Journal of Statistics Applications & Probability
An International Journal

http://dx.doi.org/10.18576/jsap/150108

Mathematical Analysis of Ownership Structures on Earning Quality: Evidence from the Saudi Firms

Rabab Hamdy Abdalhamid

Department of Accounting, College of Business Administration in Hawtat Bani Tamim, Prince Sattam bin Abdulaziz University, Saudi Arabia

Received: 12 Sep. 2025, Revised: 12 Nov. 2025, Accepted: 1 Dec. 2025.
Published online: 1 Jan. 2026

Abstract: This study examines how various ownership structures affect earnings quality (EQ) in firms listed in Saudi Arabia. It adopts a thorough quantitative approach based on agency theory and the literature on corporate governance. We gathered data on ownership structure, earnings quality, and other financial variables over a five-year period from 2020 to 2024, hence the sample included 500 observations from 100 companies, and the research employed advanced statistical methods using SPSS 26 & AMOS. Overall, the study supports its primary hypothesis, there is a significant relationship between ownership structure patterns and earnings quality in Saudi listed firms, as demonstrated by both theoretical and practical findings. The findings suggest that fostering diverse and balanced ownership arrangements, especially those that promote foreign participation and ease regulatory scrutiny, can greatly improve the earning quality, which has important ramifications for policymakers, regulators, and investors in emerging markets. So, to clarify the complex relationship between ownership and earning quality, future research should look into moderating factors such as board effectiveness, audit quality, and industry-specific dynamics.

Keywords: Ownership Structures - Earning Quality.

1 Introduction

Earnings quality (EQ) refers to the extent to which reported earnings reliably reflect a company's underlying economic performance and predict future cash flows[1] .In emerging economies, where investor confidence hinges on transparent financial reporting, ownership structure particularly the composition and concentration of shareholders plays a crucial governance role in shaping EQ outcomes [2]. Recent research underscores that earnings quality (EQ) is significantly influenced by structural and non-financial governance factors and find that strong ESG performance enhances EQ and curbs real earnings management (REM)[3]. In addition to this studies have conduct a comprehensive review on accrual-based earnings management (AEM) highlighting how institutional frameworks and economic constraints serve as incentives for AEM [4].

Meanwhile, research confirms that controlling ownership often correlates with increased earnings management via discretionary accruals , whereas higher institutional ownership is consistently linked to enhanced earnings quality[2]. Institutional and foreign investors frequently act as monitoring mechanisms that bolster earnings quality, where firms with higher institutional ownership exhibit lower discretionary accruals and reduced real earnings management, pointing to enhanced financial reporting standards[5].Similarly, [6]finds that state ownership attenuates earnings quality, whereas local institutional and foreign ownership enhance it, as evidenced by greater earnings persistence implying stronger oversight. These findings illustrate that investor identity plays a critical role non-state stakeholders incentivize transparent reporting, especially in firms undergoing privatization or transitioning from state control.

In another side, (EQ) within the Saudi market has increasingly attracted academic attention due to reforms introduced by the Capital Market Authority, which aim to bolster transparency and disclosure standards among Tadawul-listed firms. [7] find that managerial ownership has a significantly positive effect on EQ, while high financial leverage significantly impairs it; in contrast, institutional ownership and board characteristics showed no statistically significant impact. Further, [1] concludes that RPTs negatively affect EQ, and that managerial and institutional ownership amplify this adverse effect, underscoring a potential dark side of insider monitoring in contexts where RPTs are prevalent .

The findings suggest ownership structure both empowers and constrains reporting integrity; this highlights the pivotal role of insider ownership in enhancing reporting credibility. However, these findings [1-4, 7] suggest that ownership structure cannot be assumed to operate in a straightforward manner while certain forms of ownership may reinforce managerial discipline and transparency; others especially when concentrated or state-controlled may facilitate opportunistic behavior .

*Corresponding author e-mail: R.abdalhamid@psau.edu.sa

As emerging markets tighten corporate governance norms to encourage separation between ownership and control, understanding how ownership structure influences EQ becomes vital not only for regulatory reform but also for guiding investors and boards toward improved financial reporting integrity.

Despite comprehensive research on ownership impacts in developed markets, notable gaps persist, especially in emerging nations marked by institutional difficulties. Many studies utilize linear models that inadequately represent the complex, non-linear effects of ownership factors; for example, [2] illustrates U-shaped and N-shaped connections in which specific ownership levels initially detrimentally affect EQ before subsequently enhancing it. Secondly, interactions among various ownership types are frequently neglected; yet, research indicates intricate interdependencies. For instance, in Vietnam, the combined effects of managerial, state, and foreign ownership influence earnings management outcomes[8]. The current literature rarely incorporates moderating elements, such as financial leverage or monitoring intensity that could enhance or mitigate the impact of ownership on EQ. This study seeks to address these gaps by empirically investigating the impact of various ownership structures, both alone and collectively, on profits quality, while considering non-linearities and moderating factors in the context of a growing capital market. The remainder of this paper is organized as follows. Section 2 examines previous research and formulates hypotheses. Section 3 delineates the research methodology, Section 4 results the outcomes, and Section 5 conclusions and recommendations.

2 Literature Review & Hypotheses Development

Institutional ownership has been widely recognized in the academic literature[9, 10] as a key external governance mechanism influencing the quality of financial reporting, where the underlying theoretical framework posits that institutional investors, from their resource advantage and monitoring capacity, are more capable than retail investors of mitigating opportunistic managerial behaviors. Recent empirical studies support to this argument. Where the studies [2, 5] documented that higher institutional ownership significantly reduces both accrual-based and real earnings management, with variations observed between state-owned and private enterprises, also demonstrated that institutional ownership positively affects earnings persistence and contributes to the consistency of reported income, indicating higher earnings quality. In this line[11] found that institutional ownership reduces corporate cash holdings by improving earnings quality and providing indirect evidence of governance efficiency. Also,[12] identified a significant improvement in analysts' forecast accuracy in firms with high institutional ownership, highlighting the credibility of financial information disclosed by these firms. In a different context, [13, 14] state to that moderate levels of institutional ownership enhance earnings quality, but excessive concentration may encourage collusion or passive oversight and that high levels of common institutional ownership negatively impact the readability and clarity of annual reports. Hence, while institutional investors are generally a force for transparency, their influence is not uniformly positive and may vary depending on investor type, holding horizon, and ownership concentration, hence, the H1 is as follows:

H1. *There is significant effect of* institutional ownership *on earning quality.*

Theoretically, when managers possess shares in the firm, their financial incentives coincide with those of shareholders, thereby diminishing the propensity for opportunistic earnings manipulation. Empirical research primarily supports this viewpoint, particularly in developing nations where external governance structures may be weaker. A study by [2] found that managerial ownership enhances earnings credibility, particularly in firms with robust board independence. Additionally, managerial ownership diminishes discretionary accruals and real earnings manipulation, signifying improved reliability in financial reporting. Moreover, [15] found that in Indonesian firms, managerial ownership reduced discretionary accruals and real profit manipulation, signifying improved credibility in financial reporting. In this line, [1] illustrated that managerial ownership mitigates the adverse impacts of related party transactions on earnings quality, whereas[16] reported that managerial institutions improve board oversight, hence diminishing actual earnings manipulation. This data across several contexts confirms that managerial ownership can improve financial reporting integrity when implemented under robust governance systems. Also, [8] provided evidence that moderate managerial shareholding enhances earnings quality by mitigating short-term performance limitations. Hence, the impact of management ownership on profit quality is complex and may vary according to ownership concentration and governance structures. [17] identified a nonlinear relationship wherein managerial ownership improves profit quality up to a certain threshold, after which excessive insider control may lead to entrenchment and reduced transparency. Furthermore, the effectiveness of managerial ownership in improving profit quality may be influenced by supplementary factors, such as institutional ownership and audit committees. This research in several contexts demonstrates that managerial ownership can enhance financial reporting integrity when incorporated within robust governance structures; hence, the H2 as follows:

H2. *There is significant effect of* managerial ownership *on earning quality.*

Recent empirical research on family-owned firms across diverse emerging markets reveals a predominantly positive

association between family ownership and earnings quality, though the complexity of governance mechanisms introduces several nuances. Hence, Empirical studies have yielded inconclusive findings about the correlation between family ownership and earnings quality, where [18] discovered that founding family ownership correlates with enhanced EQ, it indicated by reduced abnormal accruals and increased earnings informativeness. Also, [19] finds that higher family ownership concentration significantly reduces real earnings management (REM), suggesting stronger stewardship and alignment incentives among family shareholders . in such as[20] shows that engagement with Big Four audit firms mediates and amplifies the positive impact of family ownership on financial reporting quality. Similarly,[21, 22] confirms that family firms tend to exhibit lower discretionary accruals, although board independence has a weaker moderating effect in these contexts, reflecting ongoing Type-II agency concerns between majority and minority owners .

Conversely, other research emphasize that strong family ownership concentration might result in diminished profits quality, [23] demonstrates that family ownership does not significantly influence accrual earnings management but positively impacts real earnings management, indicating that controlling families may manipulate earnings for their own benefit, disadvantaging minority shareholders. Also, [24] revealing that profits quality is inferior in firms partially controlled by the controlling family compared to those entirely owned by family. Hence, a greater percentage of family owners were inversely correlated with earnings quality, indicating that variations in ownership structure substantially affect financial reporting methods. Research conducted in emerging markets, where [25, 26] indicate that family ownership may mitigate earnings management practices, suggests that family enterprises, owing to their long-term focus and concentrated ownership, may possess greater incentives to generate high-quality revenue. Hence, family ownership can improve earning quality from aligning incentives, but it may also reduce it owing to entrenchment effects and the total impact is contingent upon the particular ownership structure, the extent of family participation in management, and the existence of external governance systems. So current study conduct H3 as follows:

H3. *There is significant effect of* family ownership *on earning quality.*

Recent empirical research has examined the impact of government ownership on earnings quality, yielding mixed results, where [27] investigated the effects of state sponsored ownership transfers, termed "justice shares," on companies listed in Tehran and found a significant negative correlation between justice share ownership and (EQ), suggesting that politically motivated ownership structures promote earnings manipulation, particularly in contexts characterized by weak governance. In contrast, [2] studied Egyptian-listed companies from 2015 to 2022 and discovered that government ownership improves profit quality, especially regarding earnings persistence and consistency. Their research highlighted that the characteristics of companies and ownership structures both individually and interactively influence profit quality, underscoring the importance of examining these factors in emerging markets. Additionally, [28] explored the moderating effect of government ownership on profit management and corporate performance across the Gulf Cooperation Council (GCC) countries. Their findings indicated that government ownership boosts company performance and curtails earnings management, suggesting that it serves as an effective governance strategy to address agency challenges. Based on the discussion, hence, the H4 is as follows:

H4. *There is significant effect of* government ownership *on earning quality.*

Recent empirical studies demonstrate that foreign ownership has a generally positive impact on (EQ) in emerging and transition economies, though outcomes vary depending on ownership context and governance environment. [29] discovered that increased foreign ownership correlates with diminished real earnings management and indicates that foreign investors can compel corporations to use more prudent and transparent financial reporting processes. Furthermore [30] find that foreign ownership is associated with lower levels of accrual based and real earnings management, while state ownership exhibits the opposite effect underscoring how foreign shareholders can reduce opportunistic reporting. However, research from reveals [31] that incremental foreign institutional ownership correlates with poorer earnings predictability, indicating potential misalignment between foreign short-term investment strategies and high-quality reporting. Additionally, [32]suggests the monitoring effectiveness of foreign investors is weaker in state-owned enterprises, and highly influenced by the investors' home-country governance standards, legal origin, and cultural distance.

Hence, [33] show foreign ownership's relationship with earnings management may vary highlighting that governance mechanisms and firm type moderate its impact. Additionally, [34] assess the influence of foreign ownership on organizational structure and strategic direction of enterprises. This study indicates that foreign ownership can promote corporate governance, boost transparency, and improve strategic decision-making, hence contributing to superior profits quality. Consequently, while foreign ownership often correlates with superior profits quality due to stronger oversight and governance, the actual effect may differ depending on the firm's specific setting and the attributes of the foreign investors, so it is imperative to evaluate these aspects when analyzing the impact of foreign ownership on profits quality. Hence, H5 is as follows:

H5. *There is significant effect of* foreign ownership *on earning quality.*

3 Research Design:

3.1 Sample &Variables Measurement

This study seeks to evaluate the impact of ownership structure on earnings quality in firms listed on the Saudi Exchange. The data were sourced from the Mubasher database, employed by scholars, professionals, and practitioners globally[35]. The data about Ownership Structure, earnings quality, and other financial variables was gathered over a five-year period from 2020 to 2024. The sample comprised 500 observations from 100 enterprises, with numerous components displaying missing values due to inadequate data availability in the Saudi market, which was challenging to get, furthermore the study methodology relied on modern statistical methods (SPSS.26&AMOS). The measurement tools can be delineated as follows:

3.1.1 Independent Variables

In current study, ownership as an independent variable is composed of five types (institutional, governmental, international, familial, and managerial), where A measure of institutional ownership would be the percentage of a company's shares held by entities. While the government ownership is measured by the percentage of shares held by the government [36].Also, our analysis used the ratio of foreign shareholders' shares to the total outstanding shares as the metric for foreign ownership, in line with prior research[37] . Additionally, an executive director's percentage of shares held is a favorable proxy for their managerial ownership[38] .Finally, firms level of family ownership can be measured from percentage of shares held by family members relative to the total number of shares[39] .

3.1.2 Dependent Variable: Earnings Quality

Most accounting research typically evaluates the discretionary aspects of the modified Jones accrual model, which employs the discretionary components of total accruals (TACC) to represent annual fluctuations in operating revenues (ΔREV), accounts receivable (ΔAR), and property, plant, and equipment (PPE), as demonstrated below [40, 41]

$$TACC\_(i.t))/A\_(i,t\text{-}1) = \beta 1\ 1/A\_(i,t\text{-}1) + \beta 2\ [(\Delta Rev\text{-}\Delta AR)/A\_(i,t\text{-}1)\ ] + \beta 1\ (PPE)\_(i,t)\ /A\_(i,t\text{-}1) + \varepsilon\_(i,t) \quad (1)$$

This additional profit quality metric is represented by (EM) obtained from equation (1). Given that managers might manipulate financial data to exaggerate or diminish sales, we follow the literature and examine the absolute value of earnings management to improve precision. To normalize the EQ variable, we multiply EM by negative one. Thus, elevated (diminished) EM values indicate enhanced earning quality [37, 41].

3.1.3 Control Variable

The current study includes various control factors related to firm characteristics. These factors include firm size (Size), which is measured as the logarithm of total asset value. Return on Assets (ROA) is calculated by dividing net profit by total assets. Additionally, leverage (LEV) is defined as total debt divided by total assets. The market-to-book ratio (MTB) represents the firm's market value divided by its book value, while return on equity (ROE) is the ratio of net income to the equity held by shareholders[41, 42]

3.2 Regression specification for testing hypotheses:

To test the primary hypotheses of this research necessitates the creation of empirical models for each hypothesis separately; hence, analyzing the correlation between ownership structure and earnings quality requires the use of the following empirical models from (1) to (5):

$$EQ = \alpha + \beta_1\ Ins\_Own + \beta_2\ SIZE + \beta_3\ ROA + \beta_4\ ROE + \beta_5 LEV + \beta_6\ MB + \varepsilon \quad (1)$$

$$EQ = \alpha + \beta_1\ Man\_Own + \beta_2\ SIZE + \beta_3\ ROA + \beta_4\ ROE + \beta_5 LEV + \beta_6\ MB + \varepsilon \quad (2)$$

$$EQ = \alpha + \beta_1\ Fam\_Own + \beta_2\ SIZE + \beta_3\ ROA + \beta_4\ ROE + \beta_5 LEV + \beta_6\ MB + \varepsilon \quad (3)$$

$$EQ = \alpha + \beta_1\ Gov\_Own + \beta_2\ SIZE + \beta_3\ ROA + \beta_4\ ROE + \beta_5 LEV + \beta_6\ MB + \varepsilon \quad (4)$$

$$EQ = \alpha + \beta_1\ Fore\_Own + \beta_2\ SIZE + \beta_3\ ROA + \beta_4\ ROE + \beta_5 LEV + \beta_6\ MB + \varepsilon \quad (5)$$

4 Data analysis & results

4.1 Descriptive statistics

Table (1) shows the descriptive statistics for the research variables. The mean for institutional ownership was 29.6% and the standard deviation was 15.3%, indicating significant variation in institutional ownership ratios across firms. Regarding government ownership, the mean was 25.08%, with a standard deviation of 13.06%, reflecting significant variation in the government's influence on corporate ownership. Foreign ownership ranged from 1.13% to 60.08%, with a mean of 31.64% and a standard deviation of 15.83%, indicating a significant impact of foreign ownership on firms. Family ownership ranged from 1.10% to 76.03%, with a mean of 38.47% and a standard deviation of 21.3%, indicating that families play a significant role in corporate ownership. Management ownership is significantly lower than other types of ownership, ranging from 0.19% to 22.24%, with a mean of 12.05% and a standard deviation of 5.87%. These ratios reflect that management typically does not hold large stakes compared to other types of ownership. Regarding firm size as a control variable, it ranges from 7.36 to 11.18, with a mean of 9.45, reflecting the diverse size of the firms included in the sample. Based on these results, it can be concluded that there is significant variation in the ownership structures that affect firms.

Table 1: Descriptive Statistics

	N	Mini	Max	Mean	Std. Deviation
Gover_Owner	500	.8110	57.372	29.601	15.303
Fore_ Owner	500	.2475	50.201	25.0750	13.0632
Fam_ Owner	500	1.1284	60.0848	31.640	15.828
Instit_ Owner	500	1.10018	76.028	38.468	21.295
Manag_ Owner	500	.191245	22.2355	12.0543	5.8747
EQ	500	2.3050	12.887	7.9011	1.95435
SIZE	500	7.3631	11.1785	9.4483	.701078
ROA	500	-1.4316	1.3871	.011619	.51729
LEV	500	-1.04125	2.2063	.5332	.5210
ROE	500	-98408	1333	7707	3205
MB	500	-18679	19283	-49287	5943
Valid N (listwise)	500				

4.2: Correlation analysis

Table (2) shows the results of the correlations between ownership structure types and EQ. The results indicate that government and foreign ownership have a strong impact on earnings quality. The positive correlation between government ownership (0.495) and earnings quality indicates that firms with significant government stakes tend to have improved earnings quality. The strong correlation between foreign ownership and earnings quality (0.624) also suggests that firms with foreign participation strive for higher levels of financial quality. Furthermore, the moderate positive correlation (0.441) between family ownership and earnings quality highlights the fact that family owners are focused on achieving long-term sustainability and profitability, which contributes to improved earnings quality. In contrast, institutional and managerial ownership have a less pronounced impact on EQ. The weak correlation between institutional ownership (0.369) and managerial ownership (0.134) reflects a less pronounced effect, suggesting that these types of ownership may not have the same impact on enhancing EQ as government and foreign ownership.

Table 2: Correlations Matrix

	Gover_Owner	Fore_ Owner	Fam_ Owner	Instit_ Owner	Manag_ Owner	EQ	SIZE	ROA	LEV	ROE	MB
Gover_Owner	1										
Fore_ Owner	.005	1									
Fam_ Owner	.045	.028-	1								
Instit_ Owner	.021-	.039-	.036	1							
Manag_ Owner	.053	014-	.076-	.000	1						
EQ	.495**	.624**	.441**	.369**	.134**	1					
Size	-.046-	.025	.076	.012-	.054-	.016	1				
ROA	.003	.018-	.066	-.002-	.022	.018	.076	1			
LEV	.031	.003	.028-	.024	.023	.014	.022-	.022-	1		
ROE	.031	.111-*	.066-	-.007-	.021	.084-	.058-	.076-	.064	1	
MB	.032-	.056-	.016	.033-	.034-	.063-	.043-	.026	.088-*	.008-	1
**. 0.01 , *. 0.05											

4.3: Baseline results

[43]suggests that goodness of fit evaluates the degree to which the measurement model corresponds with the sample data, to assess model fit, the study employed the most common indices, listed in table (3) as follows:

Table 3: Model Fit

Measure	***Estimate***	***Interpretation***
GFI	.995	Accepted
RMR	0.000	Accepted
CFI	1.000	Accepted
TLI	1.000	Accepted
RMSEA	.000	Accepted
NFI	1.000	Accepted
IFI	1.000	Accepted

The CFI number is 1.000, which is acceptable as it exceeds 0.95. Moreover, the RMR index value is deemed appropriate as it is below 0.05. Correspondingly, the RMSEA is 0.000, which is below the threshold of 0.08, as suggested by[43].The GFI value of 1.000 is deemed acceptable since it exceeds 0.8 [43]. Also, the fig(1) shows a structural equation model (SEM) using AMOS to illustrate the relationship between different ownership types and earnings quality (E_Q). The results show that (Gov_Own) and (Foreign_Own) have significant positive effects on earnings quality, with impact coefficients of 0.17 and 0.18, respectively, indicating that these types of ownership contribute more to improving earnings quality than other types of ownership. On the other hand, the results show that (Family_Own, Instit_Own and Manag_Own) have weak but significant positive effects, with impact coefficients ranging between 0.14 and 0.15.

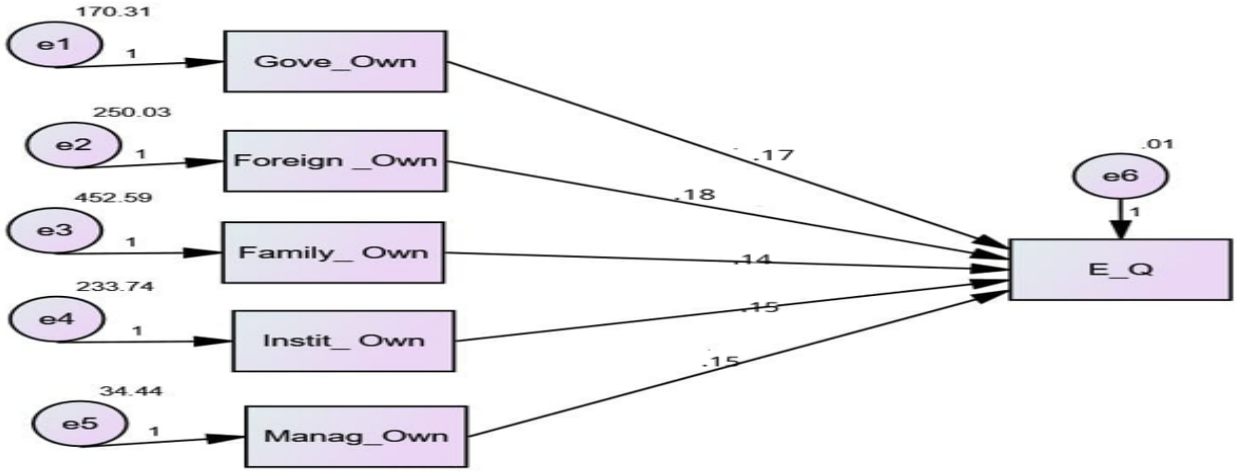

Fig. 1: Sequential Equation Model (SEM)

4.4: Regression analysis

4.4.1 Model (1): Testing the effect of Instit_ Own *on EQ*

The table (4)shows the results of model analysis (1), where the results indicate that Instit_ Own has a significant positive impact on EQ (B = 0.047, t = 8.811, Sig. < 0.001), hence, the effective role of institutional investors in improving EQ. On the other hand, there is an insignificant negative impact of the ROE variable (B = -4.926, Sig. = 0.058). Also, R^2 value reached 0.146, indicating that the model explains approximately 14.6% of the variance in EQ. Finally, the Durbin-Watson value = 2.020 indicates that the model does not suffer from the problem of time correlation between errors, which strengthens the validity of the analysis results. This corresponds with [2, 5] that elevated institutional stakes mitigate both accrual-based and real earnings management in emerging markets and that institutional investors augment reporting credibility via active oversight and diminished discretionary accruals , hence, that Instit _Own has a significant impact on EQ.

Table 4: Regression Results (H1)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.210	1.124		5.524	.000		

	Instit_Own	.047	.005	.367	8.811	.000	.998	1.002
	SIZE	.035	.117	.012	.297	.766	.989	1.011
	ROA	.050	.158	.013	.316	.752	.988	1.012
	LEV	.024	.157	.006	.151	.880	.987	1.013
	ROE	-4.926	.000	.081-	1.930-	.054	.988	1.012
	MB	-1.677	.000	.051-	1.219-	.224	.988	1.012
R: .382[a] **R²** : .146 **Adjuster R ²**: .136 **F**:14.058 **Sig**: .000[b] Durbin-Watson: 2.020								
a. Predictors: (Constant), MB, ROE, Instit_Own ,ROA, LEV, FIRM SIZE								
b. Dependent Variable: EQ								

The figure (2) shows that the points are distributed close to a straight line, indicating that the residuals follow a normal distribution well, which strengthens the validity of the model and the reliability of the results derived regarding EQ.

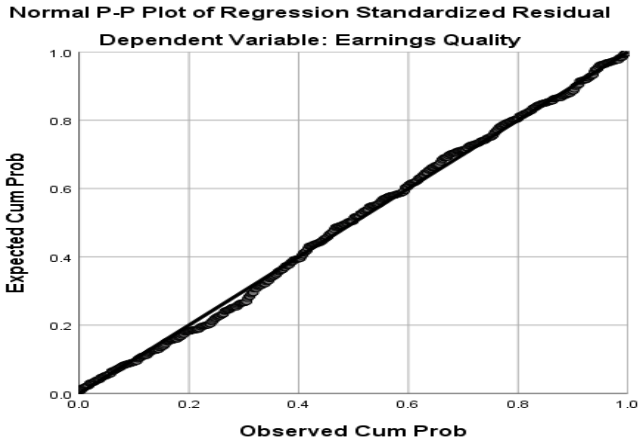

Fig. 2: Normal P–P Plot of Regression Residuals (Earnings Quality)

4.4.2 Model (2): The effect of Man_Own *on EQ*

Also, table (5) presents the results of the regression analysis for the model (2). The results show that Man_Own has a positive significant effect on EQ (B = 0.045, t = 3.012, Sig. = 0.003), indicating that increasing the Man_Own percentage contributes to improving EQ. On the other hand, the results showed that MB has a strong negative and significant effect (B = -1.904, Sig. = 0.000), indicating that increasing the market share reduces EQ, which may indicate that financial markets may not accurately reflect a company's actual performance. The R^2 value was 0.029, meaning that the model explains only 2.9% of the variance in EQ. The Durbin-Watson value of 2.066 demonstrates the absence of temporal correlation between the errors in the model, which enhances the credibility of the results and implies that the underlying assumptions of the model are correct. This aligns with [1] , which demonstrate that when managers possess equity and governance is strong, discretionary accruals diminish. similarly [15]concludes that CEO shareholding diminishes opportunistic profit manipulation. Hence, the results of the current study confirm that Man_Own has a significant impact on EQ.

Table 5: Regression Results (H2)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
2	(Constant)	6.986	1.209		5.777	.000		
	Man_Own	.045	.015	.134	3.012	.003	.994	1.006
	SIZE	.042	.125	.015	.334	.738	.986	1.014
	ROA	.035	.169	.009	.209	.835	.987	1.013
	LEV	.044	.167	.012	.265	.791	.987	1.013
	ROE	-5.293	.000	.087-	1.945-	.052	.987	1.013
	MB	-1.904	.000	.058-	1.297-	.195	.988	1.012

R: .172[a]	**R^2** : .029	**Adjuster R^2** : .018	**F**:2.496	**Sig**: .022[b]	Durbin-Watson: 2.066
a. Predictors: (Constant), MB, ROE, Man_Own , ROA, LEV, FIRM SIZE					
b. Dependent Variable: Earnings Quality					

The figure (3) shows a normal P-P plot of the standardized residuals in a regression analysis. The points are distributed very closely to a straight line, indicating that the residuals follow a normal distribution well. This validates the assumptions regarding the distribution of the residuals and enhances the reliability and accuracy of the results of the model used in EQ analysis.

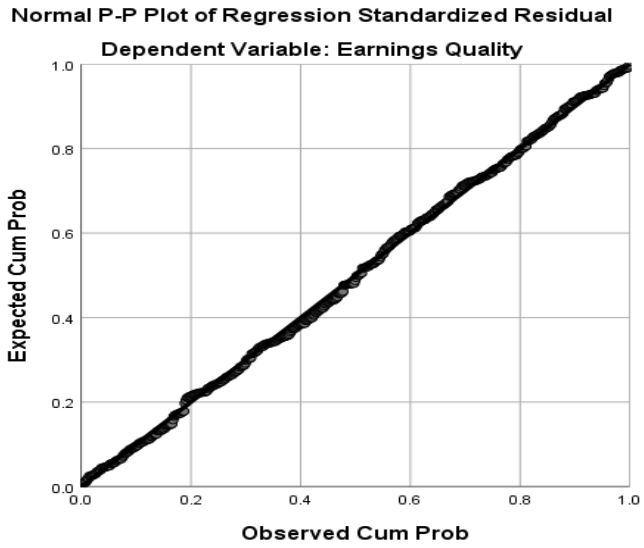

Fig. 3: Residuals P–P Plot (Earnings Quality)

4.4.3 Model (3): The effect of Fam_Own *on EQ*

The table (6) presents the model (3) analysis results, which show that Fam_Own has a significant positive effect on EQ (B = 0.040, t = 10.902 (Sig. < 0.001)), hence indicating that increasing the percentage of Fam_Own enhances EQ. In contrast, the results showed an insignificant negative effect of the control variable (SIZE) on earnings quality (B = -0.064, Sig. = 0.569). The results also indicate that $R^2 = 0.204$, which means that the model explains only 20.4% of the variance in EQ, and Durbin-Watson = 2.055, indicating that the model does not suffer from the problem of time correlation, which strengthens the validity of the basic assumptions of the model. This results consist with [19] observe that large family concentration limits actual earnings management. Based on these results, they indicate that Fam_Own has a significant impact on EQ.

Table 6: Regression Results(H3)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
3	(Constant)	6.932	1.075		6.446	.000		
	Fam_Own	.040	.004	.441	10.902	.000	.986	1.014
	SIZE	.064-	.113	.023-	.570-	.569	.984	1.016
	ROA	.043-	.153	.011-	.280-	.780	.985	1.015
	LEV	.088	.152	.023	.578	.564	.987	1.013
	ROE	-3.613	.000	-.059-	1.463-	.144	.985	1.016
	MB	-2.284	.000	-.069-	1.719-	.086	.989	1.011
R: .451[a]		**R^2** : .204	**Adjuster R^2** : .194		**F**:21.009	**Sig**: .000[b]		Durbin-Watson: 2.055
a. Predictors: (Constant), MB, ROE, Fam_Own ,ROA, LEV, SIZE								
b. Dependent Variable: EQ								

4.4.4 Model (4): The effect of Gov_Own *on EQ*

Table (7) indicates the model analysis results (4) show that Gov_Own has a significant positive effect on EQ, with (Beta = 0.498; Sig = 0.000), meaning that increasing the percentage of Gov_Own leads to a significant improvement in EQ compared to the other variables in the model. The R of 0.508 indicates a moderately strong relationship between the independent variables and EQ, while R^2 = 0.258 means that 25.8% of the variance in earnings quality is explained by the independent variables in the model. Furthermore, the Durbin-Watson value of 2.079 indicates no autocorrelation issues, while the VIF values indicate no multicollinearity issues between the independent variables. In contrast, ROE showed a significant negative effect with a (Beta = -0.098 ;sig = 0.013), while ROA, LEV, MB, and size showed weak and insignificant effects on EQ. this results consist with [27] also demonstrate that politically-connected ownership diminishes opportunistic reporting in the context of inadequate governance, furthermore [44] demonstrates that in GCC markets, government ownership increases transparency and curtails earnings manipulation. Hence, GOV_Own has a significant impact on EQ.

Table 7: Regression Results (H4)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
4	(Constant)	5.284	1.053		5.018	.000		
	Gov_Own	.074	.006	.498	12.799	.000	.995	1.005
	SIZE	.084	.109	.030	.770	.442	.987	1.013
	ROA	.031	.147	.008	.211	.833	.988	1.012
	LEV	.006	.146	.002	.043	.966	.987	1.013
	ROE	-5.954	.000	.098-	2.501-	.013	.987	1.013
	MB	-1.538	.000	.047-	1.199-	.231	.988	1.012
R: .508[a] **R^2** : .258 **Adjuster R^2** .249 **F:** 28.590 **Sig**: .000[b] Durbin-Watson: 2.079								
a. Predictors: (Constant), MB, ROE, Gov_Own, ROA, LEV, SIZE								
b. Dependent Variable: EQ								

4.4.5 Model (5): Testing the effect of Fore_Own *on EQ*

Finally, table (8) indicates the results of model (5), which show that Fore_Own has a positive impact on EQ, with a beta of 0.622 and a significance level of 0.000. Furthermore, R^2 = 0.392 indicates that 39.2% of the variance in EQ is explained by these variables, indicating that there are other factors not included in the model. The Durbin-Watson value of 1.996 also indicates that the model does not suffer from autocorrelation errors, strengthening its statistical validity. These results demonstrate that increasing foreign ownership leads to improved EQ, hence the results supports previous literature [29, 30] that companies with Fore_Own or participation typically promote transparency and implement advanced accounting practices, which contribute to improved EQ.

Table 8: Regression Results (H5)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
5	(Constant)	5.561	.946		5.880	.000		
	Fore_Own	.077	.004	.622	17.558	.000	.983	1.017
	SIZE	.011-	.098	.004-	.114-	.909	.989	1.012
	ROA	.112	.134	.030	.838	.403	.987	1.013
	LEV	.041	.133	.011	.313	.754	.988	1.013
	ROE	-8.507	.000	.014-	.392-	.695	.975	1.025
	MB	-9.433	.000	.029-	.811-	.418	.987	1.014
R: .626[a] **R^2** : .392 **Adjuster R^2** : .384 **F**:52.949 **Sig**: .000[b] Durbin-Watson: 1.996								
a. Predictors: (Constant), MB, ROE, Fore_Own, ROA, LEV, SIZE								
b. Dependent Variable: EQ								

The figure(4) shows that the points are distributed closely to a straight line, indicating that the residuals follow a normal distribution well, which enhances the accuracy of the results derived from the model and increases the reliability of forecasts about EQ.

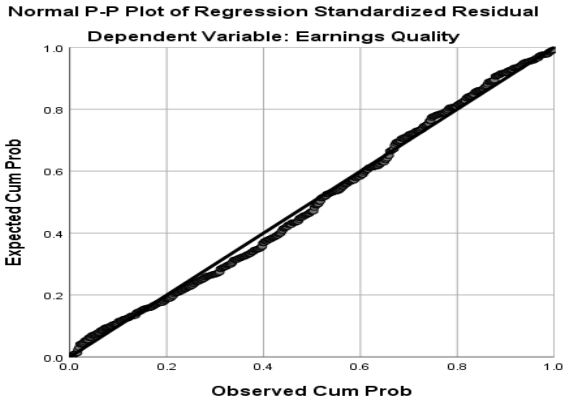

Fig. 4: Normal P–P Plot (EQ Model)

5 Conclusions & Recommendations

This study examined the influence of various ownership structures on earnings quality (EQ) in Saudi listed firms, utilizing a thorough quantitative approach based on agency theory and corporate governance literature. The findings highlight the essential influence of ownership structure on the financial reporting in an emerging market. In this line, analysis indicated that foreign ownership has the most substantial positive impact on earnings quality, implying that foreign investors impose elevated standards of oversight, require more precise financial disclosures, and exert pressure on firms to implement internationally consistent accounting practices. Similarly, government ownership was shown to enhance earnings quality, indicative of the regulatory discipline and policy-driven focus typically linked to state participation in company governance.

Moreover, family ownership demonstrated a slight although statistically significant favorable impact on earnings quality. This suggests that family-controlled enterprises, although occasionally susceptible to entrenchment, may also emphasize long-term sustainability and reputational capital, thus enhancing the credibility of their financial reporting. Conversely, institutional and management ownership exhibited comparatively weaker impacts, while still statistically significant. This can be ascribed to the diverse incentives of institutional investors and the restricted shareholding proportions among managers in the study sample. The study enhances the literature by elucidating the distinct impacts of each ownership type on EQ, revealing that the effects vary across governance categories. The findings highlight that external and governmental stakeholder's function as efficient monitoring agents in bolstering earnings credibility, but the influence of internal ownership structures, including managerial and institutional forms, is more complex and contingent on many factors. The findings have significant consequences for policymakers, regulators, and investors in emerging markets; they propose that cultivating varied and balanced ownership arrangements, particularly those that encourage foreign involvement and facilitate regulatory scrutiny, can significantly enhance the earning quality. Future study should investigate moderating factors like as board effectiveness, audit quality, and industry specific dynamics to elucidate the intricate relationship between ownership structure and earning quality.

Acknowledgments:

"The authors extend their appreciation to Prince Sattam bin Abdulaziz University for funding this research work through the project number (PSAU/202**5**/02/3**2533**)" Prince Sattam Bin Abdulaziz University is the only funder of the project.

Data Availability Statement:

The data presented in this study are available on request from the corresponding author.

Conflicts of Interest:

The authors declare no conflict of interest.

References

[1] Alsultan, A. and K. Hussainey, *The moderating effect of ownership structure on the relationship between related party transactions and earnings quality: evidence from Saudi Arabia.* International Journal of Financial Studies, 2024. **12**(3): p. 58.

[2] Alrobai, F., A.A. Alrashed, and M.M. Albaz, *Earnings quality drivers: Do firm attributes and ownership structure matter in emerging stock markets?* Risks, 2025. **13**(1): p. 6.

[3] Vatis, S.E., et al., *The Impact of ESG on Earnings Quality and Real Earnings Management: The Role of Firm Size.* Sustainability, 2025. **17**(11): p. 5027.

[4] Mlawu, L., F.R. Matenda, and M. Sibanda, *Incentives for Accrual-Based Earnings Management in Emerging Economies—A Systematic Literature Review with Bibliometric Analysis.* Administrative Sciences, 2025. **15**(6): p. 209.

[5] Ali, M.J., et al., *Institutional ownership and earnings quality: Evidence from China.* Pacific-Basin finance journal, 2024. **84**: p. 102275.

[6] Ben-Nasr, H., N. Boubakri, and J.-C. Cosset, *Ownership structure and earnings quality: Evidence from newly privatized firms.* To link to this article: https://www. researchgate. net/publication/228431077, 2009.

[7] Aldoseri, M. and R. Hussein, *The impact of ownership structure and board characteristics on earnings quality: Evidence from Saudi Arabia.* Journal of Statistics Applications and Probability, 2024. **13**(1): p. 227-238.

[8] Nguyen, H.A., Q. Lien Le, and T.K. Anh Vu, *Ownership structure and earnings management: Empirical evidence from Vietnam.* Cogent Business & Management, 2021. **8**(1): p. 1908006.

[9] Boshnak, H.A., *The impact of corporate governance and ownership structure on the capital structure decisions of Saudi listed firms.* Journal of Management and Governance, 2025. **29**(2): p. 543-572.

[10] Kumar, K., et al., *Do ownership structures and governance attributes matter for corporate sustainability reporting? An examination in the Indian context.* Management of Environmental Quality: An International Journal, 2022. **33**(5): p. 1077-1096.

[11] Elsawah, T.I., *The effect of institutional ownership and earnings quality on cash holdings level–An empirical study on companies listed in the Egyptian stock exchange.* Alexandria Journal of Accounting Research, 2020. **4**(2): p. 290-374.

[12] Liu, W. and A. Chen, *Institutional ownership and analysts' earnings forecasts.* Finance Research Letters, 2024. **61**: p. 104987.

[13] Davis, J.G. and M. García-Cestona, *Institutional ownership, earnings management and earnings surprises: evidence from 39 years of US data.* Journal of Economics, Finance and Administrative Science, 2023. **28**(56): p. 218-236.

[14] Jiang, Z., L. Hu, and Z. Wang, *Better or worse? Revealing the impact of common institutional ownership on annual report readability.* Humanities and Social Sciences Communications, 2024. **11**(1): p. 1-11.

[15] Paryati, R., *Managerial Ownership as a Controller of Earnings Quality in Jakarta Islamic Index 70.* JRAP (Jurnal Riset Akuntansi dan Perpajakan), 2024. **11**(1): p. 105-114.

[16] Alsultan, A.S., *Using Managerial Ownership in Explaining the Relationship between Board Characteristics and Real Earnings Management: Evidence from Saudi Arabia.* Alexandria Journal of Accounting Research, 2023. **7**(2): p. 61-102.

[17] Nel, G., M. Jachi, and H. Scholtz, *The impact of institutional and managerial ownership on the pay-performance relationship: Evidence from JSE-listed firms.* Journal of Management and Governance, 2024: p. 1-31.

[18] Wang, D., *Founding family ownership and earnings quality.* Journal of accounting research, 2006. **44**(3): p. 619-656.

[19] Ghaleb, B.A.A., H. Kamardin, and M.I. Tabash, *Family ownership concentration and real earnings management: Empirical evidence from an emerging market.* Cogent Economics & Finance, 2020. **8**(1): p. 1751488.

[20] Susanto, H., et al., *The Impact of Family Firms on Financial Reporting Quality: The Mediating Role of High-Quality Auditors.* Journal of Risk and Financial Management, 2025. **18**(6): p. 295.

[21] Naz, A., et al., *Nexus between corporate governance and earnings management in family and non-family firms.* E a M: Ekonomie a Management, 2023. **26**(2): p. 42-57.

[22] Naz, A., et al., *Illuminating the shadows: a systematic review of earnings management practices in family-owned enterprises and future research directions.* Journal of Business and Socio-economic Development, 2024. **4**(4): p. 340-358.

[23] Murni, S., et al., *Effect of family control on earnings management: The role of leverage.* Risks, 2023. **11**(2): p. 28.

[24] Sundkvist, C.H., L. Che, and T. Stenheim, *Ownership structure and earnings quality in private family firms.* Available at SSRN 5119035, 2025.

[25] Hiranrithikorn, P. and W. Joemsittiprasert, *Family owned firms and earning quality.* International Journal of Innovation,

Creativity and Change, 2019. **6**(11): p. 59-72.

[26] Sköldmark, M. and C. Törnkvist, *The Effect of Family-Ownership on Earnings Management: The Moderating Role of Leverage*. 2025.

[27] Imeni, M. and S. Tayebinaz, *Earnings Quality and Government Influence: A Review of Political Economy Theory.* Accounting and Auditing with Applications, 2025. **2**(3): p. 157-170.

[28] Aljuhani, B.M., et al., *Government Ownership as a Moderator Between Earnings Management and Firm Performance: Insights from GCC Countries.* Journal of Infrastructure, Policy and Development, 2024. **(10)8**: p. 18-1.

[29] Kim, Y., *Discussion of foreign ownership and real earnings management: Evidence from Japan.* Journal of International Accounting Research, 2015. **14**(2): p. 215-219.

[30] Tran, M.D. and N.H. Dang, *The impact of ownership structure on earnings management: The case of Vietnam.* Sage Open, 2021. **11**(3): p. 21582440211047248.

[31] Mazumder, M.M.M., *Exploring the impact of ownership structure on earnings predictability: Insights from Japan.* Indian journal of corporate governance, 2016. **9**(2): p. 97-121.

[32] Han, M., A. Ding, and H. Zhang, *Foreign ownership and earnings management.* International Review of Economics & Finance, 2022. **80**: p. 114-133.

[33] Kassab, O., *The Impact of Ownership Structure on Earnings Management: Evidence from Private Firms in the Benelux Region*. 2025, University of Twente.

[34] Roedder, F. and S. Schmid, *The impact of foreign ownership on firms: a systematic literature review.* Management Review Quarterly, 2025: p. 1-29.

[35] Chebbi, K. and M.A. Ammer, *Board composition and ESG disclosure in Saudi Arabia: The moderating role of corporate governance reforms.* Sustainability, 2022. **14**(19): p. 12173.

[36] Al-Janadi, Y., R. Abdul Rahman, and A. Alazzani, *Does government ownership affect corporate governance and corporate disclosure? Evidence from Saudi Arabia.* Managerial Auditing Journal, 2016. **31**(8/9): p. 871-890.

[37] Saini, N. and M. Singhania, *Performance relevance of environmental and social disclosures: The role of foreign ownership.* Benchmarking: An International Journal, 2019. **26**(6): p. 1845-1873.

[38] Oyerogba, E.O., et al., *The roles of ownership structure on carbon emission disclosure quality of the listed oil and gas companies in Nigeria.* International Journal of Energy Economics and Policy, 2025. **15**(1): p. 25-35.

[39] Chen, S., X. Chen, and Q. Cheng, *Do family firms provide more or less voluntary disclosure?* Journal of accounting research, 2008. **46**(3): p. 499-536.

[40] Saona, P., et al., *Do board gender diversity and remuneration impact earnings quality? Evidence from Spanish firms.* Gender in Management: An International Journal, 2024. **39**(1): p. 18-51.

[41] Kalembe, D., et al., *CEO power, audit committee effectiveness and earnings quality.* Journal of Accounting in Emerging Economies, 2024. **14**(3): p. 585-611.

[42] Wei, M., Y. Wang, and S. Giamporcaro, *The impact of ownership structure on environmental information disclosure: Evidence from China.* Journal of environmental management, 2024. **352**: p. 120100.

[43] Byrne, B.M., *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. 2013: routledge.

[44] Aljuhani, B.M., et al., *Government Ownership as a Moderator Between Earnings Management and Firm Performance: Insights from CC Countries.* Journal of Infrastructure, Policy and Development, 2024. **8**(10): p. 1-18