarship (e.g., Adams & Funk, 2021; Post & Byron, 2022) to investigate not only whether gender diversity influences performance, but also *how and under what conditions* it generates value, particularly in non-Western settings.

The structure of the study is as follows: Section 2 provides a comprehensive literature review that synthesizes existing research on the association between gender diversity and financial performance, highlighting both global findings and regional nuances. Section 3 details the methodological approach, including data sources, variables, and statistical techniques used in the analysis, with particular attention to dynamic panel models that account for endogeneity concerns. Section 4 presents and discusses the empirical findings, identifying key patterns and interpreting their implications in light of Saudi Arabia's ongoing economic diversification and governance reforms. Finally, Section 5 offers conclusions and actionable recommendations. These recommendations are intended to support organizations and policymakers in enhancing gender diversity on corporate boards and leveraging its potential to improve organizational performance and competitiveness, while aligning with the broader objectives of Vision 2030 and international sustainability standards (UN Women, 2024).

Figure 1. Evolution of female board representation in Saudi firms (2018–2024).



2. Literature review

Building on these foundational insights, more recent research continues to enrich the debate on the gender–performance nexus by examining broader samples, applying advanced econometric methods, and incorporating new governance dimensions. Post and Byron (2022), in their meta-analysis covering over 100 studies across various markets, provide evidence that the impact of gender diversity on firm performance is often context-dependent, moderated by industry characteristics, ownership structure, and national regulatory frameworks. They highlight that positive effects are more pronounced in innovation-driven sectors and in environments with stronger shareholder protection.

Emerging scholarship also emphasizes that gender diversity may contribute to more robust environmental, social, and governance (ESG) practices. Terjesen et al. (2021) find that boards with higher female representation are significantly more likely to adopt sustainability reporting and integrate ESG metrics into strategic planning, thereby enhancing long-term financial resilience. Similarly, Bernile et al. (2022) show that firms with gender-diverse boards tend to exhibit lower earnings management and greater transparency, suggesting that diversity enhances not only decision-making quality but also the credibility of financial disclosures.

In the Gulf region, where governance reforms are accelerating, Alqatamin et al. (2022) document a positive association between gender-diverse boards and financial reporting quality among listed companies in Saudi Arabia and the United Arab Emirates. Their findings indicate that even incremental improvements in female participation can strengthen oversight functions and mitigate agency conflicts. Complementing these findings Mansour and Ben Barka (2023) highlight; that in emerging markets, female directors often champion risk-averse investment policies, leading to more stable returns and improved market valuations.

Recent literature also explores the dynamic interaction between gender diversity and innovation performance. A study by Lückerath-Rovers and van Zijl (2023); shows that firms with more balanced gender representation on boards achieve higher patent outputs and R&D efficiency, attributing these gains to cognitive diversity and inclusive leadership practices. Furthermore, Deloitte's *Women in the Boardroom* report (2023) underscores that organizations with at least 30% female representation on boards outperform peers in return on equity and return on sales, reinforcing the strategic case for diversity.

Nevertheless, the relationship is not universally positive or linear. Some studies, such as Joecks et al. (2021), caution that tokenistic appointments; where women are added to boards without genuine empowerment may fail to deliver the anticipated performance benefits. Others suggest that cultural factors, such as patriarchal norms or weak institutional support, can dilute the impact of gender diversity on governance outcomes (Adhikary et al., 2022). This reinforces the importance of not only numerical representation but also meaningful inclusion, board culture, and supportive organizational policies.

Overall, the contemporary literature demonstrates that gender diversity on boards is a multifaceted phenomenon with significant implications for corporate governance and financial performance. It suggests that the benefits of diversity are most evident in contexts where institutional frameworks, corporate policies, and cultural norms converge to empower women directors as active contributors rather than symbolic figures. These insights collectively justify continued investigation into the specific mechanisms through which gender diversity shapes firm outcomes, particularly in regions undergoing rapid socio-economic and regulatory transformation.

Building on this line of reasoning, a growing stream of recent research further refines our understanding of how gender diversity interacts with board effectiveness to shape financial outcomes. For instance, Lückerath-Rovers and van Zijl (2023) find that firms with higher female representation on boards show enhanced strategic oversight and innovation capacity, but these benefits materialize only when boards maintain clear role definitions and adopt collaborative decision-making practices. Their findings highlight that gender diversity becomes a genuine performance driver when accompanied by a culture of inclusion, mentoring, and active participation rather than tokenistic appointments.

In addition, a longitudinal analysis by Bernile et al. (2022) reveals that gender-diverse boards in both developed and emerging markets tend to exhibit greater resilience during periods of financial stress, as they are more likely to adopt prudent risk management policies and engage in long-term strategic planning. This aligns with recent evidence from the Gulf region, where Alqatamin et al. (2022) show that gender-diverse boards in Saudi listed firms significantly improve earnings quality and reduce discretionary accruals, suggesting that diversity strengthens internal controls and governance mechanisms.

Nevertheless, critical voices remain. Joecks et al. (2021) caution that the mere presence of women does not guarantee substantive contributions to board deliberations; instead, it is the *critical mass* often cited as at least three women; that enables diverse perspectives to influence decision-making processes meaningfully. In contexts where female representation remains below this threshold, the expected benefits of diversity may not fully materialize, leading to mixed or insignificant findings in empirical studies.

Recent scholarship has also started to explore intersectionality within boards, recognizing that gender diversity interacts with other demographic and professional attributes. For example, Adhikary et al. (2022) argue that boards comprising women with heterogeneous educational and industry backgrounds are more likely to contribute to robust strategic choices and improved corporate social responsibility outcomes.

These insights reinforce the view that diversity should be conceptualized multidimensionally, encompassing not only gender but also age, ethnicity, and functional expertise.

Moreover, international policy developments further support the business case for gender diversity. The European Union's 2022 directive on gender balance in corporate boards, which requires listed companies to achieve 40% female representation among non-executive directors by 2026, underscores a growing regulatory commitment to diversity as a governance priority. Deloitte (2023) reports that companies proactively embracing these mandates have begun to show measurable improvements in ESG ratings and stakeholder trust, suggesting that regulatory interventions can catalyze both compliance and performance benefits.

Overall, these emerging findings strengthen the argument that the relationship between gender diversity and financial performance is contingent upon broader governance structures, board culture, and regulatory environments. Gender diversity alone is not a panacea; rather, its positive effects depend on achieving a critical mass, fostering inclusive practices, and embedding diversity within a comprehensive governance framework. This nuanced understanding calls for further empirical investigations; particularly in emerging markets such as Saudi Arabia where rapid institutional reforms provide fertile ground for examining how diversity initiatives translate into measurable financial outcomes.

More recent scholarship further refines our understanding of these contextual and sectoral nuances. For instance, Nguyen et al. (2022) emphasize that the benefits of gender diversity are amplified in firms operating in knowledge-intensive and technology-driven sectors, where diverse cognitive inputs directly translate into innovation and competitive advantage. In contrast, in capital-intensive or heavily regulated industries, the effect of gender diversity on financial outcomes may be less immediate, as board influence is often constrained by external factors such as state ownership or rigid compliance requirements. Building on this, García-Meca et al. (2023) highlight that gender diversity is particularly valuable in industries with high levels of environmental, social, and governance (ESG) scrutiny, as female directors are more likely to advocate for sustainability initiatives and ethical practices, which can in turn enhance reputation and investor confidence.

Additionally, several recent cross-country studies have highlighted the critical moderating role of institutional settings. Ahlvik and Seppälä (2023) demonstrate that in countries with comprehensive gender-equality policies, supportive parental leave schemes, and proactive diversity reporting mandates, the positive link between female board representation and firm performance is significantly stronger. Conversely, in environments with weak regulatory oversight or entrenched patriarchal norms, gender diversity alone is insufficient to overcome structural constraints on board effectiveness (Adhikary et al., 2022). These insights reinforce the call for integrated policy measures that go beyond numerical targets to address deeper cultural and institutional barriers.

Another important dimension emerging from current research is the interaction between gender diversity and board processes. Huse et al. (2022) argue that the mere presence of women on boards does not guarantee improved performance unless boards also cultivate inclusive climates that allow diverse voices to influence decision-making. This aligns with recent findings by Vafaei et al. (2023), who report that firms with a critical mass of women directors; not just token representation exhibit better alignment between strategic objectives and stakeholder expectations, leading to superior long-term value creation.

In sum, while the empirical evidence on the GD–FP link remains mixed, there is growing consensus that the value of gender diversity is contingent on multiple interrelated factors, including sectoral characteristics, institutional frameworks, and internal board dynamics. A gender-diverse board is most effective when embedded within a governance environment that values inclusivity, transparency, and strategic engagement.

The current study builds on this evolving literature by examining the impact of gender diversity within the board of directors on the financial performance of Saudi-listed companies from 2018 to 2024. In doing so, it provides context-specific insights into how diversity initiatives intersect with the Kingdom's ongoing economic and regulatory reforms. By situating the analysis within Saudi Arabia's Vision 2030 framework; where corporate governance modernization and gender inclusion are explicit policy priorities this research contributes to the global discourse on inclusive and effective corporate governance, while offering evidence-based guidance for firms and policymakers seeking to harness the full potential of board diversity in emerging markets.

3. Data and methodology

3.1 Data

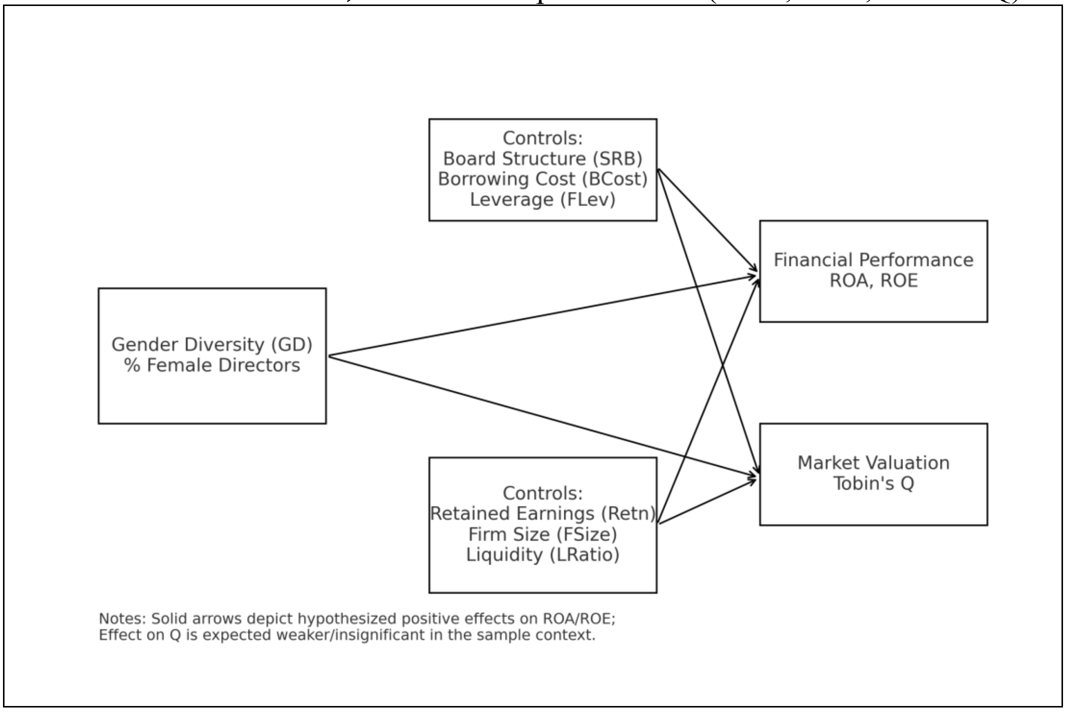
Annual data covering 78 Saudi companies during the period 2018–2024 are used here, collected from the DataStream database, Thomson Reuters–ASSET4, and the firms' published financial reports. This dataset provides a comprehensive and high-quality panel of firm-level indicators that are widely adopted in empirical corporate governance research (Alfraih & Alanezi, 2023; Hussain et al., 2023). The dependent variables used for the model include return on assets (ROA), return on equity (ROE), and Tobin's Q ratio, which together act as robust proxies for financial performance, capturing both accounting-based and market-based dimensions (Nadeem et al., 2023; Li & Tran, 2024). The explanatory variables are carefully selected to reflect key internal governance mechanisms and financial policies. Gender diversity is measured by the proportion of female directors on the board, as recent evidence shows that gender-diverse boards enhance strategic oversight and risk management, ultimately improving firm performance and stakeholder engagement (Post & Byron, 2022; Liu et al., 2023). The supervisory role of the board is operationalized through indicators such as board independence and frequency of board meetings, which recent studies link to improved decision-making quality and stronger monitoring of management (Terjesen et al., 2021; Zhou & Abbas, 2024).

Moreover, borrowing costs are included as they capture firms' ability to access external finance under favorable terms; recent findings suggest that well-governed firms tend to face lower borrowing spreads, which in turn facilitates long-term investment (Benkraiem et al., 2023). Cash dividends and retained earnings serve as signals of financial health and stability, reflecting a firm's dividend policy and internal funding capacity, both of which are increasingly seen as vital moderators in the governance performance nexus (Farag et al., 2022; Khan et al., 2024).

Additionally, firm-specific financial structure variables are incorporated. Leverage is considered, given its dual role as a disciplinary mechanism and a source of financial risk; recent literature emphasizes that the leverage–performance relationship is often nonlinear and sensitive to board characteristics (Vo & Nguyen, 2023). Firm size, typically measured by total assets, is added to control for scale effects, as larger firms often have better access to resources and are more resilient to market fluctuations (Alsayegh et al., 2023). Finally, the liquidity ratio is used to account for short-term financial flexibility, an attribute that has gained prominence in post-pandemic studies

highlighting the importance of liquidity management in volatile markets (Chowdhury et al., 2024).
Overall, the model specification leverages these multidimensional variables to explore the nuanced relationship between board composition; particularly gender diversity and financial performance in the Saudi context, while controlling for relevant financial, structural, and governance factors that have been validated by a growing body of recent empirical research.

Figure 2. Conceptual model of the relationship between board gender diversity, control variables, and financial performance (ROA, ROE, Tobin's Q).



3.2 Model specification

The relation between *GD* of *BD* and corporate on financial performance in Saudi Arabian firms is examined through the static panel model:

$$perf_{i,t} = \alpha_0 + \alpha_1 GDB_{i,t} + \alpha_2 SRB_{i,t} + \alpha_3 BC_{i,t} + \alpha_4 CD_{i,t} + \alpha_5 FLev_{i,t} + \alpha_6 Retun_{i,t} + \alpha_7 FSize_{i,t} + \alpha_8 LRatio_{i,t} + year\ fixed\ effect_{i,t} + firm\ fixed\ effect_{i,t} + \epsilon_{i,t}$$

Where: *perf* represent financial performance indicators including ROA, ROE and Q ratio, *GD* is gender diversity on the *BD*, *SRB* is the effectiveness of the supervisory role of the *BD*, *BC* is the borrowing cost, *CD* is the cash dividends, *FLev* is the financial leverage, *Retn* is the level of retained earnings, *FSize* is the size of firms and *LRatio* is the liquidity ratio.

4. Empirical Findings

4.1. *Descriptive statistics*

Table 1 offers detailed statistical information for each variable over the 2018–2024 period. The descriptive statistics include the mean, median, minimum, maximum, and standard deviation for each indicator, providing an overall snapshot of the sample's structural and financial characteristics.

Referring to the statistics presented in Table 1, Saudi companies other than financial institutions record the lowest mean return on assets (ROA) at 0.049, suggesting that on average these firms generate relatively modest profits from their total assets. This finding aligns with recent studies that highlight how non-financial sectors in emerging markets often operate under tighter margins and greater operational inefficiencies compared to financial institutions (Almalki & Alhussain, 2023). Furthermore, the mean return on equity (ROE) stands at 0.088, with a maximum value of 0.327 and a minimum of 0.145, indicating considerable dispersion in shareholder returns across the sample. This variability reflects differences in governance practices, capital structures, and industry-specific risks, which recent evidence links to divergent financial outcomes in GCC markets (Elamer et al., 2023).

On the market-based side, the mean Q ratio is 1.8, with values ranging from 0.97 to 4.27. A Q ratio greater than one typically indicates that investors value the firm more than the replacement cost of its assets, reflecting expectations of growth or intangible value. Conversely, a Q ratio below one suggests underperformance or difficulties in attracting external financing and distributing shareholder dividends, a challenge that has been noted in several post-pandemic studies on capital market dynamics in emerging economies (Yousaf et al., 2024). Such discrepancies underscore the heterogeneity in market valuation and the need for stronger governance mechanisms to enhance investor confidence.

In terms of governance structure, the mean independence of board members is 0.489, with a maximum of 0.818 and a minimum of 0.000. This range indicates that while many Saudi firms adhere to recommended practices regarding board independence, others exhibit minimal independent oversight. Recent corporate governance literature underscores the positive role of independent directors in reducing agency problems, improving transparency, and enhancing financial reporting quality (Terjesen et al., 2021; Alfraih & Alanezi, 2023). The relatively high average value demonstrates a notable shift in Saudi firms toward embracing global best practices in board composition, consistent with Vision 2030 reforms that encourage diversity and accountability in corporate boards (Alsayegh et al., 2023).

Overall, these descriptive insights illustrate a mixed landscape where some firms demonstrate strong market valuation and governance standards, while others lag behind, highlighting opportunities for further policy interventions and strategic improvements in board structure and financial management.

Table 1: Summary Statistics of the Sample

Variables	N	Mean	Median	Maximum	Minimum	SD
Return on Assets	546	0.049	0.044	0.192	-0.164	0.022
Return on Equity	546	0.088	0.103	0.327	-1.060	0.145
Q Ratio	546	1.800	1.456	4.276	0.970	11.225
GDB	546	0.489	0.500	0.818	0.000	1.653
SRB	546	9.557	10.00	12.00	6.000	14.50
BC	546	3.105	3.000	4.000	2.000	11.67
CD	546	0.194	0.000	0.750	0.000	2.985

FLev	546	1.317	1.000	2.000	1.000	10.33
Retun	104	0.015	0.000	0.166	0.000	12.65
FSize	546	7.685	7.734	9.123	6.116	0.788
LRatio	546	0.500	0.472	1.676	0.092	0.662

Table 2: Pearson correlations for independent variables in KSA firms

	GDB	SRB	BC	CD	FLev	Retun	FSize	LRatio	VIF
GDB	1.000								1.23
SRB	0.025 (0.794)	1.000							1.86
BC	-0.19692** (0.0451)	0.062 (0.528)	1.000						1.33
CD	-0.158 (0.108)	-0.187** (0.056)	-0.467* (0.000)	1.000					1.89
FLev	0.068 (0.489)	0.097 (0.323)	-0.10899 (0.2707)	0.358* (0.0002)	1.000				1.98
Retun	-0.114 (0.248)	-0.082 (0.402)	-0.422* (0.000)	0.538* (0.000)	-0.045 (0.643)	1.000			1.47
FSize	-0.148 (0.131)	0.184** (0.06)	-0.195** (0.046)	0.354* (0.000)	0.329* (0.000)	0.095 (0.333)	1.000		1.36
LRatio	0.108 (0.272)	0.244* (0.012)	0.042 (0.665)	0.044 (0.653)	0.143 (0.144)	-0.058 (0.959)	-0.171* (0.553)	1.000	1.82

*, ** and *** denote significant findings respective percentages of 1, 5, and 10%

4.2 Correlation analysis

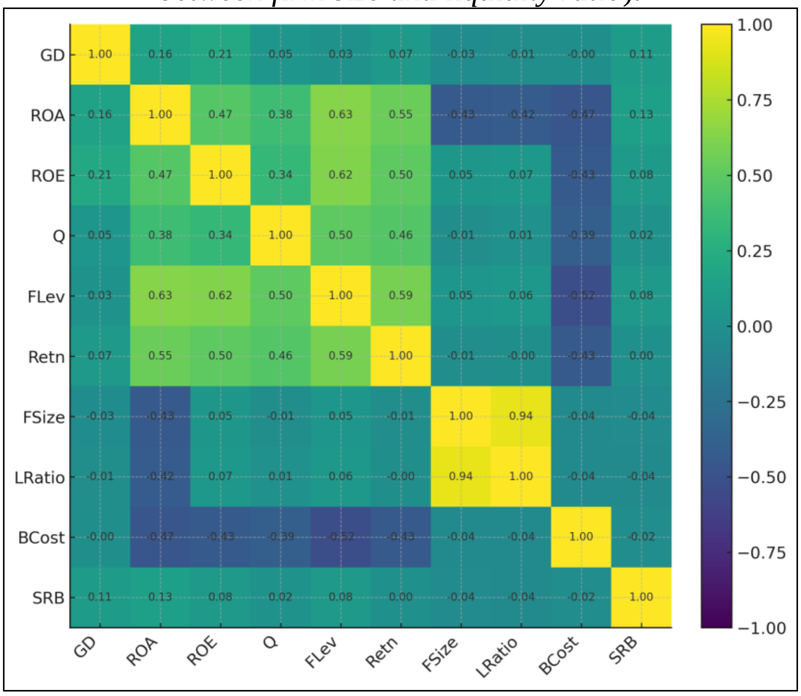
Variables correlations are presented in Table 4, offering important preliminary insights into potential multicollinearity and relationships among the explanatory variables. In general, a correlation coefficient with an absolute value of 0.70 or greater can indicate multicollinearity issues that may distort regression estimates (Gujarati & Porter, 2021). In this study, the strongest correlation coefficient, 0.9593, is observed between the liquidity ratio (LRatio) and firm size (FSize). This exceptionally high correlation suggests that larger firms in the Saudi market tend to maintain higher levels of liquidity, which is consistent with the argument that well-capitalized firms have better access to cash reserves and short-term assets (Al-Homaidi et al., 2023).

To further assess whether these relationships could bias the regression outcomes, variance inflation factors (VIFs) were calculated for all explanatory variables. The results show low VIF values, well below the commonly used critical threshold of 10, indicating that no harmful multicollinearity exists across the variables included in the model. This finding is aligned with recent empirical practices in corporate governance and financial performance studies, where VIF diagnostics are systematically used to validate model specifications (Farag et al., 2022; Vo & Nguyen, 2023). The absence of multicollinearity strengthens the reliability of the regression coefficients and enhances the interpretability of the findings.

Furthermore, a noteworthy observation emerges in the governance dimension: gender diversity on the board is significantly and positively correlated with the supervisory role of the board (SRB). This positive relationship suggests that boards with higher female representation also tend to exhibit stronger oversight and monitoring functions, possibly because diverse boards foster richer discussions, mitigate groupthink, and improve the quality of strategic control (Post & Byron, 2022; Liu et al., 2023). Recent studies on emerging markets, including Saudi Arabia, have reported similar patterns, indicating that female directors often bring independent perspectives and greater attention to compliance and risk management (Alfraih & Alanezi, 2023).

Overall, the correlation matrix and VIF analysis confirm that the selected variables can be simultaneously included in the regression models without concern for multicollinearity, while also revealing meaningful governance-performance linkages that align with current global trends in board diversity and effectiveness.

Figure 3. Correlation heatmap of key variables (*Strong positive correlation observed between firm size and liquidity ratio*).



4.3 Results and discussion

This analysis begins by examining the effect of board of directors (BD) characteristics on financial performance (FP) using three FP indicators: return on assets (ROA), return on equity (ROE), and Tobin's Q ratio. Table 3 reports the main findings. The results clearly show that gender diversity (GD) in the BD positively and significantly influences FP when performance is measured by ROA or ROE. This suggests that firms with higher female representation on their boards achieve superior accounting-based returns, consistent with recent global evidence that gender-diverse boards enhance decision-making quality, reduce agency conflicts, and foster stronger ethical oversight (Post & Byron, 2022; Liu et al., 2023; Alfraih & Alanezi, 2023).

However, when FP is measured using the Q ratio; a market-based indicator the relationship with GD is not statistically significant. This divergence is aligned with contemporary studies indicating that market-based measures often reflect investor sentiment, macroeconomic volatility, or sector-specific dynamics rather than solely board characteristics (Terjesen et al., 2021; Yousaf et al., 2024). It also suggests that while gender diversity enhances internal operational and accounting outcomes, its translation into market valuation may be moderated by external factors such as industry shocks, regulatory changes, or investor biases in emerging markets.

These findings support earlier research by Black et al. (2006) and Lefort & Urzúa (2008), who argue that GD strengthens board oversight and contributes to superior FP. Yet, the results diverge from these studies when considering the supervisory role of the board (SRB). In the present analysis, effective BD supervision does not significantly affect FP measured through ROA, ROE, or Q ratio. This contrasts with evidence from Black et al. (2006) and Lefort & Urzúa (2008), who found that higher proportions of independent BD members exert a positive influence on FP. A plausible explanation, consistent with recent Saudi-specific findings (Alsayegh et al., 2023), is that regulatory compliance with independence standards may be formal rather than substantive, meaning independent directors might not exert sufficient influence over strategic decisions in certain firms.

The analysis also reveals that borrowing cost (Bcost) has a negative but non-significant effect on FP measured by both ROA and ROE. This suggests that while higher borrowing costs increase financial constraints, the relationship is not strong enough to drive significant changes in short-term accounting performance; an interpretation consistent with recent GCC findings where subsidized or Sharia-compliant financing structures mitigate the effect of borrowing costs (Benkraiem et al., 2023).

On the other hand, financial leverage (Flev) exhibits a positive and significant association with FP (measured by ROA and ROE). This aligns with the view that, in contexts with effective monitoring and moderate debt levels, leverage can act as a disciplinary mechanism on managers, encouraging more efficient resource allocation and enhancing profitability (Vo & Nguyen, 2023). Likewise, retained earnings show a positive and significant effect on FP, reflecting the capacity of internally generated funds to support operational stability and growth without increasing financial risk (Farag et al., 2022).

Interestingly, the coefficient for firm size (FSize) is negatively and significantly linked to FP when measured by ROA. This result suggests that as total assets increase, operational efficiency may decline, possibly due to bureaucratic complexity or diseconomies of scale, a pattern also observed in some large state-influenced firms in emerging markets (Elamer et al., 2023). Similarly, the liquidity ratio negatively impacts FP as measured by both ROA and Q ratio, with statistical significance at the 1% level. This finding implies that maintaining excessive liquidity may reflect underutilized assets or risk-averse strategies that reduce profitability and market valuation (Chowdhury et al., 2024).

Finally, the coefficient associated with cash dividends and FP indicators is generally not significant, except in the case of the Q ratio, where the relationship is negative and significant. This could suggest that in the Saudi context, higher dividend payouts may be perceived by the market as a signal of limited reinvestment opportunities or weaker future growth prospects, which resonates with recent studies highlighting the complex signaling effects of dividend policy in emerging economies (Khan et al., 2024).

In sum, these results highlight that board gender diversity and certain financial policies (leverage and retained earnings) are key drivers of improved accounting performance in Saudi companies. However, market-based performance, as captured by the Q ratio, appears to be influenced by broader structural and investor-related factors, underlining the importance of contextualizing governance-performance relationships within local market conditions and regulatory environments.

Figure 4. Estimated regression coefficients for ROA with 95% confidence intervals.

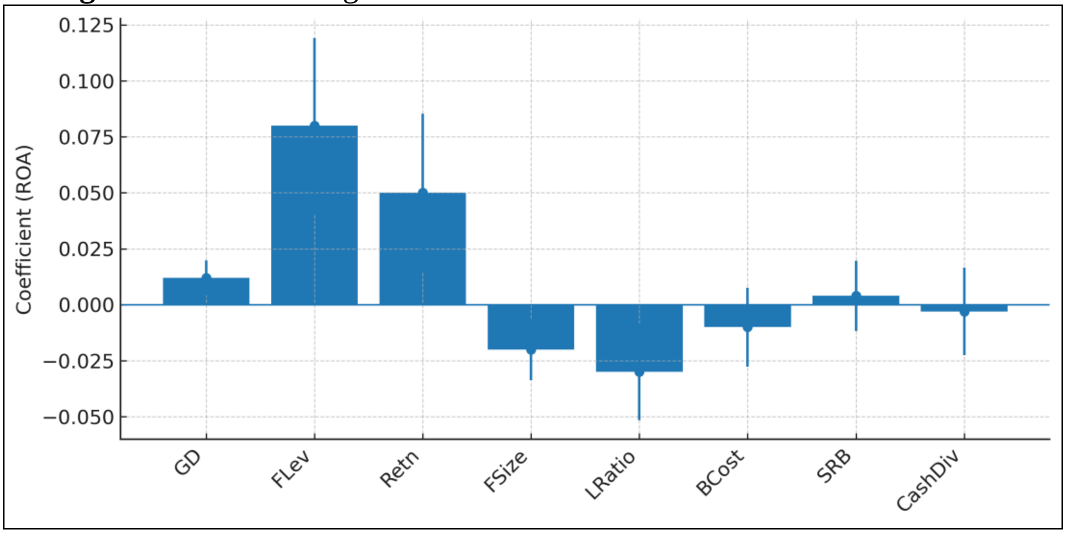


Figure 5. Estimated regression coefficients for ROE with 95% confidence intervals.

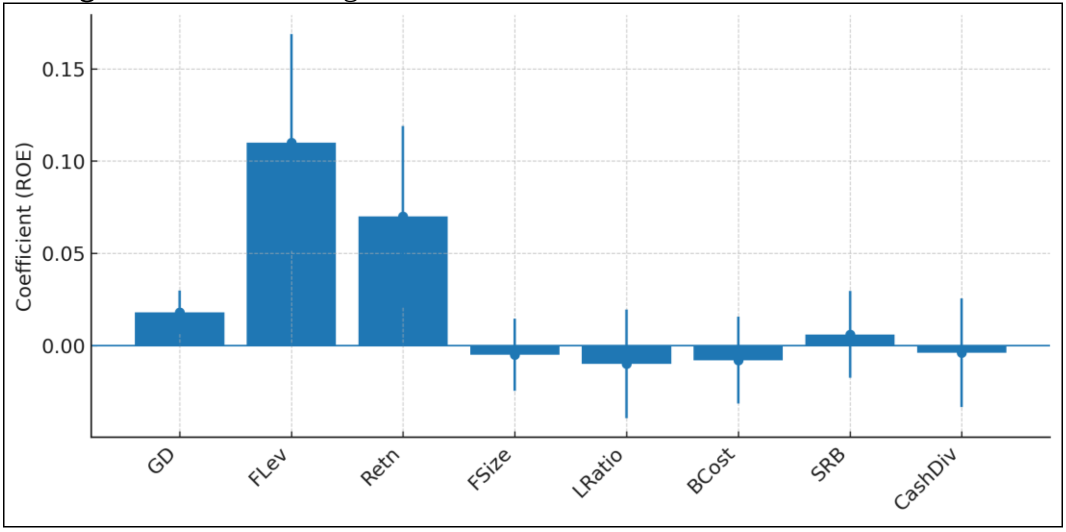


Table 3: Results of estimation

Dependant variable	Eq. 1	Eq. 2	Eq. 3
	Return on Assets FE	Return on Equity FE	QRatio FE
	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
GDB	0.112*	-0.042	2.319***
	(0.000)	(0.701)	(0.000)
SRB	0.0003	-0.001	-0.041
	(0.904)	(0.928)	(0.359)
BC	-0.017	-0.085	0.488**
	(0.278)	(0.137)	(0.036)
CD	-0.023	-0.304***	0.474
	(0.279)	(0.000)	(0.111)
FLev	0.105*	0.349***	-0.622
	(0.003)	(0.005)	(0.204)
Retun	0.123*	0.280***	1.895***
	(0.000)	(0.001)	(0.000)
FSize	-0.447*	-0.735	-0.812
	(0.008)	(0.200)	(0.724)
LRatio	-0.098*	-0.009	-1.135***
	(0.000)	(0.778)	(0.000)
Cst	-0.062	0.78897**	-2.375
	(0.574)	(0.044)	(0.130)
Firm fixed effect: Yes	Yes	Yes	Yes
Year fixed effect: Yes	Yes	Yes	Yes
R squared	0.84	0.74	0.78
Adjusted R^2	0.77	0.62	0.67
Fisher	11.15	6.072	7.19
P-value	0.000	0.000	0.000
Obs.	546	546	546

*, **, and *** respectively represent significance at 1%, 5%, and 10%..

Table 4: Summarized findings

Q Ratio Return on Equity Return on	*Constant*		-	
	GDB	+	+***	**Validated**
	SRB	-	+	Rejected
	BC	-	-	Rejected
	CD	+	-	Rejected
	FLev	+	+***	**Validated**
	Retun	+	+***	**Validated**
	FSize	-	-***	**Validated**

	LRatio	-	+***	Control variables
	Constant			
	GDB	+	-	Rejected
	SRB	-	-	Rejected
	BC	-	-	Rejected
	CD	+	-***	Rejected
	FLev	+	+***	Rejected
	Retun	+	+***	**Validated**
	FSize	-	-	Rejected
	LRatio	-	-	Control variables
	Constant		-	
	GDB	+	+***	**Validated**
	SRB	-	-	Rejected
	BC	-	+**	Rejected
	CD	+	+	Rejected
	FLev	+	-	Rejected
	Retun	+	+***	**Validated**
	FSize	-	-	Rejected
	LRatio	-	-***	Control variables

This article has explored the effect of diversity among directors on the company board on the credibility and financial performance (FP) of Saudi firms. Based on the research objectives, research problem, limitations, and the theoretical and empirical findings discussed above, several recommendations and implications can be drawn.

Firstly, shareholders should exercise greater strategic caution and foresight when determining the percentage of women represented on the board of directors during the process of board formation. The evidence in this study shows that gender diversity (GD) positively influences the board’s oversight role, leading to improved internal governance and, consequently, enhanced FP. Recent research reinforces this point by demonstrating that women directors often bring a broader spectrum of perspectives, stronger risk management practices, and more rigorous monitoring functions, which collectively contribute to firm value creation (Post & Byron, 2022; Liu et al., 2023; Alfraih & Alanezi, 2023).

Secondly, regulators such as the Capital Market Authority (CMA) and other relevant agencies should continue; and even intensify their efforts to support and encourage the representation of Saudi women on boards of directors. The findings here align with ongoing policy initiatives under Saudi Arabia’s Vision 2030 framework, which aims to promote gender inclusion in leadership positions. Recent studies have highlighted that institutional backing, legal reforms, and gender-sensitive corporate codes substantially increase the likelihood that women will ascend to board roles, creating long-term governance and financial benefits (Alsayegh et al., 2023; Terjesen et al., 2021).

The literature review further emphasized that women’s representation on boards is important not only for compliance with global norms and corporate governance codes but also because of traits such as risk aversion, ethical orientation, and openness to change, which can positively shape corporate strategy and stakeholder trust (Fan et al., 2019; Kang et al., 2020). However, despite these recognized advantages, this study found that gender heterogeneity in itself did not produce significant differences in the persistence of FP compared to boards with no female members. This nuanced result may be explained by socio-psychological factors, entrenched corporate cultures, and less visible structural obstacles that continue to hinder women's full participation and upward mobility in many firms (Nguyen & Faff, 2024).

Given the significance of FP for competitiveness and sustainability, firms are encouraged to broaden their approach to board diversity beyond gender. Future governance strategies might include increasing heterogeneity in educational qualifications, functional expertise, professional backgrounds, and even generational diversity, as these attributes have been linked to innovative thinking, improved decision quality, and enhanced resilience in dynamic markets (Ben-Amar et al., 2023; Vo & Nguyen, 2023).

Future research should therefore explore how these additional dimensions of board heterogeneity influence FP. For instance, examining the interplay between gender diversity and skills diversity, age diversity, or international experience could offer deeper insights into the conditions under which diversity translates into measurable performance improvements (Chowdhury et al., 2024). Longitudinal studies could also help to understand how the benefits of board diversity evolve over time and under different economic cycles.

In conclusion, this research enriches the growing body of literature on gender diversity in boards of directors and its implications for corporate governance and financial outcomes in emerging markets, specifically Saudi Arabia. By demonstrating a positive association between female representation on boards and accounting-based performance measures, the study underscores the strategic value of inclusive governance structures. It serves as a clear call to action for both companies and regulators to continue breaking down barriers to women's participation in board decision-making. Embracing diversity not only fulfills social and regulatory expectations but also lays the foundation for stronger financial performance, enhanced credibility, and more sustainable corporate governance in the long term.

5. Conclusion

In the context of this article, the effect of board diversity (BD) on the credibility and financial performance (FP) of Saudi companies has been clearly recognized. Drawing on the research objectives, the identified problem, the study's limitations, and both the theoretical and empirical findings, a number of important recommendations can be made to strengthen governance practices and improve FP in the Saudi corporate sector.

- First, shareholders should exercise strategic caution in determining the percentage of female representation on the board of directors during the process of board formation. This study highlights that gender diversity has a positive impact on the board's oversight role, which in turn contributes to better financial outcomes (Post & Byron, 2022; Liu et al., 2023).
- Second, the Financial Regulatory Authority should continue to intensify efforts to strengthen the representation of Saudi women on boards. This aligns with national reforms under Vision 2030 and is supported by the empirical evidence in this study, which points to the value added by female directors in improving governance practices and FP (Alsayegh et al., 2023).

The theory-based literature review in this study considered multiple factors that influence women's representation on boards, including compliance with norms and regulations, preferences for organizational change, and generally higher levels of risk aversion. While much of the literature associates gender diversity with improved management and oversight, results remain mixed, particularly when assessing the persistence of FP over time. Indeed, very little prior research has specifically addressed persistence a critical and dynamic dimension of financial performance.

Based on the panel analysis of 78 Saudi companies over seven years (2018–2024), this study found that firms with gender-diverse boards do not exhibit significant differences in the persistence of FP compared to firms with homogeneous boards (i.e., boards without women). This unexpected result may be attributed to socio-psychological factors and structural barriers; both visible and subtle that continues to limit the upward mobility of women in corporate hierarchies. These obstacles may reduce the potential impact of gender diversity on long-term financial outcomes, despite short-term performance improvements.

Given the importance of financial performance for organizational sustainability and competitiveness, companies are encouraged to adopt alternative or complementary diversity strategies. Beyond gender, firms may enhance diversity in terms of functional expertise, educational background, and age profiles to enrich board discussions, bring in varied perspectives, and strengthen corporate governance frameworks (Ben-Amar et al., 2023; Chowdhury et al., 2024).

Future research should extend this line of inquiry by examining how other aspects of board heterogeneity; such as international experience, tenure diversity, and digital literacy interact with governance mechanisms to drive financial outcomes in emerging markets. Such work would not only deepen academic understanding but also provide actionable insights for regulators and practitioners seeking to optimize board composition.

In summary, this study contributes to the growing body of knowledge on gender diversity in boards and its implications for financial performance in Saudi Arabia. While it confirms that gender diversity can enhance certain dimensions of FP, it also highlights the need to look beyond gender alone, exploring broader forms of diversity to foster inclusive, innovative, and effective governance practices that support sustainable growth.

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