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Leadership Structures and Financial Sector Performance: Evidence on Corporate Leadership and Supervisory Committees in the Gulf Region

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ABSTRACT

The expansion of the Saudi economy depends on the financial markets. This study examines the relationship between corporate governance and the performance of financial institutions listed on the Saudi Stock Exchange from 2013 to 2022 using Tobin's Q framework and a social science lens. The approach used in the study incorporates aggregated data from ten financial institutions and eleven insurance companies. Structural Equation Modelling (SEM) is advised for evaluating how corporate governance attributes influence the performance of Saudi financial institutions. Financial institution performance, the dependent variable, is assessed using the return on assets (ROA) and Tobin's Q. Meanwhile, corporate governance factors serve as independent variables, encompassing various board and audit committee characteristics, as well as the financial institution's size (Bank-Insurer). The results, derived through structural equation modelling (SEM), show that governance attributes significantly shape outcomes. Notably, board size, director independence, and audit committee structure are associated with adverse effects, whereas institutional size acts as a positive driver of performance in the Saudi financial sector.

Keywords: Corporate governance, ROA, Saudi financial markets, structural equation modelling (SEM), Tobin's Q

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INTRODUCTION

History has experienced banking and financial misgovernance for many centuries ("List of corporate collapses and scandals," 2024). Few of the central global banking and financial scandals gave rise to the insolvency or bankruptcy of large banking firms (on the year of occurrence, latest first) First Republic Bank, Signature Bank,

SVB, Banco Espírito Santo (BES), Anglo Irish Bank, Bank-west, ABN-Amro, RBS, Washington Mutual, AIG, Lehman Brothers, IndyMac, Northern Rock, Bear Stearns, Barings Bank, Nordbanken, Herstatt Bank, Danatbank, Medici Bank ("List of corporate collapses and scandals," 2024). The case of mis-governance, corporate failure, and insolvency is also extreme in the insurance and financial services industry (FTX, Wirecard, Bernard L. Madoff Investment Securities, Refco, Bayou Hedge Fund Group, HIH Insurance, Equitable Life Assurance Society, and Long-Term Capital Management are a few notable examples). Studying how governance affects financial institutions' performance in the dynamic and developing global economy was spurred by the aforementioned significant financial sector crises.

Scholars have regularly demonstrated that an organisation's financial success is positively impacted by competent governance (Afriyie et al., 2019; Al-Matari, 2020; Choi et al., 2021; Kapil & Mishra, 2019; Kiel & Nicholson, 2003; Pucheta & Gallego, 2020; Reguera & Bravo, 2017). Most of the previous literature excluded the banking and insurance industries due to their complex structure and governance mechanisms (Agyemang-Mintah & Schadewitz, 2018; Al-Okaily & Naueihed, 2020; Palaniappan, 2017). This study aims to close this gap by concentrating on Saudi Arabia's financial services sector.

From the standpoint of investors, who anticipate that firms would employ robust governance procedures to safeguard their holdings, corporate governance is similarly important (Al-Sager & Samontaray, 2018). The financial services sector has been left out of most Saudi Arabian research that focus on the connection between board makeup and business success. Only a small number of research have explicitly examined the link in the banking or insurance industries. Experiencing repeated failures in the governance of financial institutions underscore the critical importance of effective oversight structures, especially in banking (Al-Sagr et al., 2018). Empirical research in Saudi Arabia shows that board characteristics, such as size, meeting frequency, and committee independence significantly influence bank performance (Almoneef & Samontaray, 2019). For example, audit committee independence is positively associated with return on assets (ROA), return on equity (ROE), and Tobin's Q in Saudi banks (Habtoor, 2022). Therefore, this study examines how board-level and committee-level leadership features in Saudi financial institutions affect performance, addressing a gap in prior governance research.

This study is based on the previous popular corporate governance theories explaining how the board and audit committees attributes impact the firm performance (Hermalin & Weisbach, 2003; Shleifer & Vishny, 1997), where the operations are complex and industries are highly regulated. Focusing on board characteristics (size and independence), along with the functions of audit committees, this study examines how these governance

mechanisms shape performances of Saudi financial institutions (both banking and insurance industry taken together. Understanding these relationships provides clearer insight into how leadership structures influence performance within the Gulf's financial sector.

Therefore, the purpose of this study is to investigate the effects of board composition on company performance in Saudi Arabia's different industries, using data from 2013 to 2022. The purpose of this study is to ascertain whether corporate governance characteristics, such as board size and independence, and committee-level oversight features, such as committee size and independence, have an impact on the performance of financial institutions by taking into account the banking and insurance sectors of the economy as a whole (Saudi Financial Market). We employed a simultaneous equation model (SEM) to avoid the endogeneity issues reported in the OLS equation (Gregory, 2021; Hermalin & Weisbach, 2003; Rashid, 2018). This research aims to enhance the current understanding by linking board and committee attributes of Saudi financial institutions (encompassing both banking and insurance industries) to their financial performance. In the banking or insurance sectors of the Saudi financial services sector, researchers have found links between corporate governance mechanisms (board and committee-level attributes) and firm performance (explained in the section on the review of literature below). In order to examine how board and committee characteristics affect the financial performance of the Saudi banking and insurance industry, this study is unusual in that it combines aspects from both the banking and insurance sectors. The second section of this paper presents a comprehensive literature review and hypothesis development. The third section outlines the research methodology and variable explanation, and the subsequent sections provide discussions, analysis, conclusions, and scope for further research.

The leadership structures and supervisory committees of the corporations situated in Gulf regions, draw a special attention because of the differences in the ownership structure, governance parameters, regulatory roles and frameworks and cultural norms. In GCC banks, board independence can moderate performance but is also influenced by bank size (Almubarak & Aljughaiman, 2024; Habtoor, 2022). These Gulf Cooperation Council (GCC) regional dynamics suggest that a study of the impact of committee design and board composition on the firm performance in ways distinct from Western systems.

Research Questions

This study addresses four main research questions, as follows:

Q1. Does Saudi Arabian Financial Institutions' Performance get affected by corporate governance?

Q2. How do board size and the proportion of independent directors impact Saudi financial institutions' performance?

Q3. How does committee size and the proportion of independent members within the oversight committee impact Saudi financial institutions' performance?

Q4. How does the size of Saudi financial institutions impact their performance?

Review of Literature

Board Size and Independence

The authors, Pucheta and Gallego (2020) discovered that the company's performance was impacted by the number of female directors on the board, CEO duality, board independence, and board size. However, they were unable to identify any relationship between performance and compensation on a worldwide sample that included 34 countries. Performance is measured using Tobin's Q and return on equity (ROE). The authors have eliminated financial institutions from this analysis. In another study in Australia a positive association of compensation and performance had been noticed (Kiel and Nicholson, 2003). Osman and Samontaray (2022) emphasise that corporate governance elements significantly shape the performance of insurance firms in Saudi Arabia. They found that the performance of the enterprises was positively impacted by independent boards and larger boards. Similar studies were carried out in Saudi Arabia by Al-Sahafi et al. (2015), who found a substantial positive correlation between board size and independence and performance. Performance has been evaluated using TQ, return on equity, and return on assets. Size has a favorable and considerable impact on the company's profitability as measured by return on assets, but it has an unexpectedly negative and strong link with stock returns, according to related research (Fariha et al., 2022).

Kapil and Mishra (2019) further reported that board size and independence contribute positively to firm success, while Al-Matari (2020), examining Omani financial institutions, confirmed that diverse experiences and independence among board members strengthened performance, though excessive board meetings had an adverse effect. Extending this line of work, Tanwer and Garg (2023) found governance variables such as attendance, independence, and female participation to be particularly relevant in non-state-owned enterprises, while largely insignificant in state-owned firms. Evidence from Saudi banks also aligns with these results: Almoneef and Samontaray (2019) showed that larger boards tend to improve both ROA and ROE, whereas Al-Faryan (2021) emphasized the value-adding effect of independence.

Despite this general support, a number of studies present contrasting outcomes. For instance, acording to Rahman (2024) and Al-Absy and Hasan (2023), board composition has little to no impact on performance in the financial sectors of Bangladesh and Saudi Arabia, respectively. Boshnak et al. (2023) went further, suggesting that overly large boards and too much independence may reduce firm value, while stressing the importance of directors' experience,

education, and diversity. Similar evidence is found in India, where Mishra (2020) identified a negative relationship between independence and firm performance, and in Kuwait, where Al-Matari et al. (2012) noted that governance attributes mattered little outside the banking sector. Cheng (2008) also associated larger boards with greater variability in stock returns and weaker financial performance. Following prior worries expressed by Palaniappan (2017) and Shao (2010), Al-Matari (2022) more recently found a substantial negative correlation between board size and business results in Saudi finance.

Taken together, these findings reveal a lack of consensus: while some scholars support the positive role of board independence and size, others caution against excessive board expansion or overreliance on independence. This conflicting evidence motivates the following hypotheses:

H1. Board size has no significant impact on the financial performance of Saudi financial institutions.

H2. The proportion of independent directors on the board has no significant impact on the financial performance of Saudi financial institutions.

Audit Committee Size, AC Independence, and Firm Performance

In a positive study, Agyemang-Mintah and Schadewitz (2018) examined if the creation of an audit committee by financial institutions has a statistically meaningful impact on company performance. According to a recent study by Altin (2024), the firm's performance is significantly improved by the audit committee's size, independence, experience, and affiliation with the Big 4. A comparable research by Al-Okaily and Naueihed (2020) found that audit committee characteristics (size, meeting frequency, and competence) were not significantly correlated with family firm performance, but they did have a positive, significant correlation with non-family firm performance. According to Al-Matari et al. (2012), there is a substantial positive correlation between the size of the audit committee and corporate performance. The performance of Saudi Arabian banks and the independence of their audit committees were shown to be strongly positively correlated in a recent study by Al-Matari (2022). Al-Sahafi et al. (2015) conducted another intriguing study that shows no correlation between the financial performance of the Saudi banking industry and the size or independence of the audit committee.

However, Fariha et al. (2022) found a substantial negative correlation between the size of the audit committee and business performance (Tobin's Q). They also looked at the audit committee chairman's independence, which is highly inversely correlated with the firm's success as shown by Tobin's Q and stock returns. According to a recent study by Osman and Samontaray (2022), firm performance suffered when audit committee independence was present. The researchers also expected a statistically significant negative correlation between business performance and the audit committee chairperson's independence

(Tobin's Q) (Fariha et al. 2022). Reviewing the relevant literature, the following hypotheses are proposed:

H3. The impact of the audit has no discernible effect on Saudi financial organisations' financial performance.

H4. There is no significant impact of the percentage of the number of independent members in the Audit Committee on the financial performance of Saudi Financial institutions.

Firm Size and Firm Performance

Many researchers have established a positive and significant relationship between firm size and firm performance in their studies (Pucheta & Gallego, 2020; Palaniappan, 2017; Fariha et al., 2022). In a few other studies conducted (Rashid, 2018; Shao, 2010), a mixed response was observed, albeit with a statistically insignificant effect on performance.

H5. The scale of Saudi financial institutions has a major beneficial effect on how well such institutions perform.

Firm Performance through ROA and Tobin's Q

In effect, ROA and Tobin's Q have a crucial importance in firm performance, because they result in a more comprehensive view by combining an accounting-based measure (ROA) with a market-based measure (Tobin's Q). ROA is considered a backward-looking measure and an indicator for efficient financial institutions for using their assets to generate earnings, while Tobin's Q is considered a forward-looking metric that indicates the market's valuation of the firm's growth opportunities. So, altogether they depict a fuller picture to success of the financial institutions. Consequently, many authors have employed both ROA and Tobin's Q for measuring firm performance using the structural-equation modelling (SEM) method (Ajibola, 2025; Issa & Abbaszadeh, 2023; Valencia, 2025). As well, other authors used ROA and Tobin's Q to measure the firm size and firm performance using regression analysis (Almoneef & Samontaray, 2019; Bhagata & Boltonb, 2019; Osman & Samontaray, 2022).

METHODOLOGY

Financial Institutions and the Study Sample

Saudi Financial institutions consists of twelve Saudi banks and twenty-four insurance companies after mergers and acquisitions (except the reinsurer and Health insurance companies). The study sample consists of 11 insurance companies (random sampling representing 45.8 % of Saudi insurance companies) and 10 Banks (representing 83% of Saudi banks).

The Saudi Stock Exchange database (TADAWUL) provided the data for the aforementioned sample banks and insurance providers between 2013 and 2022. Throughout the research time frame, none of the sampled insurers or banks ceased operations or underwent mergers with other

entities. Our dataset incorporates pooled data combined with both time series and cross-sectional aspects. It comprises 210 observations spanning 21 firms over 10 years' timeframe, calculated based on firm-years.

Measurement of Variables

Financial Performance of Financial Institutions (Insurer or Bank)

The three main metrics used by Yip & Pang (2023) to evaluate a company's success are Tobin's Q, return on equity (ROE), and return on assets (ROA). Additionally, Tobin's Q ratio was computed by Almoneef & Samontaray (2019) and Purushottam (2019) by dividing the total market capitalization by the whole asset value. Additionally, return on assets, or ROA, is the ratio of net income (before taxes and zakat) to total assets.

Corporate Governance

Corporate governance is the study's independent variable, and it is assessed using a number of variables that the researchers have identified. Board size (Bsize), board independence (NindBsiz), and board meeting frequency (NmeetBsiz), which indicates the number of board meetings held annually, are three important board-related parameters. But the next three for the audit committee are audit size (AuditSiz), audit committee independence (Pind Audit), and audit committee meeting count (NmeetAudit). Additionally, three control variables were included by the researchers. They are firm age (Fage), foreign board membership (FB), and company size (Sizcomp). An overview of these variables is provided in Table 1.

Table 1
Explanation of the variables taken for the study

Labels	Variables	Predicted sign	Definition	Measurements
Dependent variables				
ROA			Return on Assets	The ratio of net income before tax and zakat divided by total assets
Tobin's Q			A measure of the market value of a company	Total market capitalization divided by the total asset value of the firm
Independent variables				
Bsize	Board size	Confirm the Question Mark	The board of directors	Number of directors on the board
NindepBoad	Board independence	?	Independent directors on the board	Number of independent directors on the board
Audit size	Audit Committee	?	Audit Committee	The number of audit committee members
Pind Audit	Audit committeemen	?	Independent members	The percentage of independent directors in the audit committee
SizeofComp	Company size	?	Size of Firm	Total assets of a financial institution

Source: Generated by the authors

The researchers employed Structural Equation Modeling (SEM) to analyze the interplay between the selected variables and control factors, conducting nine iterative trials. Their analysis revealed that two board-related indicators and two audit committee variables showed statistically significant relationships, collectively influencing the financial performance of financial institutions operating in Saudi Arabia. The single control variable that significantly improves the performance of Saudi financial institutions is the size of the firm (Sizcomp).

The researchers came to the conclusion that the dependent and independent variables shown in Figure 1 were the result of nine experiments. These variables present a conceptual framework for the relationships between the significant variables that test the research hypotheses.

Model Specification and Its Estimation

Before using Structural Equation Modeling (SEM), the researchers conducted an extensive literature review and then tried to specify the model determining every relationship among variables relevant to the researchers' interest. Figure 2 presents the Model Specification and its estimation.

The Structural Equation Model (SEM)

Many authors have exercised the structural-equation modeling (SEM) method in corporate governance and financial performance of the firms. For example, Valencia (2025), Issa and Abbaszadeh (2023) and Aoudane et al. (2025). As well, Structural equation modeling (SEM) has been used in multiple studies published in top referred (WoS & Scopus) journals to analyze complex relationships between variables in fields like social sciences, management, and marketing. For example: Eluwa and Siong (2015); Shaidan et al. (2025); Setiowati & Liem (2018); and Yudiana et al. (2021). Hence, SEM was used because it may successfully mitigate endogeneity issues that commonly occur in conventional least squares regression by establishing causal relationships between latent and observed variables (Gregory,

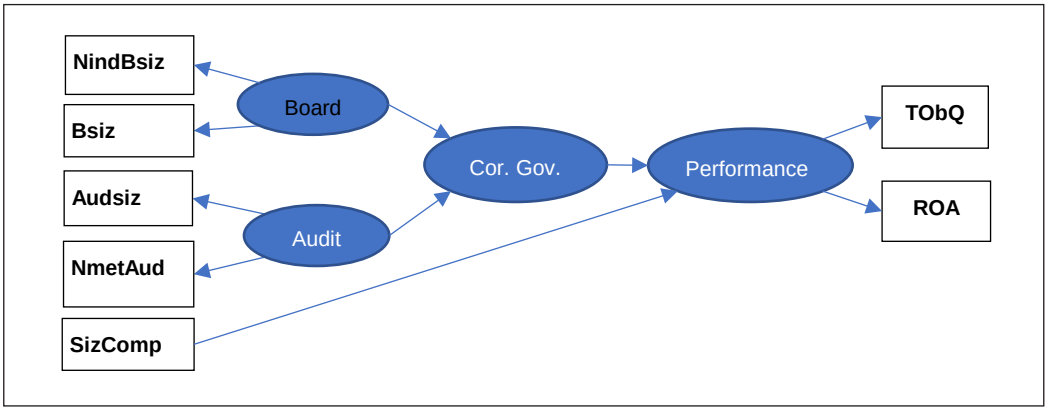

Figure 1. Conceptual framework for the relationships between the variables

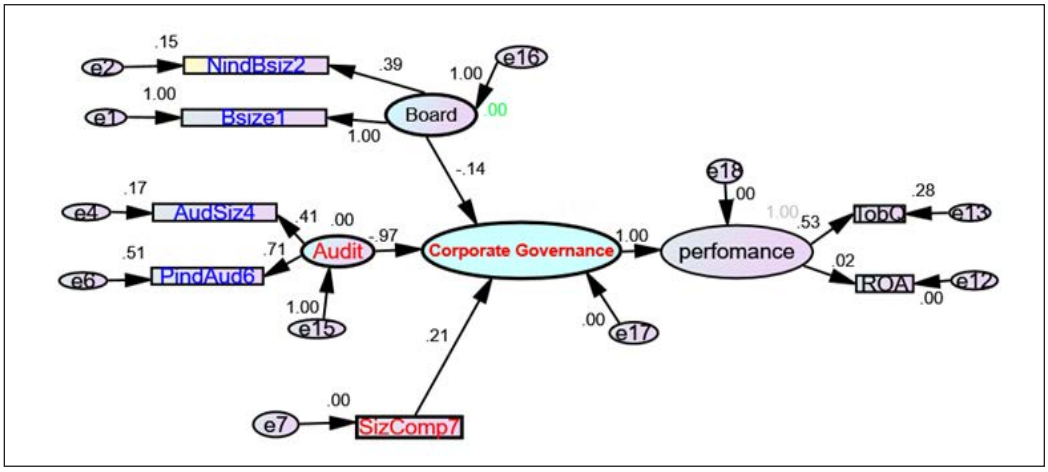

Figure 2. Measurement and structural model
Source: The significant results that were conducted by the authors using SEM

2021; Hermalin & Weisbach, 2003; Rashid, 2018). SEM has been the primary tool used to analyze the study hypotheses, which focus on assessing how corporate governance affects the performance of financial institutions in Saudi Arabia (Ramlall, 2017).

The exogenous variables (Latent variables). The connection between endogenous variables and latent variables is commonly referred to as an unobserved, intangible variable, or simply a construct. Conversely, observed variables are categorised as tangible or known variables. The variances and covariances of endogenous variables, or observed variables, are characterized in this paradigm as functions of exogenous variables, which have the mathematical representations in [1].

The causal parameters in the matrix are denoted by α's and β's, each accompanied by their respective subscripts. The β coefficients correspond to the parameter estimates for exogenous variables, whereas α coefficients represent the measurements associated with endogenous variables. Additionally, the δ matrix, structured as n by m, contains the coefficients of β's applied to x's, while the error vector, γ, is defined as an n by 1 matrix.

In our study, the corporate governance of the Saudi financial institutions has

$$\begin{bmatrix} y_1 \\ y_2 \\ \cdot\cdot \\ \cdot\cdot \\ y_n \end{bmatrix} = \begin{bmatrix} 0 & \alpha_{12} & \cdots & \alpha_{1n} \\ \alpha_{21} & 0 & \ldots & \alpha_{2n} \\ \ldots\cdot & & \cdots & \ldots \\ & & & \\ \alpha_{n1}\alpha_{n2} & & \ldots & 0 \end{bmatrix} + \begin{bmatrix} \beta_{11} & \beta_{12} & \cdots & \beta_{1m} \\ \beta_{21} & \beta_{22} & \ldots & \beta_{2m} \\ \ldots\cdot & & \cdots & \ldots \\ & & & \\ & \beta_{n1}\beta_{n2} & \ldots & \beta_{nm} \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ \cdot\cdot \\ \cdot\cdot \\ x_m \end{bmatrix} + \begin{bmatrix} \gamma_1 \\ \gamma_2 \\ \cdot\cdot \\ \cdot\cdot \\ \gamma_n \end{bmatrix}$$

$$y = \alpha y + \delta x + \gamma \qquad [1]$$

been measured firstly by nine variables: three variables, for the board (i.e. BSIZE), (NinBsiz), and NmeetBsiz), three variables for the Audit committee (i.eAuditsize), PindAud, and NmeetAudit), and three control variables (i.e., Sizcomp, FB, and Fage). However, the significant results concluded for only two variables for the board, two variables for the Audit Committee, and one control variable, as indicated in Figure 2.

RESULTS AND DISCUSSION

Descriptive Statistics of Variables

As shown in Table 2 below, we provide the summary statistics of the important variables used in the study including both the dependent and independent variables prior to the analysis and interpretation of the results.

Table 2, which covers financial performance measurements like Return on Assets (ROA) and Tobin's Q as well as corporate governance metrics, provides a descriptive summary of the key factors the research looked at. The average board size is five members, which is consistent with earlier research by Diacon and O'Sullivan (1995) and O'Sullivan and Diacon (2003), who observed that boards frequently include less than ten directors. On average, independent directors represent 44.43% of board composition, a figure lower than the 52–56% external representation reported by Yermack (1996) and Vafeas (1999) for non-financial firms. The audit committee typically includes about 4.37 members, with 55.45% being independent directors—a relatively high proportion. Nevertheless, the predominance of executive members in these committees signals suboptimal governance practices in Saudi financial institutions. The mean institutional size is approximately 968.82 million, although this figure is skewed by several smaller entities, especially newer insurance firms under seven years old, that have incurred early-stage losses due to operational inexperience.

Data Analysis, Discussion, and Interpretation

Before conducting the Structural Equation Modelling (SEM) analysis, the researchers assessed the potential relationships between

Table 2
Descriptive statistics of variables

Variables	Minimum	Maximum	Mean	Std. Deviation
ROA	-0.09924	0.27057	0.01942	0.03064
Tobin's Q	0.04726	1.65283	0.49867	0.41040
Bsize	5.0	16.0	9.429	1.9187
NindepBoad	2.0	8.0	4.190	1.4516
Auditsize	3.0	8.0	4.371	1.2509
PindAudit	1.0	5.0	2.424	1.0965
SizofComp	45.22991	9967.96300	968.81674	1319.66159

Source: Generated by SPSS

these variables (i.e., multicollinearity) within the sample as indicated in Table 3.

Table 3 elucidates a positive relationship between board size (Bsize) and both board independence (indepBsize) and audit committee size (AudSiz). This suggests that Saudi financial institutions, including insurers and banks, with larger boards tend to exhibit greater independence and larger audit committees. As a result, larger financial institutions are expected to maintain more sizable boards.

Additionally, there is a positive link with the proportion of independent audit committee members (PinAud) but a negative correlation with audit committee size (AudSiz) and business size (Sizcomp). This implies that larger financial institutions have a higher proportion of independent members on their audit committees, whereas smaller banks often have fewer members.

Furthermore, the percentage of independent audit committee members (PindAudit) is negatively correlated with company size (SizofComp). This suggests that smaller Saudi financial institutions, such as insurers with limited assets, often have a lower percentage of independent directors on their audit committees. As a result, financial statement audits may lack accuracy, which can potentially lead to financial losses. Conversely, larger institutions, such as banks with substantial assets, tend to have a higher proportion of independent directors on their audit committees, which ensures more precise audits and contributes to increased profitability.

Table 4 shows the measures of the fitness of the SEM model and analyses of data for testing the research hypotheses (Afriyie et al., 2019; Azim, 2012). Many generations of SEM are covariance-based methods that are conducted using the Amos software for data analysis. Using the Maximum Likelihood Estimation method in Amos (Steven & Duan, 2003), we can estimate the parameters of the Model in Equation (1). In light of the assumption of convergence of the covariance matrix of observed variables with the assumed matrix produced by the Model, various fit statistics are generated, as indicated in Table

Table 3
Correlation coefficient matrix

Variables		**Bsize1**	**NindBsiz2**	**AudSiz4**	**PindAud6**	**SizComp7**
Bsize1	Pearson Correlation	1	0.194**	0.164*	-0.037	-0.100
			0.005	0.018	0.594	0.148
NindBsiz2	Pearson Correlation		1	0.119	0.048	0.020
				0.085	0.487	0.774
AudSiz4	Pearson Correlation		.	1	0.289**	-0.198**
			.		0.000	0.004
PindAud6	Pearson Correlation				1	-0.249**
						0.000
SizComp7	Pearson Correlation					1

Table 4
Measures of the fitness of SEM model

Fit Statistics	Recommended Range (*)	Structural Model
Chi-square, χ2 (CMIN)	--	25.763
Degrees of Freedom (DF)	--	13
χ2 significance	Significant (P ≤ .05)	.018
χ2 /DF	<5.0	1.982
Goodness of fit index (GFI)	>0.90	0.968
Adjusted goodness of fit index (AGFI)	>0.90	0.930
Incremental fit index (IFI)	>0.85	.880
Comparative fit index (CFI)	>0.85	0.870
Root mean square error of approximation (RMSEA)	≤0.10	.069

4, to measure the fitness of the SEM model. Then the hypotheses are tested and their significance is discussed.

Table 4 presents the evaluation of the fitness of the SEM model and elucidates the extent to which the specified model successfully reproduce the observed covariance matrix among the indicator variables. The evaluation of various fit indices, as illustrated in table 4, indicates that the model's overall fitness is satisfactory. While the model demonstrates good fit, it is prudent to assess the (χ^2) given its sensitivity to sample size. The computed χ^2/DF value of 1.982 remains below the threshold of 5.0, further supporting model adequacy. Additionally, the model exhibits a high significance level (p = .018). With the recommended cut-off for indices set at 0.90, the study reports values of 0.968 and 0.930 for GFI and AGFI, respectively. Meanwhile, IFI and CFI indices are recorded at 0.880 and 0.870, with a CFI of 0.85. Although some indices fall slightly below the ideal threshold, they remain within an acceptable range, reinforcing the model's overall suitability.

Hypothesis Testing

Table 4 demonstrates the goodness-of-fit indices using the SEM model for the variables, and Figure 2 displays its results. The standardized point estimates of the Latent variables are shown in the figures with significance at a 98.2% confidence level. As presented in Figure 2, the point estimate of -0.14 indicates a statistically significant negative association between board size and the performance of Saudi financial institutions. This finding aligns with previous research (Bhagat & Bolton, 2019; Pathan et al., 2007; Wang et al., 2007). Furthermore, larger boards are often cited as being less cohesive and more challenging to manage, which can potentially lead to a decline in performance. At the same time, studies (Boshnak et al., 2023; Cheng, 2008) demonstrated a negative relationship between board size and corporate performance variables. A similar study by Al-Matari (2022) demonstrated a significant negative relationship between board size and the corporate performance of the financial sector in Saudi Arabia.

Thus, the first null hypothesis (H1) is rejected, confirming an adverse performance relationship between board size and the Saudi financial institutions. Hence, the institutions with larger boards may experience reduced cohesion and coordination challenges, potentially leading to diminished performance.

Additionally, we observe an adverse a relationship between (Board Independence) and the Financial Performance of Saudi Financial institutions, as shown in Figure 2. This finding aligns with Hardwick et al. (2004), who observed an adverse relationship between board independence and organisational efficiency. His study suggests that greater independence may sometimes lead to less streamlined decision-making, which could potentially impact operational effectiveness.

Using data from 2003 to 2019, Mishra (2020) discovered a negative correlation between board independence and the overall performance of all listed Indian companies. According to Fariha et al. (2022), board independence and firm performance (ROA & Tobin's Q) are negatively correlated. Consequently, H2, the second null hypothesis, is disproved.

Similarly, Figure 2's point estimate of "-.97" significant at a 98.2% confidence level indicates a statistically negative relationship between the performance of Saudi financial institutions and the audit committee's size and independent members, which is in line with previous research findings (Almoneef & Samontaray, 2019; Kajola, 2008). This result is consistent with previous research that demonstrated a substantial negative correlation between the size of the audit committee and the success of the company as determined by Tobin's Q (Al-Sahafi et al., 2015; Fariha et al., 2022). The null hypothesis H3, according to which the performance of Saudi financial institutions will be enhanced by the audit committee's reduction in size, is therefore disproved.

In addition, the independence of the audit committee has a negative link with Saudi financial institutions, hence the null hypothesis H4 is rejected. Researchers (Fariha, Hossain, and Ghosh, 2022) have demonstrated this finding by examining a strong inverse association between audit committee independence and business performance as determined by Tobin's Q.

In Figure 2, the ".21" point estimate at 98.2% confidence level indicates upholding of a statistically significant positive relationship between the size of Saudi financial institution with its performance and that is similar to earlier research findings (Alqirem, et al., 2020), suggesting that the larger the size of the organization, the better the performance. Additionally, a high positive and significant relationship between firm size and firm performance has been established by Pucheta and Gallego (2020), Palaniappan (2017), and Fariha et al. (2022). Thus, we accept the fifth hypothesis, H5, which implies that the size of financial institutions has an impact on performance. Consequently, large financial institutions often tend to have higher performance compared to smaller financial institutions.

Implications of the Study and Scope for Further Research

From a research standpoint, these empirical results might provide a starting point for upcoming investigations into other facets of corporate governance and how they affect Saudi financial institutions' performance. Additionally, authorities, especially the Saudi Arabian Monetary Agency (SAMA), may find the results useful in improving corporate governance laws.

The study highlights the statistically significant impact of independent directors and audit committee characteristics on financial performance, reinforcing the importance of governance structures in shaping institutional success. Given these findings, this research contributes to the broader discussion on governance effectiveness and its practical implications.

In summary, the results provide new insights into the relationship between governance frameworks and financial performance in Saudi Arabia's financial sector. Researchers are encouraged to extend this analysis by examining additional governance-related variables, such as Director Tenure (years served on the board), average board age, and audit committee meeting frequency, to gain deeper insights into the governance mechanisms that affect institutional performance.

CONCLUSION AND IMPLICATION OF THE STUDY

Effective corporate governance plays a crucial role in ensuring that financial institutions are efficiently managed and aligned with their mission, vision, and strategic objectives. By adopting robust governance frameworks, these institutions can enhance their overall performance and stability.

As far as the researchers are aware, this is the first thorough examination of the relationship between corporate governance factors and the performance of Saudi financial institutions, including banks and insurers. The analysis uses a sample of 10 banks and 11 insurance companies from 2013 to 2022. Key governance and performance factors were monitored in order to test the presented hypotheses, and the main analytical tool used was structural equation modeling, or SEM.

This research makes a significant contribution to the existing literature in two key ways. First of all, it is one of the first studies to examine the connection between institutional performance and corporate governance in the financial industry of Saudi Arabia. Second, it introduces SEM-based analysis, offering more profound insights into governance structures and their influence on financial outcomes.

Second, the size of the boards and audit committees of financial institutions has an impact on their performance. The empirical results demonstrate a negative relationship between the size of the board, the proportion of independent members in the audit committee, the number of independent directors on the board, and the performance of Saudi financial institutions. However, for the size of Saudi financial institutions, the results indicated a statistically significant

positive relationship between the size of these institutions and their performance, which is consistent with existing literature findings (Alqirem et al., 2020; Asadi & Ramezankhani, 2022; Schumacher & Lomax, 2010).

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APPENDIX

Results of Structural Equation Modelling (SEM)

Model Fit Summary

Supplementary Table 1
Chi-Square Value (CMIN)

Model	Number of Parameters (NPAR)	Chi-Square Value (CMIN)	Degrees of Freedom (DF)	Significance Level (P)	CMIN/ DF Ratio
Default Model	16	25.763	13	0.018	1.982
Saturated Model	28	0.000	0	—	—
Independence Model	7	119.035	21	0.000	5.668

Supplementary Table 2
Root Mean Square Residual (RMR), Goodness-of-Fit Index (GFI)

Model	Root Mean Square Residual (RMR)	Goodness-of-Fit Index (GFI)	Adjusted Goodness-of-Fit Index (AGFI)	Parsimony Goodness-of-Fit Index (PGFI)
Default Model	143.442	0.968	0.930	0.449
Saturated Model	0.000	1.000	—	—
Independence Model	146.585	0.854	0.806	0.641

Supplementary Table 3
Baseline comparisons

Model	Normed Fit Index (NFI)	Relative Fit Index (RFI)	Incremental Fit Index (IFI)	Tucker-Lewis Index (TLI)	Comparative Fit Index (CFI)
Default Model	0.784	0.650	0.880	0.790	0.870
Saturated Model	1.000	—	1.000	—	1.000
Independence Model	0.000	0.000	0.000	0.000	0.000

Supplementary Table 4
Parsimony-adjusted measures

Model	Parsimony Ratio (PRATIO)	Parsimony Normed Fit Index (PNFI)	Parsimony Comparative Fit Index (PCFI)
Default model	.619	.485	.538
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Supplementary Table 5
Non-centrality parameter (NCP)

Model	Non-Centrality Parameter (NCP)	Lower Bound (LO 90)	Upper Bound (HI 90)
Default model	12.763	2.046	31.237

Supplementary Table 5 *(continue)*

Model	Non-Centrality Parameter (NCP)	Lower Bound (LO 90)	Upper Bound (HI 90)
Saturated model	.000	.000	.000
Independence model	98.035	67.445	136.140

Supplementary Table 6
Minimum Fit Function (FMIN)

Model	Minimum Fit Function (FMIN)	Estimated Population Discrepancy (F0)	Lower Bound (LO 90)	Upper Bound (HI 90)
Default model	.123	.061	.010	.149
Saturated model	.000	.000	.000	.000
Independence model	.570	.469	.323	.651

Supplementary Table 7
Root Mean Square Error of Approximation (RMSEA)

Model	Root Mean Square Error of Approximation (RMSEA)	Lower Bound (LO 90)	Upper Bound (HI 90)	Probability of Close Fit (PCLOSE)
Default model	.069	.027	.107	.194
Independence model	.149	.124	.176	.000

Supplementary Table 8
Akaike Information Criterion (AIC)

Model	Akaike Information Criterion (AIC)	Browne-Cudeck Criterion (BCC)	Bayesian Information Criterion (BIC)	Consistent AIC (CAIC)
Default model	57.763	59.037	111.317	127.317
Saturated model	56.000	58.229	149.719	177.719
Independence model	133.035	133.593	156.465	163.465

Supplementary Table 9
Expected Cross-validation Index (ECVI)

Model	Expected Cross-Validation Index (ECVI)	Lower Bound (LO 90)	Upper Bound (HI 90)	Modified ECVI (MECVI)
Default Model	0.276	0.225	0.365	0.282
Saturated Model	0.268	0.268	0.268	0.279
Independence Model	0.637	0.490	0.819	0.639

Supplementary Table 10
HOELTER

Model	Hoelter's Critical N (0.05)	Hoelter's Critical N (0.01)
Default Model	182	225
Independence Model	58	69