The synergistic influence of board gender diversity and audit committee on the financial performance of Saudi Arabian banks

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Abstract

This study examines the influence of audit committee characteristics on the financial performance (F_PER) of Saudi Arabian Banks and the moderating role of board gender diversity. It analyzes data from 10 Saudi Arabian banks for a period of 10 years, specifically from 2014 to 2023. It uses two metrics to assess F_PER: ROA and ROE. Additionally, two audit committee characteristics–audit committee size and audit committee activities. The observations indicate that audit committee characteristics have varying effects on F_PER, and the results suggest that the audit committee size has a significantly adverse impact, while audit committee activities have an insignificant impact on F_PER. Gender diversity did not have a moderating effect on this linkage. This finding suggests that adding more members to the audit committee could hinder, rather than improve, its F_PER. To the best of the researcher's knowledge, limited studies have explored the moderating role of board gender diversity in the relationship between audit committees and financial performance within the Saudi Arabian context.

Keywords: *Board gender diversity, financial performance, Saudi Arabia, Governance.*
JEL Classification: *G21; G34; M42*

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1. Introduction

In the dynamic and ever-evolving conditions of global business, the complex linkage between corporate governance and financial performance (F_PER) has gained significant attention from both scholars and practitioners. Corporate governance incorporates principles, regulations, and instructions that outline the management and control of a company (Hamoudah et al., 2024). This framework includes agreements between employees and shareholders, defining the distribution of rewards and responsibilities and measures to prevent conflicts of interest (Buallay et al., 2017; Raimo et al., 2021). One of the most significant components of corporate governance is the audit committees (ACs), which oversee financial reporting and ensure the accuracy of financial accounts (Bii and Kinuthia, 2024). Researchers are increasingly prioritizing the examination of the distinctive traits of ACs (Abdalla et al., 2025). Historically, ACs' responsibilities have focused primarily on issues related to financial reporting and accounting accuracy. However, their role has evolved significantly due to recent corporate collapses and persistent global financial crises. Today, ACs are expected to undertake a broader range of responsibilities, including risk management, assurance and audit processes, and compliance with non-financial regulatory obligations (Ali et al., 2023). A well-structured and independent AC is essential to shielding it from undue influence by management, thereby strengthening corporate governance practices, enhancing reporting standards, and ultimately improving F_PER (Zhou et al., 2018). The AC serves as a significant internal mechanism of corporate governance that supports management in fulfilling its responsibilities to enhance firm value in a challenging and competitive business landscape (Ali et al., 2023; Salleh et al., 2022). Moreover, gender diversity can strengthen ACs' effectiveness in detecting and preventing fraudulent activities by fostering diverse viewpoints and improving oversight (Bii and Kinuthia, 2024).

This study focuses on Saudi Arabia, where the evolution of corporate governance practices has been closely tied to the country's broader economic development goals. As the

largest economy in the Middle East and a member of the G20, Saudi Arabia holds a strategic position in the global economy. The country's economy is historically characterized by a significant reliance on oil revenues, which have long served as the engine of growth and development. However, the volatility and instability of oil prices over the past decade have prompted national efforts to diversify the economy beyond oil dependency. Saudi Vision 2030 represents a transformative initiative aimed at building a prosperous economy supported by a diversified industrial base, strong infrastructure, advanced capital markets, and an increasingly dynamic private sector (Boshnak et al., 2023; Vision 2030 Kingdom of Saudi Arabia, 2024). A core component of Vision 2030 is the strengthening of corporate governance standards, as this ensures that companies are managed efficiently, transparently, and in ways that promote long-term sustainability and profitability (Ciftci et al., 2019). The Saudi Capital Market Authority (CMA) plays a vital role in implementing and supervising corporate governance regulations, aligning them with international benchmarks such as the OECD principles (Al-Faryan, 2020; Buallay et al., 2017). Strengthened governance frameworks not only foster investor confidence and reduce agency problems but also help attract foreign investment and improve the global competitiveness of Saudi firms.

The primary objective of this study is to explore the impact of ACs on the F_PER of Saudi Arabian banks. F_PER refers to a company's ability to generate profits, manage resources efficiently, and create value for shareholders. The linkage between corporate governance and F_PER is multidimensional and complex. Strong governance practices can enhance F_PER by nurturing a culture of transparency, accountability, and ethical conduct. These qualities mitigate risk, prevent fraudulent behavior, and elevate a firm's reputation, as demonstrated in prior studies (Assenga et al., 2018; Terjesen et al., 2016). However, the implementation of governance mechanisms also entails costs associated with regulatory compliance and board independence, which may disproportionately affect smaller firms (Naushad and Malik, 2015; Zabri et al., 2016). This duality necessitates a contextual examination of governance-performance linkages, especially within the unique institutional and economic setting of Saudi Arabia's banking sector.

This research is novel in several ways. First, it focuses specifically on financial firms in Saudi Arabia, particularly banks, which play a vital role in the economic diversification process. It seeks to bridge the existing research gap by examining the impact of AC attributes on F_PER, with an emphasis on the influence of AC size and activity. Second, this study investigates the moderating effect of board gender diversity (BGN) on the relationship between AC characteristics and F_PER in Saudi Arabian banks, a relationship that has not been sufficiently explored in the regional literature. The study also aims to provide deeper insights into the broader linkage between corporate governance and financial outcomes within the banking context, assessing how governance structures influence performance in an emerging and transitioning economy. Given its pivotal role in ensuring financial stability, the impact of corporate governance on the performance of banks remains a critical area of research, particularly in economies that are undertaking reforms to modernize governance standards.

To achieve these goals, the study analyzes data from 10 Saudi banks over the period from 2014 to 2023. It is grounded in a robust theoretical framework that incorporates both agency theory and stewardship theory to explain the dynamics between governance structures and financial outcomes (Kyere and Ausloos, 2021). The research uses two key corporate governance mechanisms: the number of audit committee members (AUD_MEM) and audit committee activities (AC_ACTIVITIES). Financial performance is measured using return on assets (ROA) and return on equity (ROE) as proxies. Board gender diversity (BGN) is introduced as a moderating variable. The analysis also includes control variables such as firm size and firm age to ensure robustness and accuracy in the results.

Regression analysis reveals that AC size has a statistically significant adverse impact on both ROA and ROE. In contrast, AC activity has an adverse but statistically insignificant effect on the same performance indicators. Furthermore, gender diversity, when introduced as a moderating variable, also shows an adverse and statistically insignificant influence on the relationship between AC characteristics and F_PER. These findings suggest that while ACs play a role in shaping performance, their structural composition and diversity characteristics may not always yield the expected positive outcomes, particularly within the examined context. The results call for a more nuanced understanding of how AC effectiveness can be optimized in emerging economies.

This study makes several significant contributions to the literature. First, it is the first of its kind to examine the moderating role of board gender diversity in the linkage between AC attributes and financial performance in the context of Saudi Arabian banks. Second, the study provides actionable insights for a range of stakeholders, including policymakers, regulators, managers, investors, and academics, by highlighting the role that audit committee structure and diversity can play in shaping firm outcomes. These findings offer an evidence-based foundation for developing governance-related policies and strategies tailored to the banking sector. Finally, by focusing on the specific institutional and regulatory environment of Saudi Arabia, this study contributes to the growing body of literature on corporate governance and financial performance in emerging markets and supports the country's broader economic transformation goals. The results hold academic relevance by extending governance-performance research, economic significance by identifying performance drivers in the financial sector, and social impact by supporting more inclusive and effective board practices.

Our study is structured as follows. Section 2 provides a literature review. Section 3 outlines the methodology, including the hypotheses and variable descriptions. Section 4 presents the findings and discusses the quantitative results and statistical significance. Finally, Section 5 offers concluding remarks and recommendations for future research.

2. Literature review and theoretical framework

2.1. Theoretical framework

Agency theory, originally developed by Jensen and Meckling (1976), is a pivotal framework for analyzing how corporate governance affects firm performance and is widely supported by scholars (Bui & Krajcsák, 2024; Natto & Mokoaleli-Mokoteli, 2025; Naz et al., 2022). The theory centers on the relationship between principals (shareholders) and agents (managers), where conflicting interests can emerge, leading to agency problems (Natto & Mokoaleli-Mokoteli, 2025). Shareholders expect managers to act in ways that maximize firm value; however, managers may pursue personal objectives that do not necessarily align with those of shareholders (Naz et al., 2022). This misalignment can drive managers to prioritize personal gain over corporate success (Bui & Krajcsák, 2024). Consequently, shareholders implement governance mechanisms to monitor managerial decisions, incurring what is known as agency costs (Natto & Mokoaleli-Mokoteli, 2025; Naz et al., 2022; Sahu & Mishra, 2023). These functions collectively contribute to aligning managerial behavior with shareholder interests. One key internal governance mechanism is the audit committee, which plays a critical role in overseeing financial reporting, monitoring internal control systems, ensuring legal and regulatory compliance, and liaising with external auditors. The audit committee also evaluates financial disclosures and risk management practices, thus reinforcing transparency and accountability (Kyere & Ausloos, 2021; Safari Gerayli et al., 2021). This study builds upon agency theory by exploring how governance mechanisms, both audit committee and audit committee activities, help reduce information asymmetry, control managerial conduct, and minimize agency costs, thereby contributing to improved firm performance.

Stewardship theory, as introduced by Donaldson (1990), views agents not as self-serving individuals but as stewards whose actions are primarily guided by pro-organizational and

collectivist values, which they perceive to have greater utility than personal interests. According to this perspective, agents are deeply aligned with the organization's goals, demonstrating a strong sense of responsibility, loyalty, and organizational commitment (van Puyvelde et al., 2012). The theory emphasizes that managerial motivation extends beyond monetary or self-interested incentives and instead stems from a desire to serve the organization and contribute to its long-term success (Amin et al., 2024). Managers, therefore, aim to achieve optimal firm performance and enhance shareholder wealth, ultimately reducing the potential for agency conflict (Dohrmann et al., 2024). In line with this view, corporate governance mechanisms—such as the board of directors and audit committees—are seen as supportive structures that facilitate performance by enabling rather than merely controlling management. Within this model, the board's function is collaborative, assisting managers in meeting strategic goals and collectively acting in the best interest of the organization (Gavana et al., 2024). Additionally, female board members are often perceived as diligent, focused, and committed to organizational effectiveness, contributing positively to governance outcomes. In this regard, the presence of audit committee members and gender-diverse boards is associated with stronger economic performance and enhanced firm value. Thus, stewardship theory supports the argument that female representation on boards can reinforce the beneficial effects of audit committee characteristics and activities on firm performance.

2.2 Literature review

Corporate governance practices are crucial for boosting organizational performance. Effective corporate governance enhances the transparency of both financial and non-financial reporting within a company(Buallay and Al-Ajmi, 2020). The literature shows mixed results regarding the linkage between corporate governance (CG) and F_PER. Some researchers (Aggarwal, n.d.; Sianipar and Wiksuana, 2019; Zaman *et al.*, 2015) identified a favourable linkage, while others (Abdullah Hariem and Tursoy Turgut, 2023; Okoye *et al.*, 2020) found an adverse one. On the other hand, Al-ahdal et al. (2020) showed an insignificant link. Kyere and Ausloos, (2021) and Olayiwola, 2018) reported mixed results. These discrepancies arise partly because different studies have focused on diverse governance mechanisms, sometimes only one. Despite this, the linkage between board characteristics and FP remains a prominent topic in CG research, although it has produced inconsistent results. Earlier studies focused on measuring the impact of corporate governance on the F_PER of non-financial firms. However, this study attempts to bridge the literature gap by determining the association of corporate governance and performance in the context of Saudi Arabian banks. This study also attempts to analyze the influence of BGN on the association between AC characteristics and F_PER.

2.2.1 Audit committee activities and financial performance

The board of directors holds primary responsibility for corporate governance, with the audit committee serving as a key subset. This committee is a fundamental component of corporate governance and significantly contributes to its improvement within a firm (Buallay and Al-Ajmi, 2020). The effectiveness of an AC can be evaluated based on several characteristics, including the size, proportion of independent members, frequency of meetings, and financial expertise of its members. This body's main duty is to supervise financial reporting procedures to ensure accurate reporting of business performance (Al-ahdal and Hashim, 2022; Safari Gerayli *et al.*, 2021). As discussed in García-Sánchez *et al*. (2012), to oversee the fairness of an organization an AC plays a major role and maintains a high level of AC activity. A more active AC that meets frequently has more opportunities to supervise the financial reporting process, detect management risks, and oversee internal controls. Consequently, F_PER improves with an increase in AC activity (Ali Al-Matari *et al.*, 2012). AC activity is proxied by the number of AC meetings in various studies (Ali Al-Matari *et al*., 2012; Ali et al., 2023; García-Sánchez *et al*., 2012; Kyereboah-Coleman, 2008; Sami & Khaled, 2021). A study conducted by Ben Barka and Legendre (2017) showed that board independence increases a

firm's ROA and ROE. However, AC independence is adversely associated with F_PER, and the frequency of AC meetings is positively associated with ROA and adversely associated with ROE. Farouk and Hassan (2014) discovered that auditor independence and size significantly and positively impact F_PER. Aanu *et al.* (2014) conducted a study on 25 Manufacturing Companies in Nigeria from to 2004-2011 to check the impact of AC independence, AC meetings, AC financial expertise, and AC size on ROE, ROA, and ROCE and found a favourable linkage between AC independence, AC financial expertise, and F_PER. Frequently meeting ACs to obtain more information regarding auditing and accounting matters (Xie *et al.*, 2003). If any problem arises regarding such issues, meeting the AC frequently can easily reduce the possibility of financial fraud. Ali Al-Matari et al., (2012) examined the linkage between the internal corporate governance mechanism and the performance of Saudi companies listed on the Saudi Stock Exchange in 2010 and found that AC size has a significant linkage with F_PER; however, the proportion of non-executive directors, Board Size, CEO Duality, AC Independence, and AC meetings were found to be insignificantly related to F_PER. A study on 26 financial firms and 92 non-financial firms conducted by Hoque et al., (2013) observed a significant favourable correlation between the frequency of audit and remuneration committee meetings with ROA and ROE. Lin et al., (2006) reported an insignificant association between earnings restatements and AC_ACTIVITIES (meetings). Kyereboah-Coleman, (2008) highlighted that the frequency of AC meetings has a significant favorable impact on Tobin's Q, but has no linkage with ROA. They further argued that independence and frequent meetings were insufficient for ACs to monitor effectively. Ali et al., (2023) discovered a significant favorable linkage between the frequency of AC meetings and firms' F_PER (ROA). Rahman et al., (2019) found adverse effects of frequent AC meetings on ROA, profit margins, and EPS. Based on the above literature, the following hypothesis is proposed.

H_1. *There is a significant impact of audit committee activities on firm performance.*

2.2.2 Audit committee size and financial performance

Afza and Nazir (2014) examined 124 companies of the KSE-100 in Pakistan to verify the impact of Audit Committee Size, AC independence, AC activity, and External Audit Quality on ROA and Tobin's Q and discovered a favourable and significant linkage between these variables. Another study, Kyereboah-Coleman (2008) found that the AC size of an AC has a favourable influence on ROA and Tobin's Q. A study by Al-Matari et al., (2014), analyzed the effect of AC size, AC independence, AC meetings, executive committee size, and Executive Committee Independence on ROA found that all the linkages are insignificant.

Ali *et al.* (2023) also found that AC size had no impact on F_PER. Rahman *et al.* (2019) Investigated how audit characteristics influence F_PER using external audit quality (BIG4), AC meeting frequency, and AC size as proxies and measured performance through ROA, profit margin, and EPS. The sample comprised 503 firm-years from manufacturing firms listed on the Dhaka Stock Exchange-listed manufacturing firms from 2013-2017. The results show that external audit quality (BIG4) and AC size positively affect F_PER. Furthermore, Hassan Bazhair, (2022) have found larger ACs and frequent meetings adversely affect Saudi firms' performance. However, Aldamen et al., (2012), smaller ACs with more experience and financial expertise tend to positively influence F_PER.

Alqatamin (2018) examined how AC characteristics impact company performance, findings indicate that AC size, gender diversity and AC independence are positively correlated with F_PER. Another study by Al-Okaily and Naueihed (2020) discovered that AC size, meeting frequency, and expertise are not significantly related to the performance of family firms, but positively and significantly related to that of non-family companies. Al-Jalahma (2022) analyzed the linkage between AC size and company performance of 14 non-financial publicly listed companies in the Bahrain Bourse from 2005 to 2019 and found that larger ACs tend to perform poorly. Based on the above literature, the following hypothesis is proposed.

H_2. *There is a significant impact of audit committee size on firm performance.*

2.2.3 Board Gender diversity and financial performance

Agency theory contends that because female directors can make difficult decisions and offer fresh perspectives to boards, they can significantly reduce agency costs. Boshnak et al. (2023) found that firms with greater gender diversity on their boards experienced improvements in Tobin's Q ratio during the pandemic period. Furthermore, BGN was also associated with significantly higher returns on assets for these companies, underscoring the critical role of diverse leadership in effectively navigating crises. A diverse board of directors contributes a range of viewpoints, experiences, ideas, and business expertise to the board's decision-making process, which in turn influences the performance of the company (Baranchuk & Dybvig, 2009; Sahu et al., 2025). Similarly, Assenga et al. (2018) explored how board characteristics influence the F_PER of listed firms in Tanzania, taking variables such as outside directors, board size, CEO/chair duality, gender diversity, board skills, and foreign directors. The results indicate that gender diversity positively affects F_PER. Francoeur et al., (2008) proposed that women, along with ethnic minorities, external shareholders, and foreigners, often provide new insights into complex matters, potentially mitigating informational biases in strategy development and problem-solving. Tulung and Ramdani (2018) demonstrated that higher performance metrics, such as Tobin's Q and return on assets. There is mixed empirical evidence of the linkage between female directors and a firm's F_PER. For instance, studies by Abdullah et al. (2016) and Mahadeo et al. (2012) found a favourable linkage between the proportion of women on boards and F_PER. By contrast, Ahern Kenneth and Dittma Amy (2012) an adverse linkage was found, and Marimuthu (2009) did not find a link between the ratio of women on boards and F_PER.

This study investigates the link between gender-diverse ACs and audit fees in Indian firms (Miglani & Ahmed, 2019). Using data from 200 listed companies from 2011-2014, the study revealed a significant favourable association between female financial experts on ACs and higher audit fees. The findings highlight the role of female financial experts in driving higher audit quality. A study examining the AC characteristics (size, activity, and gender diversity) on F_PER was performed by Ahmed et al. (2024) on Egyptian banks from 2018-2022 found that AC size and activity insignificantly impacted ROA and ROE, while gender diversity positively influenced both. The authors also explored the moderating role of BGN in this association and discovered that BGN strengthens the linkage between AC characteristics and F_PER. From the above, it is clear that BGN impacts F_PER as well as the transparency of ACs. However, the direction of the linkage between BGN and F_PER remains unclear. Moreover, numerous studies have linked AC characteristics to F_PER, with most focusing on non-financial firms with mixed findings, leaving research on banks scarce. This study uniquely examines how gender diversity influences the linkage between AC traits and F_PER of Saudi Arabian banks. Based on the above literature, the following hypothesis is proposed.

H3. Board gender diversity significantly moderates the linkage between audit committee characteristics and firm performance.

Based on aforementioned theoretical framework and literature review, we present a conceptual framework of the study in Figure 1.

3. Methodology

3.1. Data

This research explores how board gender diversity moderates the linkage between audit committee characteristics and the F_PER of banks listed in Saudi Arabia. The study evaluates F_PER using two key metrics: return on assets (ROA) and equity (ROE). Additionally, two audit committee characteristics, the number of audit committee members (AC_MEM) and audit committee activities (AC_ACTIVITIES), were selected. Furthermore, we controlled the number of board members (B_MEM), the independent board of directors

(BIND), firm size (FSIZE), and firm age (FAGE). The sample comprised 10 banks in Saudi Arabia, covering 2014 to 2023. Investigating the Saudi banking sector provides a compelling and contextually rich opportunity to understand the link between BGN, ACs, and F_PER. Corporate governance in Saudi Arabia has evolved significantly in recent years and is driven by regulatory reforms and broader economic transformation initiatives. This is especially important within the context of Saudi Arabia's legal framework, which upholds the principle of equality as outlined in the Basic Law of Governance and reinforced by the country's commitment to the Convention on the Elimination of All Forms of Discrimination Against Women (*Gender Justice & The Law Kingdom of Saudi Arabia*, 2019; World Bank Group, 2020). These factors make Saudi Arabia a significant region for the present study.

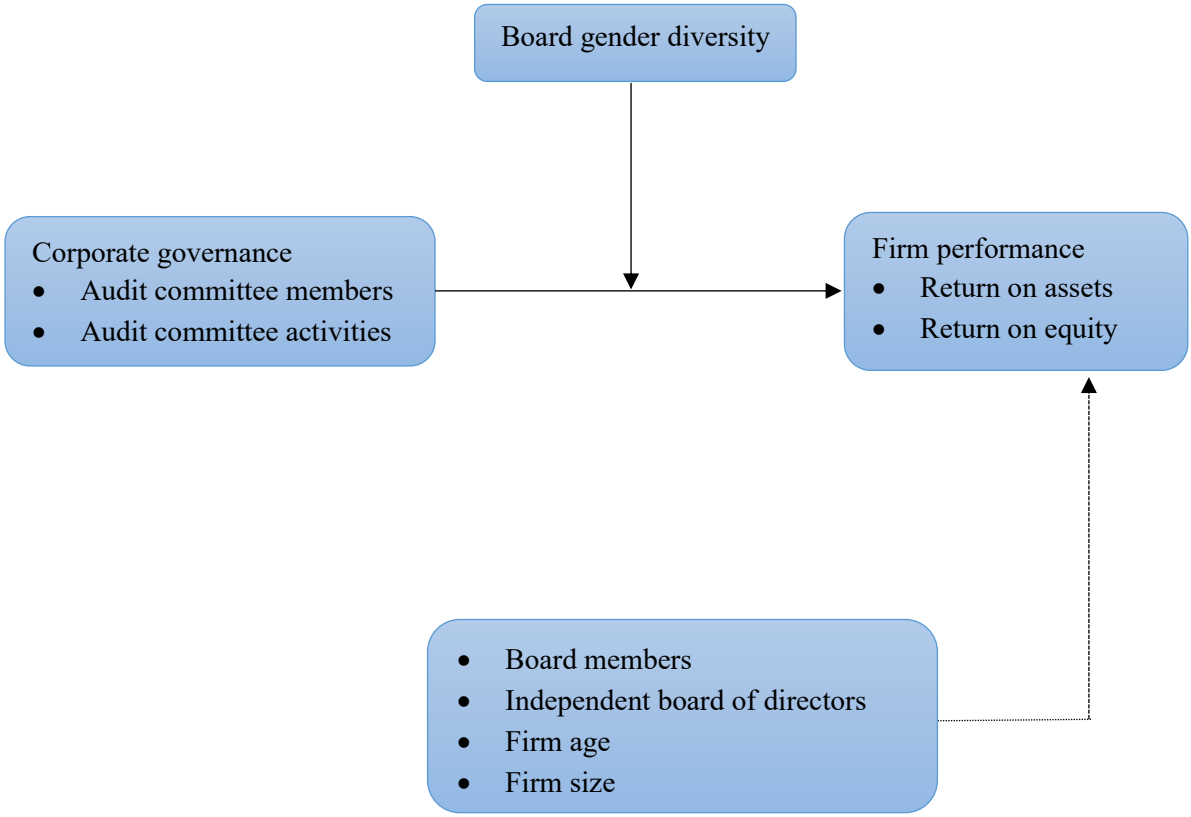

Figure 1. Conceptual Framework

3.1.1 Variables definitions

The explained variables in our study are the measures of financial performance, namely, ROA and ROE. Return on Assets (ROA) reflects a company's ability to generate profits from its total assets, indicating how efficiently it utilizes these assets to produce net income (Al-ahdal and Hashim, 2022; Ben Barka and Legendre, 2017; Pillai and Al-Malkawi, 2018; Rahman *et al.*, 2019). Return on Equity (ROE) assesses the company's capacity to generate profits from shareholders' equity, demonstrating the effectiveness with which it employs the investments of its equity shareholders to generate earnings (Aanu *et al.*, 2014; Afza and Nazir, 2014; Al-ahdal and Hashim, 2022; Al-Janadi *et al.*, 2016; Ben Barka and Legendre, 2017). To normalize the ROE, we took the natural logarithms of ROE.

The explanatory variable of our study is audit committee characteristics, for which we have taken the number of audit committee members (AC_MEM) and audit committee activities (AC_ACTIVITIES). The number of audit committee members (AC_MEM) refers to the total no. of members serving on a company's audit (Olayiwola, 2018; Zhou *et al.*, 2018). Audit committee activities (AC_ACTIVITIES) include overseeing financial reporting, monitoring internal control systems, ensuring compliance with laws and regulations, and managing

linkages with external auditors. The committee reviews financial statements, evaluates risk management policies, and ensures the integrity and accuracy of the financial disclosures (Kyere and Ausloos, 2021; Safari Gerayli *et al.*, 2021).

Table 1. Variables' description

Name	Abbreviation	Variable Measure	Data Sources
Explained variable			
Return on assets	ROA	Profitability concerning its total assets; calculated by dividing the net income by the total assets.	Annual reports
Return on equity	ROE	Return on Equity (ROE) evaluates how effectively a company utilizes shareholders' equity to generate profits. It is determined by dividing net income by shareholders' equity.	Annual reports
Explanatory variable			
No. of audit committee members	AC_MEM	No. of members in the audit committee	Annual reports
Audit committee activities	AC_ACTIVITIES	The total count of meetings conducted within a calendar year.	Annual reports
Moderator			
Board gender diversity	BGN	The total count of female members serving on the board of directors.	Annual reports
Control variables			
No. of board members	B_MEM	The total number of individuals serving as members of the board of directors.	Annual reports
Independent board of directors	BIND	Count of independent directors on the board	Annual reports
Firm size	FSIZE	Logarithms of total assets.	Annual report
Firm Age	FAGE	Logarithms of the number of years since the incorporation of the firm.	Annual reports

Gender diversity was a moderator in this study. The proportion of females on the board can influence the impact of the audit committee on firm performance. Board gender diversity (BGN) is the inclusion and representation of women in a company's board of directors. This diversity aims to balance gender representation, ensuring that both men and women have a voice in the highest decision-making body of an organization (Mahadeo *et al.*, 2012; Terjesen *et al.*, 2016).

We used control variables, including the number of board members (B_MEM), explanatory board of directors (BIND), firm size (FSIZE), and firm age (FAGE). Number of board members (B_MEM) is the Total number of directors that shape the board (Kyere and Ausloos, 2021; Olayiwola, 2018; Pillai and Al-Malkawi, 2018; Saidat *et al.*, 2019). The independent board of directors (BIND) refers to having directors on a company's board who are not part of the company's executive team and have no significant financial or personal connections to the company. This ensures that they can make impartial decisions in the best interests of shareholders and stakeholders (Fuzi *et al.*, 2016; Kyere and Ausloos, 2021; Saidat *et al.*, 2019). Firm size (FSIZE) is the magnitude of an organization's activity. This is calculated by taking the natural log of the aggregated assets of the companies (Al-Janadi *et al.*, 2016; Koji *et al.*, 2020; Rahman *et al.*, 2019). Firm age (FAGE) refers to the period a company has been in operation since its founding or incorporation (Koji *et al.*, 2020; Rahman *et al.*, 2019).

3.2. Statistical models

This study employed the following equations to estimate the impact of corporate governance on firm performance:

$$ROA_{it} / ROE_{it} = \beta_0 + \beta_1 AC\_MEM_{it} + \beta_2 AC\_ACTIVITIES_{it} + \beta_3 B\_MEM_{it} + \beta_4 BIND_{it} + \beta_6 FSIZE_{it} + \beta_7 FAGE_{it} + \varepsilon_{it} \quad (1)$$

$$ROA_{it} / ROE_{it} = \beta_0 + \beta_1 AC\_MEM_{it} + \beta_2 AC\_ACTIVITIES_{it} + \beta_3 BGN_{it} + \beta_4 BGN_{it} * AC\_MEM_{it} + \beta_5 BGN_{it} * AC\_ACTIVITIES_{it} + \beta_6 B\_MEM_{it} + \beta_7 BIND_{it} + \beta_8 FSIZE_{it} + \beta_9 FAGE_{it} + \varepsilon_{it} \quad (2)$$

We conducted several diagnostic tests and performed additional analyses to validate our results. First, we conducted the Breusch-Pagan LM test to choose between random/fixed effects and pooled ordinary least squares (OLS) estimation methods. The significant chi-square statistics suggest that the pooled OLS model was inappropriate for our investigation. Additionally, we performed the Hausman test to select the appropriate estimation method between the fixed- and random-effects models. The result of the Hausman test is significant and indicates that the fixed-effects model is suitable for our study. Therefore, a fixed effects estimation was utilized for analysis. To address autocorrelation and heteroscedasticity, the Driscoll-Kraay standard error was utilized. Furthermore, we perform an additional analysis using an alternative measure of F_PER (net profit margin).

4. Data Analysis and discussion

4.1. Descriptive Analysis

The descriptive statistics of all key variables are presented in Table 2, including the min and max values, mean, and Standard Deviation (SD). The Table reveals that the mean value of ROA is 0.118, whereas the min and max values are 0.017 and 0.205, respectively. In contrast, the min, max, and mean ROE values were 0.002, 0.027, and 0.017, respectively. Regarding the explanatory variables, the average number of AUD_MEM was 4.25 with a SD of 0.936, and the average value of AC_ACTIVITIES was 6.47 with a standard deviation of 1.85. The statistics of the control variables are presented in Table 2 (Panel a). Further, we have one dichotomous variable, BGN, as presented in panel B.

Table 2. Summary statistics (Panel A)

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	100	.118	.044	.017	.205
ROE	100	.017	.005	.002	.027
AC_MEM	100	4.25	.936	3	5
AC_ACTIVITIES	100	6.47	1.85	4	10
BO_MEM	100	9.88	.795	9	11
BIND	100	4.19	1.022	2	7
FSIZE	100	19.026	.698	17.8	20.634
FAGE	100	42.2	17.57	9	68

Tabulation of Board Gender Diversity (Panel B)

Board Gender Diversity	Freq.	Percent	Cum.
0	87	87.00	87.00
1	13	13.00	100.00
Total	100	100.00	

4.2. Correlation

Table 3 presents a correlation matrix that contains the correlation coefficients between the variables in our dataset. Table 3 reveals that ROA is positively associated with AC_ACTIVITIES. Similarly, ROE has a favourable and significant association with AC_MEM and AC_ACTIVITIES, signifying that high returns are correlated with improved AC_ACTIVITIES and AUD_MEM Similarly, board members have favourable and significant correlations with ROA and ROE. Firm size and age have a favourable and highly significant link with ROA and ROE, meaning that large and old firms have better ROA and ROE than

small and new firms.

Furthermore, the correlation matrix also shows no multicollinearity among the explanatory variables, as there is no correlation between the explanatory variables, which is higher than 0.80. The variance inflation factor (VIF) and tolerance values (1/VIF) also confirm that our results are free from multicollinearity issues (Sahu et al., 2024).

Table 3. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ROA	1.000								
(2) ROE	0.857***	1.000							
(3) AC_MEM	0.114	0.223**	1.000						
(4) AC_ACTIVITIES	0.165*	0.239**	0.001	1.000					
(5) BGN	-0.151	-0.073	-0.040	0.063	1.000				
(6) BO_MEM	0.235**	0.280***	0.136	0.320***	0.359***	1.000			
(7) BIND	-0.079	0.135	0.214**	0.027	-0.014	0.327***	1.000		
(8) FSIZE	0.372***	0.541***	0.516***	0.425***	0.276***	0.336***	0.074	1.000	
(9) FAGE	0.222**	0.258***	0.481***	0.262***	0.161	0.120	-0.099	0.728***	1.000
VIF	-	-	1.733	1.445	1.314	1.52	1.26	3.175	2.402
1/VIF	-	-	0.577	0.692	0.761	0.658	0.793	0.315	0.416

Note: *** p<0.01, ** p<0.05, * p<0.1

White's test (White, 1980), an analytical method used to detect heteroskedasticity in regression models. The null hypothesis is that there is no heteroscedasticity. A p-value above 0.05 indicates the absence of heteroskedasticity, suggesting that the error terms have constant variance. Another diagnostic test, the Wooldridge test outcome, is an investigative instrument used to identify autocorrelation in panel data models. The alternative hypothesis suggests the existence of autocorrelation, whereas the null hypothesis states its absence. After analyzing the data, it was revealed that there was no autocorrelation, with a p-value above 0.05, accepting the null hypothesis.

4.3. Regression Analysis

Table 4 presents the regression results. Based on the Breusch–Pagan LM test and Hausman test, we used the fixed effect estimation method to investigate the two objectives. The first is the direct impact of AC characteristics on F_PER, ROA, and ROE. Second, there is the moderating role of BGN on the linkage between AC characteristics and F_PER. Table 4 (first and second columns) presents the direct effect and Table 4 (third and fourth columns) shows the moderating effect results. In the first model, the explanatory variables were regressed against ROA, and in the second model, the same explanatory variables were regressed against ROE. These findings indicate that AUD_MEM has an adverse and significant effect on ROA and ROE. The results regarding the AUD_MEM and F_PER linkage are contradictory, Al-Matari et al. (2014) but support the findings of Aldamen et al. (2012), Hassan Bazhair (2022), Farouk and Hassan (2014) and Afza and Nazir (2014). The results regarding the AC_ACTIVITIES and F_PER linkage are mixed. AC_ACTIVITIES has an adverse impact on ROA and a favourable impact on ROE, although the impact is insignificant in both cases. The results are supported by Al-Jalahma (2022), Bansal and Sharma, (2016) and Alqatamin (2018). However, these findings contradict Rahman et al., (2019) and those of Abdullah Hariem and Tursoy Turgut (2023). Additionally, board members have an adverse and significant impact on F_PER; therefore, identifying the increasing number of board members may deteriorate F_PER. These results are aligned with Buallay et al. (2017) in terms of the finding that the number of board members has a significant favourable impact on ROA. The findings contradict Pillai and Al-Malkawi (2018) the adverse impact of board size on F_PER and Aljifri and Moustafa (2007) found insignificant results of board size on the performance of firms listed in the UAE. BIND has an insignificant impact on F_PER, as supported by Assenga *et al.* (2018), Haniffa and Hudaib (2006), and Zabri *et al.* (2016).

Furthermore, the third and fourth models in Table 4 show that BGN has no moderating effect on the linkage between AC characteristics and F_PER because the interaction terms of BGN and AC characteristics are insignificant. These findings are aligned with those of previous studies (Assenga et al., 2018). However, Marimuthu (2009) and Ahern Kenneth and Dittma Amy (2012) find an adverse but highly significant impact on F_PER aligning with Assenga *et al.* (2018) and Terjesen *et al.* (2016), who found a favourable impact.

Table 4. Direct effect

	(1)	(2)	(3)	(4)
VARIABLES	**ROA**	**ROE**	**ROA**	**ROE**
AUD_MEM	-0.00185**	-0.0181***	-0.00157	-0.0149*
	(0.000887)	(0.00673)	(0.00108)	(0.00810)
AC_ACTIVITIES	-5.59e-05	0.00100	1.67e-05	0.00183
	(0.000351)	(0.00266)	(0.000369)	(0.00277)
BGN			0.00633	0.0812
			(0.00831)	(0.0624)
BGN_ACMEM			-0.000605	-0.0111
			(0.00157)	(0.0118)
BGN_ACACT			-0.000506	-0.00503
			(0.000833)	(0.00626)
B_MEM	-0.00177**	-0.0273***	-0.00142	-0.0213**
	(0.000881)	(0.00669)	(0.00132)	(0.00991)
BIND	0.000328	0.00572	0.000274	0.00490
	(0.000494)	(0.00375)	(0.000510)	(0.00383)
FSIZE	0.00752	0.0523	0.00793	0.0562
	(0.00481)	(0.0365)	(0.00509)	(0.0382)
FAGE	-0.000181	-0.00259*	-0.000168	-0.00232
	(0.000191)	(0.00145)	(0.000213)	(0.00160)
Constant	0.0415***	0.484***	0.0369**	0.408***
	(0.0113)	(0.0858)	(0.0172)	(0.129)
Hausman test	14.698**	67.219***		
	44.51***	29.98***		
R-squared	0.120	0.272	0.129	0.292
Number of companies	10	10	10	10

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

4.4. Additional analysis for Robustness Check

Table 5 presents the results of a robustness check using the Driscoll-Kraay robust standard error. Driscoll-Karry was applied to analyze our direct and moderating linkages, ensuring the reliability of the results obtained from the fixed effect. AUD_MEM has an adverse and significant effect on F_PER. This finding is aligned with the main results, and the BGN and the interaction terms of BGN with the AC exhibit an insignificant impact, signifying no moderation effect. These results are aligned with those of the primary analysis. Likewise, FSIZE shows a favourable and highly significant impact on both explained variables. Overall, the results are aligned with those of the main model. Therefore, the robustness checks using Driscoll-Kraay confirm the key findings of the fixed-effect regression model. Consistency across these methods enhances the reliability of the conclusions drawn from the regression.

4.5. Additional Analysis

An alternative measure of firm performance (NET PROFIT MARGIN (NPM))

To assess the validity of the findings and assess the linkage between ACs, BGN, and F_PER, this study employed alternative measures other than ROA and ROE. NPM was employed as a substitute measure. The findings presented in Table 6 indicate that AUD_MEM exhibits an adverse and significant effect on firms' NPM, while the BGN and interaction terms show a favourable but insignificant impact. These outcomes align with the fixed-effects regression results shown in Table 4, affirming the robustness of the findings.

Table 5. Driscoll-Kraay standard error

	(1)	(2)	(3)	(4)
VARIABLES	**ROA**	**ROE**	**ROA**	**ROE**
AUD_MEM	-0.00185*	-0.0181*	-0.00157	-0.0149
	(0.000981)	(0.00924)	(0.00101)	(0.0110)
ACTIVITIES	-5.59e-05	0.00100	1.67e-05	0.00183
	(0.000181)	(0.00141)	(0.000136)	(0.00137)
BGN			0.00633	0.0812
			(0.00937)	(0.0499)
BGN_ACMEM			-0.000605	-0.0111
			(0.00137)	(0.00913)
BGN_ACACT			-0.000506	-0.00503
			(0.000737)	(0.00442)
B_MEM	-0.00177*	-0.0273***	-0.00142**	-0.0213***
	(0.000912)	(0.00471)	(0.000611)	(0.00400)
BIND	0.000328	0.00572**	0.000274	0.00490*
	(0.000209)	(0.00198)	(0.000239)	(0.00253)
FSIZE	0.00752**	0.0523**	0.00793**	0.0562**
	(0.00318)	(0.0195)	(0.00325)	(0.0210)
FAGE	-0.000181	-0.00259	-0.000168	-0.00232
	(0.000225)	(0.00179)	(0.000211)	(0.00160)
Constant	0.0415**	0.484***	0.0369**	0.408***
	(0.0146)	(0.0785)	(0.0128)	(0.0559)
R-squared	0.121	0.272	0.129	0.292

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6. Regression using Net Profit Margin as explained variable

	(1)	(2)
VARIABLES	NPM	NPM
AUD_MEM	-0.0434*	-0.0321
	(0.0232)	(0.0280)
ACTIVITIES	-0.00608	-0.00329
	(0.00916)	(0.00958)
BGN		0.160
		(0.216)
BGN_ACMEM		0.0203
		(0.0408)
BGN_ACACT		-0.0269
		(0.0216)
B_MEM	-0.0206	-0.0300
	(0.0230)	(0.0342)
BIND	0.00607	0.00605
	(0.0129)	(0.0132)
FSIZE	0.0220	0.0508
	(0.126)	(0.132)
FAGE	0.000302	-0.000741
	(0.00498)	(0.00553)
Constant	0.656**	0.765*
	(0.295)	(0.445)
Observations	90	90
R-squared	0.071	0.091
Number of companies	10	10

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

5. Conclusion, implications, and future research

This study examines the moderating effect of BGN on the influence of AC characteristics such as AC size and AC_ACTIVITIES on two measures of F_PER: ROA and ROE of 10 listed banks in Saudi Arabia from 2014-2024. The results indicate that AC

characteristics influence F_PER differently; a larger AC size is significantly and adversely associated with F_PER. On the other hand, AC activity showed no significant effect. Furthermore, gender diversity does not appear to moderate the linkage between AC characteristics and F_PER. This may be attributed to the limited representation of women on the boards of Saudi Arabian banks. These findings suggest that increasing the AUD_MEM may reduce F_PER.

Theoretical implications of this study contribute to the ongoing debate in corporate governance literature by offering nuanced insights into the role of AC characteristics in influencing firm outcomes within the unique institutional and cultural setting of Saudi Arabia. The lack of a moderating effect of gender diversity highlights the importance of context when applying governance theories, such as agency and stewardship theories, especially in markets where female participation on boards is still limited. These findings underline the need to revisit traditional assumptions about board diversity and its universal benefits, suggesting that diversity must be supported by inclusive practices and institutional reforms to be effective.

Practical implications are equally significant for policymakers, regulators, and stakeholders. First, the results suggest that Saudi banks should not only comply with corporate governance requirements in terms of board composition but also critically evaluate the optimal size and functionality of audit committees to enhance performance. Second, regulators such as the Saudi Capital Market Authority should reinforce governance codes by promoting gender inclusivity and ensuring that board and committee structures are aligned with firm performance objectives. Third, investors are encouraged to assess banks' corporate governance practices—including the composition and effectiveness of ACs—before making investment decisions, as these mechanisms have a direct impact on financial outcomes. Moreover, there is a need for deeper investigation into the contextual factors that affect the efficacy of board structures and diversity. This study opens avenues for comparative cross-country research, sectoral analyses, and the exploration of other moderating or mediating variables such as organizational culture or institutional quality. Researchers are encouraged to adopt multi-theoretical approaches to better capture the complexity of governance-performance linkages.

This study had several constraints that should be the concern of future research. First, the sample size was limited to ten banks listed in Saudi Arabia. Future studies could include listed firms from other sectors to gain a comprehensive understanding of the effects of corporate governance on F_PER. Second, this study considers only one corporate governance mechanism; future studies can investigate the effects of other corporate governance mechanisms such as board characteristics, CEO duality, managerial ownership, and institutional ownership. Finally, future studies could also consider the mediating and moderating roles of certain variables in the linkage between corporate governance and F_PER.

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References

Aanu, O., Odianonsen, I. and Foyeke, O. (2014). Effectiveness of Audit Committee and Firm Financial Performance in Nigeria: An Empirical Analysis. *Journal of Accounting and Auditing: Research & Practice*, IBIMA Publishing, 1–12. https://doi.org/10.5171/2014.301176.

Abdalla, A. A. A., Alodat, A. Y., Salleh, Z., & Al-Ahdal, W. M. (2025). The effect of audit committee effectiveness, internal audit size and outsourcing on greenhouse gas emissions disclosure. International Journal of Disclosure and Governance, 1–16. https://doi.org/10.1057/S41310-025-00297-0

Abdullah Hariem and Tursoy Turgut. (2023). The Effect of Corporate Governance on Financial Performance: Evidence From a Shareholder-Oriented System. *Interdisciplinary Journal of Management Studies (Formerly Known as Iranian Journal of Management Studies)*, 16 (1), 79–95.

Abdullah, S.N., I Ku Ismail, K.N. and Nachum, L. (2016). Does Having Women on Boards Create Value? The Impact of Societal Perceptions and Corporate Governance in Emerging Markets. *Strategic Management Journal*, 37 (3), 466–476. https://doi.org/10.1002/smj.2352.

Afza, T. and Nazir, M.S. (2014). Audit quality and firm value: A case of Pakistan. *Research Journal of Applied Sciences, Engineering and Technology*, Maxwell Science Publications, 7 (9), 1803–1810. https://doi.org/10.19026/rjaset.7.465.

Aggarwal, P. (2013). Impact of Corporate Governance on Corporate Financial Performance. *IOSR Journal of Business and Management*, 13, 1-5. https://doi.org/10.9790/487X-1330105.

Ahern Kenneth R. and Dittma Amy K. (2012). The changing of the boards: the impact on firm valuation of mandated female board representation. *The Quarterly Journal of Economics*, 127 (1), 137–197. https://doi.org/10.1093/qje/qjr049.

Ahmed, M.M.A., Hassan, D.K.A.E.S.A. and Magar, N.H.A. (2024). The moderating role of board gender diversity on the relationship between audit committee characteristics and financial performance: evidence from Egypt. *Journal of Financial Reporting and Accounting*, Emerald Publishing. https://doi.org/10.1108/JFRA-12-2023-0746.

Al-ahdal, W.M., Alsamhi, M.H., Tabash, M.I. and Farhan, N.H.S. (2020). The impact of corporate governance on financial performance of Indian and GCC listed firms: An empirical investigation. *Research in International Business and Finance*, Elsevier Ltd, 51. https://doi.org/10.1016/j.ribaf.2019.101083.

Al-ahdal, W.M. and Hashim, H.A. (2022). Impact of audit committee characteristics and external audit quality on firm performance: evidence from India. *Corporate Governance (Bingley)*, Emerald Group Holdings Ltd., 22 (2), 424–445. https://doi.org/10.1108/CG-09-2020-0420.

Aldamen, H., Duncan, K., Kelly, S., Mcnamara, R. and Nagel, S. (2012). Audit committee characteristics and firm performance during the global financial crisis. *Accounting and Finance*, 52 (4, 971–1000. https://doi.org/10.1111/j.1467-629X.2011.00447.x.

Al-Faryan, M.A.S. (2020). Corporate governance in Saudi Arabia: An overview of its evolution and recent trends. *Risk Governance and Control: Financial Markets and Institutions*, Virtus Interpress, 10 (1), 23–36. https://doi.org/10.22495/rgcv10i1p2.

Ali Al-Matari, Y., Kaid Al-Swidi, A., Hanim Bt Fadzil, F. and Mohammed Al-Matari, E. (2012). Board of Directors, Audit Committee Characteristics and Performance of Saudi Arabia Listed Companies. *International Review of Management and Marketing*, 2 (4), 241–251.

Ali, M., Jamal, A.H. and Ashfaq, J. (2023). Impact of Audit Committee Characteristics on Financial Performance: A Study of Listed Companies of Pakistan. *Pakistan Research Journal of Social Sciences*, 2.

Al-Jalahma, A. (2022). Impact of audit committee characteristics on firm performance: Evidence from Bahrain. *Problems and Perspectives in Management*, LLC CPC Business Perspectives, 20 (1), 247–261. https://doi.org/10.21511/ppm.20(1).2022.21.

Al-Janadi, Y., Abdul Rahman, R. and Alazzani, A. (2016). Does government ownership affect corporate governance and corporate disclosure?: Evidence from Saudi Arabia. *Managerial Auditing Journal*, Emerald Group Publishing Ltd., 31 (8–9), 871–890. https://doi.org/10.1108/MAJ-12-2015-1287.

Aljifri, K. and Moustafa, M. (2007). The Impact of Corporate Governance Mechanisms on the Performance of UAE Firms: An Empirical Analysis. *Journal of Economic and Administrative Sciences*, Emerald, 23 (2), 71–93. https://doi.org/10.1108/10264116200700008.

Al-Matari, E.M., Al-Swidi, A.K. and Fadzil, F.H.B. (2014). Audit committee characteristics and executive committee characteristics and firm performance in Oman: Empirical study. *Asian Social Science*, Canadian Center of Science and Education, 10 (12), 98–113. https://doi.org/10.5539/ass.v10n12p98.

Al-Okaily, J. and Naueihed, S. (2020). Audit committee effectiveness and family firms: impact on performance. *Management Decision*, Emerald Group Holdings Ltd., 58 (6), 1021–1034. https://doi.org/10.1108/MD-04-2018-0422.

Alqatamin, R.M. (2018). Audit Committee Effectiveness and Company Performance: Evidence from Jordan. *Accounting and Finance Research*, Sciedu Press, 7 (2), 48. https://doi.org/10.5430/afr.v7n2p48.

Amin, A., Ali, R., Rehman, R. ur, & Hasan, M. (2024). Family ownership, control, and firm performance: Does gender diversity matter? Eurasian Business Review, 14(2), 501–525. https://doi.org/10.1007/S40821-024-00256-9/TABLES/9

Assenga, M.P., Aly, D. and Hussainey, K. (2018). The impact of board characteristics on the financial performance of Tanzanian firms. *Corporate Governance (Bingley)*, Emerald Group Holdings Ltd., 18 (6), 1089–1106. https://doi.org/10.1108/CG-09-2016-0174.

Bansal, N. and Sharma, A.K. (2016). Audit Committee, Corporate Governance and Firm Performance: Empirical Evidence from India. *International Journal of Economics and Finance*, Canadian Center of Science and Education, 8 (3), 103. https://doi.org/10.5539/ijef.v8n3p103.

Baranchuk, N. and Dybvig, P.H. (2009). Consensus in diverse corporate boards. *Review of Financial Studies*, 22 (2), 715–747. https://doi.org/10.1093/rfs/hhn052.

Ben Barka, H. and Legendre, F. (2017). Effect of the board of directors and the audit committee on firm performance: a panel data analysis. *Journal of Management and Governance*, Springer New York LLC, 21 (3), 737–755. https://doi.org/10.1007/s10997-016-9356-2.

Bii, P.K. and Kinuthia, P.M. (2024). Effects of Audit Committee on Fraudulent Financial Reporting Among Listed Firms in Kenya. *Journal of Economics, Finance and Management Studies*, 7 (4). https://doi.org/10.47191/jefms/v7-i4-03.

Boshnak, H.A., Alsharif, M. and Alharthi, M. (2023). Corporate governance mechanisms and firm performance in Saudi Arabia before and during the COVID-19 outbreak. *Cogent Business and Management*, Cogent OA, 10 (1). https://doi.org/10.1080/23311975.2023.2195990.

Buallay, A. and Al-Ajmi, J. (2020). The role of audit committee attributes in corporate sustainability reporting: Evidence from banks in the Gulf Cooperation Council. *Journal of Applied Accounting Research*, Emerald Group Holdings Ltd., 21 (2), 249–264. https://doi.org/10.1108/JAAR-06-2018-0085.

Buallay, A., Hamdan, A. and Zureigat, Q. (2017). Corporate Governance and Firm Performance: Evidence from Saudi Arabia. *Australasian Accounting, Business and Finance Journal*, 11 (1), 78–98. https://doi.org/http://dx.doi.org/10.14453/aabfj.v11i1.6.

Bui, H., & Krajcsák, Z. (2024). The impacts of corporate governance on firms' performance: from theories and approaches to empirical findings. Journal of Financial Regulation and Compliance, 32(1), 18–46. https://doi.org/10.1108/JFRC-01-2023-0012/FULL/PDF

Ciftci, I., Tatoglu, E., Wood, G., Demirbag, M. and Zaim, S. (2019). Corporate governance and firm performance in emerging markets: Evidence from Turkey. *International Business Review*, Elsevier Ltd, 28 (1), 90–103. https://doi.org/10.1016/j.ibusrev.2018.08.004.

Dohrmann, M., Martinez-Blasco, M., Moring, A., & Margarit, J. C. (2024). Environmental performance and firm performance in Europe: The moderating role of board governance. Corporate Social Responsibility and Environmental Management, 31(6), 5863–5880. https://doi.org/10.1002/CSR.2898

Donaldson, L. (1990). The Ethereal Hand: Organizational Economics and Management Theory. Academy of Management Review, 15(3). https://doi.org/10.5465/amr.1990.4308806

Farouk, M.A. and Hassan, S.U. (2014). Impact of Audit Quality and Financial Performance of Quoted Cement Firms in Nigeria. *International Journal of Accounting and Taxation*, 2 (2), 1–22.

Francoeur, C., Labelle, R. and Sinclair-Desgagné, B. (2008). Gender diversity in corporate governance and top management. *Journal of Business Ethics*, 81 (1), 83–95. https://doi.org/10.1007/s10551-007-9482-5.

Fuzi, S.F.S., Halim, S.A.A. and Julizaerma, M.K. (2016). Board Independence and Firm Performance. *Procedia Economics and Finance*, Elsevier BV, 37, 460–465. https://doi.org/10.1016/s2212-5671(16)30152-6.

García-Sánchez, I.M., Frias-Aceituno, J. V. and Garcia-Rubio, R. (2012). Determining Factors of Audit Committee Attributes: Evidence from Spain. *International Journal of Auditing*, 16 (2), 184–213. https://doi.org/10.1111/j.1099-1123.2012.00451.x.

Gavana, G., Gottardo, P., & Moisello, A. M. (2024). The effect of board diversity and tenure on environmental performance. Evidence from family and non-family firms. Journal of Family Business Management, 14(3). https://doi.org/10.1108/JFBM-06-2023-0088

Hamoudah, M. M., Banhmeid, B., Alahdal, W. M., & Sahu, M. (2024). Corporate governance and emission performance: Malaysian evidence on the moderating role of environmental innovation. Discover Sustainability, 5(1), 1–26. https://doi.org/10.1007/S43621-024-00768-4

Haniffa, R. and Hudaib, M. (2006). Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance and Accounting*, 33 (7–8), 1034–1062. https://doi.org/10.1111/j.1468-5957.2006.00594.x.

Hassan Bazhair, A. (2022). Audit committee attributes and financial performance of Saudi non-financial listed firms. *Cogent Economics and Finance*, Cogent OA, 10 (1). https://doi.org/10.1080/23322039.2022.2127238.

Hoque, M.Z., Islam, M.R. and Azam, M.N. (2013). Board Committee Meetings and Firm Financial Performance: An Investigation of Australian Companies. *International Review of Finance*, 13 (4), 503–528. https://doi.org/10.1111/irfi.12009.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Koji, K., Adhikary, B.K. and Tram, L. (2020). Corporate Governance and Firm Performance: A Comparative Analysis between Listed Family and Non-Family Firms in Japan. *Journal of Risk and Financial Management*, 13 (9). https://doi.org/10.3390/jrfm13090215.

Kyere, M. and Ausloos, M. (2021). Corporate governance and firms financial performance in the United Kingdom. *International Journal of Finance and Economics*, John Wiley and Sons Ltd, 26 (2), 1871–1885. https://doi.org/10.1002/ijfe.1883.

Kyereboah-Coleman, A. (2008). Corporate governance and firm performance in Africa: A dynamic panel data analysis. *Journal for Studies in Economics and Econometrics*, 32 (2), 1–24. https://doi.org/10.1080/10800379.2008.12106447.

Lin, J.W., Li, J.F. and Yang, J.S. (2006). The effect of audit committee performance on earnings quality. *Managerial Auditing Journal*, 21 (9), 921–933. https://doi.org/10.1108/02686900610705019.

Mahadeo, J.D., Soobaroyen, T. and Hanuman, V.O. (2012). Board Composition and Financial Performance: Uncovering the Effects of Diversity in an Emerging Economy. *Journal of Business Ethics*, 105 (3), 375–388. https://doi.org/10.1007/s10551-011-0973-z.

Marimuthu, M. (2009), *Ethnic and Gender Diversity in Boards of Directors and Their Relevance to Financial Performance of Malaysian Companies*.

Miglani, S. and Ahmed, K. (2019). Gender diversity on audit committees and its impact on audit fees: evidence from India. *Accounting Research Journal*, Emerald Group Publishing Ltd., 32 (4), 568–586. https://doi.org/10.1108/ARJ-01-2018-0001.

Natto, D., & Mokoaleli-Mokoteli, T. (2025). Short- and long-term impact of governance on firm performance in emerging and developed economies: a comparative analysis. *International Journal of Disclosure and Governance*, 1–18. https://doi.org/10.1057/S41310-024-00271-2/TABLES/9

Naushad, M. and Malik, S.A. (2015). Corporate governance and bank performance: A study of selected banks in GCC region. *Asian Social Science*, Canadian Center of Science and Education, 11 (9), 226–234. https://doi.org/10.5539/ass.v11n9p226.

Naz, M. A., Ali, R., Rehman, R. U., & Ntim, C. G. (2022). Corporate governance, working capital management, and firm performance: Some new insights from agency theory. *Managerial and Decision Economics*, *43*(5), 1448–1461. https://doi.org/10.1002/MDE.3466

Okoye, L., Olokoyo, F., Okoh, J., Ezeji, F. and Uzohue, R. (2020). Effect of corporate governance on the financial performance of commercial banks in Nigeria. *Banks and Bank Systems*, LLC CPC Business Perspectives, 15 (3), 55–69. https://doi.org/10.21511/bbs.15(3).2020.06.

Olayiwola, K.T. (2018). The effect of corporate governance on financial performance of listed companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, 6 (9), 85–98.

Pillai, R. and Al-Malkawi, H.A.N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance*, Elsevier Ltd, 44, 394–410. https://doi.org/10.1016/j.ribaf.2017.07.110.

Rahman, M.M., Meah, M.R. and Chaudhory, N.U. (2019). The impact of audit characteristics on firm performance: An empirical study from an emerging economy. *Journal of Asian Finance, Economics and Business*, Korea Distribution Science Association (KODISA), 6 (1), 59–69. https://doi.org/10.13106/jafeb.2019.vol6.no1.59.

Raimo, N., Vitolla, F., Marrone, A. and Rubino, M. (2021). Do audit committee attributes influence integrated reporting quality? An agency theory viewpoint. *Business Strategy and the Environment*, John Wiley and Sons Ltd, 30 (1), 522–534. https://doi.org/10.1002/bse.2635.

Sahu, M., Alahdal, W. M., Pandey, D. K., Baatwah, S. R., & Bajaher, M. S. (2025). Board gender diversity and firm performance: Unveiling the ESG effect. Sustainable Futures, 9, 100493. https://doi.org/10.1016/J.SFTR.2025.100493

Sahu, M., & Mishra, A. (2023). Impact of Country-level Environmental, Social and Governance Pillars on Sustainable Development Goals: Evidence from G20 Countries. International Journal of Accounting, Business and Finance, 3(1), 15–29. https://doi.org/10.55429/IJABF.V3I1.126

Sahu, M., Prusty, T., Alahdal, W. M., Ariff, M.A., Almaqtari, F.A., & Hashim, A. (2024). The role of education in moderating the impact of development on environmental sustainability in OECD countries. Discover Sustainability 2024 5:1, 5(1), 1–24. https://doi.org/10.1007/S43621-024-00450-9

Safari Gerayli, M., Rezaei Pitenoei, Y. and Abdollahi, A. (2021). Do audit committee characteristics improve financial reporting quality in emerging markets? Evidence from Iran. *Asian Review of Accounting*, Emerald Group Holdings Ltd., 29 (2), 251–267. https://doi.org/10.1108/ARA-10-2020-0155.

Saidat, Z., Silva, M. and Seaman, C. (2019). The relationship between corporate governance and financial performance: Evidence from Jordanian family and nonfamily firms. *Journal of Family Business Management*, Emerald Group Holdings Ltd., 9 (1), 54–78. https://doi.org/10.1108/JFBM-11-2017-0036.

Salleh, Z., Seno, R., Alodat, A.Y.M. and Hashim, H.A. (2022). Does the audit committee effectiveness influence the reporting practice of ghg emissions in malaysia?. *Journal of Sustainability Science and Management*, Universiti Malaysia Terengganu, 17 (1), 204–220. https://doi.org/10.46754/jssm.2022.01.014.

Sami, W. and Khaled, A. (2021). Corporate Governance Mechanisms in Saudi Arabia: The Case of Family Ownership with Audit Committee Activity*. *Journal of Asian Finance*, 8 (5), 151–0156. https://doi.org/10.13106/jafeb.2021.vol8.no5.0151.

Gender Justice & The Law Kingdom of Saudi Arabia (2019). Available at https://arabstates.unfpa.org/en/publications/gender-justice-law-saudi-arabia

Sianipar, R.H. and Wiksuana, I.G.B. (2019). The study of effect of good corporate governance on financial performance. *Russian Journal of Agricultural and Socio-Economic Sciences*, Russian Journal of Agricultural and Socio-Economic Sciences, 86 (2), 166–170. https://doi.org/10.18551/rjoas.2019-02.19.

Terjesen, S., Couto, E.B. and Francisco, P.M. (2016). Does the presence of independent and female directors impact firm performance? A multi-country study of board diversity. *Journal of Management and Governance*, Springer New York LLC, 20 (3), 447–483. https://doi.org/10.1007/s10997-014-9307-8.

Tulung, J.E. and Ramdani, D. (2018). Independence, size and performance of the board: An emerging market research. *Corporate Ownership and Control*, Virtus Interpress, 15 (2–1), 201–208. https://doi.org/10.22495/cocv15i2c1p6.

van Puyvelde, S., Caers, R., du Bois, C., & Jegers, M. (2012). The Governance of Nonprofit Organizations: Integrating Agency Theory With Stakeholder and Stewardship Theories. Nonprofit and Voluntary Sector Quarterly, 41(3). https://doi.org/10.1177/0899764011409757

Vision 2030 Kingdom of Saudi Arabia (2024). *Alarabiya News*, 1 May.

World Bank Group (2020). *Saudi Arabia*.

Xie, B., Davidson Iii, W.N. and Dadalt, P.J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance* , 9, 295–316.

Zabri, S.M., Ahmad, K. and Wah, K.K. (2016). Corporate Governance Practices and Firm Performance: Evidence from Top 100 Public Listed Companies in Malaysia. *Procedia Economics and Finance*, Elsevier BV, 35, 287–296. https://doi.org/10.1016/s2212-5671(16)00036-8.

Zaman, R., Arslan, M. and Siddiqui, M.A. (2015). Corporate Governance and Firm Performance: The Role of Transparency & Disclosure in Banking Sector of Pakistan. *International Letters of Social and Humanistic Sciences*, 2 (2), 152–166.

Zaman, R., Farooq, M.B., Khalid, F. and Mahmood, Z. (2021). Examining the extent of and determinants for sustainability assurance quality: The role of audit committees. *Business Strategy and the Environment*, John Wiley and Sons Ltd, 30 (7), 2887–2906. https://doi.org/10.1002/bse.2777.

Zhou, H., Owusu-Ansah, S. and Maggina, A. (2018). Board of directors, audit committee, and firm performance: Evidence from Greece. *Journal of International Accounting, Auditing and Taxation*, Elsevier Ltd, 31, 20–36. https://doi.org/10.1016/j.intaccaudtax.2018.03.002.