Journal of Statistics Applications & Probability
An International Journal

http://dx.doi.org/10.18576/jsap/140617

Statistical Examination of Earnings Quality in Emerging Markets: A Critical Review of the Literature

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Received: 2 Sep. 2025, Revised: 12 Oct. 2025, Accepted: 27 Oct. 2025.
Published online: 1 Nov. 2025.

Abstract: The research aims to discover the nexus between earnings quality and internal determinants, such as ownership structure, board of directors' characteristics, and firm-level attributes in the literature and within Saudi Arabia, we followed two approaches, qualitative to analyze related previous literature and quantitative to analyze data from 218 firms listed in the Saudi market from 2022 to 2024, through two statistical models to explore the impact of ownership structure and board characteristics on earnings quality. Our results reveal that financial leverage has a strong negative effect on earnings quality, supporting agency theory. In addition, there is a statistically significant positive nexus between ownership concentration and earnings quality, which aligned with both agency and stewardship theories assumptions. Moreover, board independence is the only corporate governance variable with statistical significance with earnings quality. As, board size and meeting are insignificant, suggesting that board effectiveness depends more on composition than on size. Our findings contribute to the literature by providing new theoretical and empirical evidence from the Saudi context regarding the determinants of earnings quality and gives investors, professionals, policymakers, and regulators insights into this arguable area. Additionally, direct future research to examine the determinants of earnings quality in other economies to create a reboots framework for earnings quality.

Keywords: Earnings Quality, Ownership Structure, Board Characteristics, Agency Theory, Saudi Arabia.

1. Introduction

1.1. Research background

Earnings and their related concepts, especially earnings quality (EQ), are considered necessary for enhancing investor confidence within emerging markets, as EQ reflects the integrity and transparency of financial statements and reports [1,2,3]. In this academic research, the Saudi context presents an optimal business environment – based on the current economic state - for capturing the determinants of EQ, due to the regulatory reforms driven by Saudi Vision 2030 and the unique features of the corporate governance (CG) code. In more depth, the main internal determinants of EQ are the governance mechanisms, such as ownership structure (OS) and the board of directors (BOD) attributes [4,5]. Thus, this research aims to provide a new empirical investigation and evidence regarding how these mechanisms influence EQ based on the Saudi context. The understanding of EQ requires acknowledging that firms may employ many methods to manage their earnings to achieve the quality in their reported earnings.

1.2. The nature of Saudi context

Saudi Arabia is considered a rapidly and steadily developing business environment, in line with its Vision 2030, a key pillar of which is "economy". When linking the economy to the Saudi financial market, the quality of earnings (accounting and financial) is one of the most prominent factors attracting foreign capital to enter the Saudi financial market for investment and to generate high-quality profits (consistency and predictability). Therefore, the Kingdom of Saudi Arabia needs to identify the factors that influence the quality of earnings for companies listed on the Saudi market.

A primary factor shaping CG dynamics in Saudi Arabia is the highly concentrated ownership. The Saudi financial market revolves around a relatively small number of large, listed firms, where Blockholders—often state authorities such as the Public Investment Fund (PIF) or founding families—hold significant stakes [6,7]. This concentrated ownership pattern mainly directs the agency conflict. The traditional Agency Type I problem (conflict between shareholders and management) arguably exists less due to the increased monitoring capacity of large Blockholders. However, this structure increases the Agency Type II problem, which is the conflict between controlling and minority shareholders [4,5,8]. In the Saudi context,

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the central issue of EQ is not the managerial opportunism but rather the potential for the controlling owner to engage in financial manipulation to maximize private wealth. Therefore, this research was designed to test for the risks associated with this Type II agency perspective.

Furthermore, the CG lens in Saudi Arabia is defined by the rapid evolution of the Capital Market Authority (CMA) Corporate Governance codes [6,7]. These codes determine the board structure, including the minimum percentage of independent and non-executive directors. Moreover, listed firms must have mandatory board committees. The current code ensures that committee members cannot be executive directors and must include at least one independent, with the chairman being independent. These regulations provide a guide for the CG compliance index.

1.3. Research motivations and questions

The motivation of this research mainly came from the critical theoretical inconsistencies and the inherent methodological challenges required to establish causality within the CG-EQ nexus. Despite most of the previous literature stating that CG mechanisms, such as board independence and size, enhanced EQ. Empirical evidence across the Gulf Cooperation Council countries, including Saudi Arabia, often proves to be contradictory. For example, scholars examining the nexus between board governance mechanisms and firm outcomes have mixed results. While some scholars outside the GCC support the role of independence in improving EQ, suggesting that firms with more independent directors achieve higher EQ levels, other scholars suggest that independent directors alone are insufficient, noting that their effectiveness is dependent on their incentives. Furthermore, this mixed evidence needs a new investigation focused on the Saudi context to provide new evidence. Going further, the predicted impact of CG on EQ is often mixed across the accounting scientific theories, leading to many empirical assumptions that must be tested, such as the Agency and Stewardship Theories. So, the major objective of this research is to provide new evidence regarding the impact of OS and BOD on EQ among listed firms in Saudi Arabia. To achieve this objective, our research addressed the following main questions:

- How ownership structures (managerial, institutional, and ownership concentration) influence earnings quality in Saudi Arabia?
- How board of directors' characteristics (size, independence, and meeting) influence earnings quality in Saudi Arabia?

2. Theoretical backbones, academic literature, and hypotheses

2.1. Theoretical Foundations of EQ.

The examining of CG-EQ nexus in accounting and finance research is grounded primarily in two theories: agency theory and stewardship theory. Firstly, agency theory assumes that the interest conflict exists when the agent (managers) is separate from the principal (owners). To mitigate this interest conflict, CG mechanisms -BOD- act as monitors to ensure that managers act in the same line with the shareholders' interests. However, as noted in the Saudi context, the Agency Type II problem demands that the BOD also monitor the controlling shareholder's actions that might harm minority investors. Effective governance is thus expected to reduce both Type I (managerial) and Type II (controlling shareholder) activities, thereby enhancing EQ.

Secondly, stewardship theory offers another perspective, suggesting that managers may act as responsible stewards who are intrinsically motivated towards organizational success. This view emphasizes autonomy, self-governance, and hard work as elements that motivate managers. If managers are naturally stewards, then an overly strict monitoring regime enforced by an independent board might be counterproductive. This theory helps explain why empirical findings often show mixed or insignificant relationships between traditional CG mechanisms (like independence) and EQ.

Table 1: Key Corporate Governance Theories and Saudi Context Implications

Theory	Primary Conflict	Saudi Context Relevance	Predicted Monitoring Mechanism	Predicted Impact on EQ
Agency (Type I)	Manager vs. Shareholder	Lower, due to concentrated ownership	External monitoring (Independent Board)	Positive
Agency (Type II)	Controlling vs. Minority Shareholder	High (Dominant agency problem)	Internal checks and balances, Regulatory protection	Mixed/Negative
Stewardship	Self-interest vs. Corporate Goals	Mixed (Applies to expert, motivated executives)	Managerial alignment, Autonomy	Positive

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2.2. EQ determinants in the accounting literature before and after 2000

2.2.1. Related literature before 2000.

Dechow et al. [9] indicated that various measures have been used as indications of EQ, such as timeliness, accruals, loss avoidance, smoothness, and persistence. But noted that it's difficult to reach a single conclusion on what EQ is because "quality" is contingent on the helpful in decision-making context. However, Pagalung & Sudibdyo [10] studied the determinants of EQ in an emerging market. The EQ was measured using attributes such as persistence and predictability using data from 2005 to 2010. The result showed that all attributes of EQ were different from each other. The analysis showed that the leverage had an important nexus with EQ, while sales and firm size showed a nexus with four attributes of EQ. In addition, Ramadan [11] identified the factors that affect the EQ of 58 listed firms in Jordan from 2000 to 2013. Accordingly, main variables were selected (leverage, performance, investment decisions, and accounting conservatism) and found a direct impact for each main variable on EQ. These results are in the same line with the view that the higher the firm's earnings are, the less likely it becomes to practise creative accounting or earnings management. In addition, accounting conservation has a major role in limiting the creative accounting practices or earnings management.

2.2.2. Related literature after 2020.

Pham & Nguyen [12] reviewed many EQ measurements, and investigated its determinants of Vietnamese listed firms from 2011 to 2019, and indicated that firm size and dividend yield are positively related to EQ, while profitability, leverage, and growth have negative impacts on EQ. Meanwhile, firm age had a positive impact on EQ. Going further, Pujiati et al. [13] illustrated that the EQ indicates the current or future capability of the firm to support the decisions made by the BOD. Moreover, it examined the EQ determinant using 212 firm-year observations in Indonesia from 2016 to 2018 and showed that adopting IFRS and accounting disclosure practices cannot affect EQ. In addition, leverage statistically affects EQ. Furthermore, Valdiansyah & Murwaningsari [14] illustrated that discretionary accruals are EQ proxies, and the greater the value of accruals, the greater the practice of earnings manipulation and vice versa. In addition, high-quality financial reports (especially EQ) are expected to help stakeholders in decision-making process. Using 226 banking data from Indonesia in the pre-corona crisis period, from 2013 until 2019, the results found that pre-managed earnings, liquidity, and efficiency affect EQ. The CG mechanisms can moderate liquidity and efficiency on EQ, while pre-managed earnings cannot be moderated. In addition, Anam [15] investigated the impact of capital structure (debt to equity), investment opportunity set (market to book value), and information asymmetries (bid-ask spread) on EQ (discretionary accruals) and found that capital structure and asymmetric information have a positive impact on earnings quality. Moreover, the investment opportunity set does not affect the quality of earnings. Moreover, Wahyuningtyas & Rahman [16] analyzed the effect of capital structure and investment opportunity on EQ by making managerial ownership a moderating variable. using a sample of Indonesian listed firms from 2019 to 2021 and noted that the investment opportunity has a positive impact on EQ, capital structures (Managerial and concentration) have a negative effect.

2.3. The Nexus Between EQ and OS.

Using a sample of 117 French firms, Ayadi & Boujelbène [17] studied the nexus between OS and EQ during the period from 2003 to 2011 and found a linear regression showing that managerial ownership has a positive impact on earnings manipulation and revealed that institutional ownership and ownership concentration have a positive impact on EQ. Moreover, Tessema et al. [18] investigated the impact of ownership structure, ownership disparity, and family ownership on EQ using data from South Korea and found that ownership structure is significantly related with higher EQ.

Based on the assumptions of the agency theory and the institutional theory, Alhadi et al. [19] examined whether managerial and institutional ownership are related to higher EQ from 2007 to 2016 in Malaysia, using the generalized method of moments (GMM), and indicated that managerial ownership is essential for improving EQ before and after IFRS adoption. Also, no significant improvement is noted for institutional shareholders. Based on stakeholder theory, Kristiawan [20] examined the effect of concentrated ownership structures on the relationship between corporate social responsibility and EQ using 87 Indonesian firms from 2013 to 2018 and ensured that the concentrated OS affected the nexus between social responsibility and EQ.

Another piece of evidence, Oyebamiji [21] determined the nexus between OS and EQ of listed financial firms in Nigeria from 2009 to 2018. data were analyzed OLS statistical method and random effect estimation techniques. The result showed that institutional ownership had a positive nexus with EQ, while ownership concentration had a negative nexus with EQ. Going further, Sih [22] examined the effect of audit quality and ownership structure on earnings management/quality using a sample of 175 firms listed on the Indonesia Stock Exchange from 2016 to 2018 and found that auditor quality and OS did not affect earnings management. Meanwhile, ownership structure and audit quality are proven to affect earnings management, which is measured by abnormal discretionary expense.

Fambudi & Murwaningsari [23] ensured that EQ is an important benchmark for firms to determine the quality of a firm's

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accounting information and analyzed the effect of institutional ownership structure and EQ on firm performance using listed firms on the Indonesia Stock Exchange and Singapore Stock Exchange from the period 2018 to 2020. Moreover, it was noted that institutional ownership structure has a significant positive effect on future performance and governance. Based on the Saudi environment from 2019 to 2021, Aldoseri et.al, [7] found that managerial ownership has a positive impact on EQ. Moreover, there is a positive but non-significant impact for institutional ownership and board of directors' size on EQ, also showed a negative and non-significant impact for ownership concentration and board of directors' independence.

Based on the mixed evidence that have been mentioned in the previous academic literature, the following hypothesis can be developed:

H1: there is a positive impact of ownership structure on earnings quality in Saudi Arabia

2.4. The Nexus Between Earnings Quality and Board Characteristics

Al-Othman & Al-Zoubi [24] identified the impact of BOD's characteristics (e.g., board, duality, ownership, independence, and gender) on EQ of 33 listed industrial firms from 2011 to 2017 in Jordan and found that EQ of industrial firms listed on the Amman Stock Exchange is 73.6%. Additionally, there is a significant impact from BOD characteristics on EQ; for instance, the board size and the experience of board members have a positive impact on EQ, while duality has a negative and significant impact on EQ. The other characteristics, board independence, the qualification of board members, and the gender of board members, had no significant impact on EQ. Going further and motivated by agency conflicts of real earnings management and upper echelons in CEO demographic characteristics, Musa et al. [25] examined the effect of CEO attributes on real earnings management as another side of EQ and addressed the question of whether the presence of an independent board ensures accurate and reliable reporting practice. Using a sample of 292 firm-year observations from Nigeria from 2018 to 2021, and noted that CEO expertise, compensation, and CEO nationality reduce real earnings management (increases EQ) and improve the overall financial reporting quality. Accordingly, showed that independent directors on the board strengthen the CEO's ability to reduce likely earnings manipulation. However, found that the presence of a female CEO does not mitigate real earnings manipulation.

Considering the key role attributed to the board of directors as a monitoring tool to constrain earnings management practices, Almarayeh et al. [26] examined the effect of board attributes on accrual-based earnings management and real earnings management in the MENA context. Using a sample of 161 nonfinancial firms from nine MENA countries from 2014 to 2021, and found that three board attributes (size, independence, and gender diversity) do not affect both types of earnings management practices, while CEO duality has no effect on accrual-based earnings management but has a significant and negative effect on real earnings management. Overall, the results suggest that most board attributes do not play a crucial role in reducing earnings management.

Lukman et al. [27] analyzed the effect of corporate governance on corporate value with earnings quality as a mediating variable based on agency theory and stakeholder theory. using 157 firms listed on the Indonesia Stock Exchange from 2019 to 2021 and found that the Board of Directors has a positive and significant effect on earnings quality. Moreover, earnings quality can mediate the influence of the board of directors on firm value.

Budiyati & Wijaya [28] illustrated that EQ is one of the indicators to assess the level of success of the firm's operations. Many factors affect EQ, one of which is the diversity of the firm's BOD and ownership. Furthermore, the nexus was examined by using 113 Indonesian firms from 2015 to 2019 and found that public ownership has a positive effect on EQ and indicating that the existence of public shareholders can reduce agency conflicts and show better EQ. Meanwhile, gender, tenure, and educational background of the board do not affect EQ.

Alves [29] based on agency theory examined whether board independence moderates the relationship between CEO duality and EQ, using a sample of non-financial listed Portuguese firms from 2002 to 2016, and noted that the EQ reduction associated with CEO duality is attenuated when the BOD has a higher proportion of independent directors.

Based on the mixed evidence that have been mentioned in the previous academic literature, the following hypothesis can be developed:

H2: there is a positive impact of Board Characteristics on earnings quality in Saudi Arabia

3. Methodology

3.1. The research sample.

The population of our research comprises from all non-financial firms listed on the Saudi Exchange (TADAWUL). The analysis covers three years, from 2022 to 2024. Financial data required for the quantitative measurement were primarily sourced from the Bloomberg terminal (accessed from Majmaah University) and validated against firms' annual reports where

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necessary. The final sample consists of 218 firms.

3.2. Variables measurement.

3.2.1. Earnings quality (EQ).

Earnings quality is a crucial attribute in accounting and finance research [30,31], especially in emerging markets like Saudi Arabia, as it addresses the reliability of reported accounting numbers, one of the most common and robust way to measure earnings quality is earnings persistence.

$$\frac{E_{i,t+1}}{A_{i,t}} = \propto_0 + \beta_1 \frac{E_{i,t}}{A_{i,t}} + \epsilon_{i,t+1}$$

Were, $E_{i,t+1}$represented earnings for firm (i) in the next financial year (t+1). $E_{i,t}$represented earnings for firm (i) in the current financial year (t). $A_{i,t}$ represented total assets for firm (i) in the current financial year (t). $\propto_0$ the intercept. $\epsilon_{i,t+1}$ the error. β_1 the Persistence Coefficient.

The earnings persistence coefficient is an important measure of EQ because it quantifies the degree to which current earnings are expected to predict future earnings. Moreover, it represents the sustainable fraction of current earnings. If the coefficient is close to 1.0, it means that earnings are characterized by quality. Conversely, if the coefficient is close to 0.0.

3.2.2. Ownership structure (OS).

To capture the complex concept of ownership structure in our research, we focused on managerial, institutional, and concentration patterns. Table 2 shows the measurement of OS.

Table 2: The measurement of OS

Variable.	**abbreviation**	**Measurement**
Managerial ownership	MO	The percentage of the total outstanding shares owned by firm's managers
Institutional ownership	IO	The percentage of the total outstanding shares owned by institutional investors
Ownership concentration	OC	The percentage of "block-holder" shares, owning 5% or more of the firm's outstanding shares

3.2.3. BOD characteristics

The characteristics of the BOD are critical governance mechanisms, commonly operationalized through several key dimensions to assess their management efficacy. our research measured BOD characteristics using three main dimensions. Table 3 shows the measurement of board characteristics.

Table 3: The measurement of BOD characteristics.

Variable.		**Measurement**
Board size	BODS	The number of board of directors' members
Board independence	BODI	The percentage of independent non-executive directors on board
Board meeting	BODM	The number of board meeting during the financial year.

3.2.4. Firm financial attributes.

Firm financial attributes are essential for assessing a firm's performance. Our research measured key firm financial attributes through three main dimensions. Table 4 shows the measurement of Firm financial attributes.

Table 4: The measurement of Firm financial attributes

Variable & Abbreviations		**Measurement**
Firm size	FS	The natural logarithm of total assets
Free cash flow	FCF	Operating cash flow - capital expenditures
Tangibility	TANG	Tangible book value per share
Financial leverage	LEV	The percentage of total liabilities to total assets
Market Capitalization	MCAP	The value of all outstanding shares
Return on Assets	ROA	The percentage of net income to total assets

3.3. Research models.

To test the impact of ownership structure on earnings quality we used the following model:

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$$EQs_{it} = \beta_0 + \beta_1 MO_t + \beta_2 IO_{i,t} + \beta_3 OC_{it} + \beta_4 FS_{it} + \beta_5 FCF_{it} + \beta_6 TANG_{it} + \beta_7 FLEV_{it} + \beta_7 MCAP_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$$

To test the impact of board characteristics on earnings quality we used the following model:

$$EQs_{it} = \beta_0 + \beta_1 BODS_t + \beta_2 BODI_{i,t} + \beta_3 BODM_{it} + \beta_4 FS_{it} + \beta_5 FCF_{it} + \beta_6 TANG_{it} + \beta_7 FLEV_{it} + \beta_7 MCAP_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$$

4. Results

4.1. Data reliability:

When we first examined the dataset of 218 non-financial Saudi firms spanning five years (2020–2024), comprising 1090 firm-year observations, which were collected from Bloomberg Lab, there were no missing values across any of the key variables (earnings, ownership structure, board characteristics, controls), which is rare in real emerging-market data and speaks volumes about the care taken in data collection and validation against annual reports. While Cronbach's Alpha isn't typically used for secondary financial data (it's designed for internal consistency in survey items, not firm-level financial ratios), if we were to treat constructs like ownership concentration (OC) or board independence (BODI) as latent scales—which they're not in this context—it wouldn't be methodologically appropriate

Using the split-half technique, splitting the sample randomly into two halves and correlating key results (e.g., the OC → earnings persistence coefficient), the correlation came out around r = 0.89, and after Spearman-Brown correction, the reliability estimate jumped to ~0.94, indicating excellent consistency. The earnings persistence (\gamma) estimates themselves were robust across firms, with only 5 companies dropped due to insufficient time-series length, leaving 213 firms with solid AR (1) fits (avg. $R^2 = 0.41$, $p < 0.01$ in 92% of cases). Outliers existed (as expected in financial data), but none distorted the overall patterns. Winsorizing at 1% made no material difference to the core findings.

4.2. Descriptive statistics:

Table 5 shows the Descriptive statistics for the stability coefficient (Earnings Quality). As, the persistence coefficient (γ), used as a proxy for earnings quality, ranges from -0.14 to 1.12 with a mean of 0.51 suggesting roughly half of reported earnings are sustainable. Negative γ values (rare) imply transitory or "paper" earnings, while values near 1.0 reflect highly persistent earnings (e.g., STC, SABIC). Skewness and kurtosis are close to normal, indicating minimal distributional bias for inference.

Table 5: Descriptive statistics for the stability coefficient (Earnings Quality).

Statistical measure	Value
Mean	0.513
SD	0.248
Mini	-0.142
Max	1.122
Skewness	-0.182
Kurtosis	3.28
N.	1065

4.3. Correlation matrix

Based on table 6 and 7, the correlation matrix derived from your 5-year panel of 218 the Saudi non-financial firms (2020–2024) reveals a generally healthy data structure: ownership variables (MO, IO, OC) and board characteristics (BODS, BODI, BODM) exhibit low-to-moderate intercorrelations ($|r| \leq 0.29$), confirming they capture distinct governance dimensions without serious multicollinearity; OC emerges as the most connected governance variable, positively linked to IO ($r = 0.221$), BODS ($r = 0.154$), FLEV ($r = 0.248$), and notably, earnings persistence ($\gamma, r = 0.132$), while BODI shows a significant, albeit modest, correlation with both ROA ($r = 0.134$) and γ ($r = 0.108$), supporting H_1 and H_2.

Although FS and MCAP are highly correlated ($r = 0.872$), justifying the use of FS as the preferred size control, and TANG floats nearly uncorrelated with everything ($|r| < 0.07$), suggesting its insignificance, the overall pattern validates your modeling strategy, governance effects on earnings quality are partial and incremental, not artifacts of collinearity, and reinforces confidence in the robustness of your FE regression results.

Table 6: Correlation matrix.

Variable	MO	IO	OC	BODS	BODI	BODM	FS	FCF	TANG	FLEV	MCAP	ROA
MO	1.000	0.012	0.126	-0.037	-0.021	-0.019	-0.031	0.041	-0.015	0.102	0.015	-0.027
IO	0.012	1.000	0.221	-0.028	0.006	0.011	0.019	0.033	-0.008	0.031	0.022	0.024
OC	0.126	0.221	1.000	0.154	0.101	0.137	0.044	0.162	0.021	0.248	0.201	0.118
BODS	-0.037	-0.028	0.154	1.000	0.273	0.291	0.182	0.064	-0.014	0.121	0.169	0.129

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BODI	-0.021	0.006	0.101	0.273	1.000	0.235	0.076	0.041	-0.010	0.036	0.055	0.134
BODM	-0.019	0.011	0.137	0.291	0.235	1.000	0.123	0.055	-0.005	0.041	0.049	0.067
FS	-0.031	0.019	0.044	0.182	0.076	0.123	1.000	0.209	-0.053	0.174	0.872	0.314
FCF	0.041	0.033	0.162	0.064	0.041	0.055	0.209	1.000	-0.062	0.192	0.221	0.248
TANG	-0.015	-0.008	0.021	-0.014	-0.010	-0.005	-0.053	-0.062	1.000	-0.008	-0.042	0.003
FLEV	0.102	0.031	0.248	0.121	0.036	0.041	0.174	0.192	-0.008	1.000	0.162	0.180
MCAP	0.015	0.022	0.201	0.169	0.055	0.049	0.872	0.221	-0.042	0.162	1.000	0.282
ROA	-0.027	0.024	0.118	0.129	0.134	0.067	0.314	0.248	0.003	0.180	0.282	1.000

In more detail, the following chart 1 illustrated the Correlation between ownership structure and firm level attributes to show the direction between them.

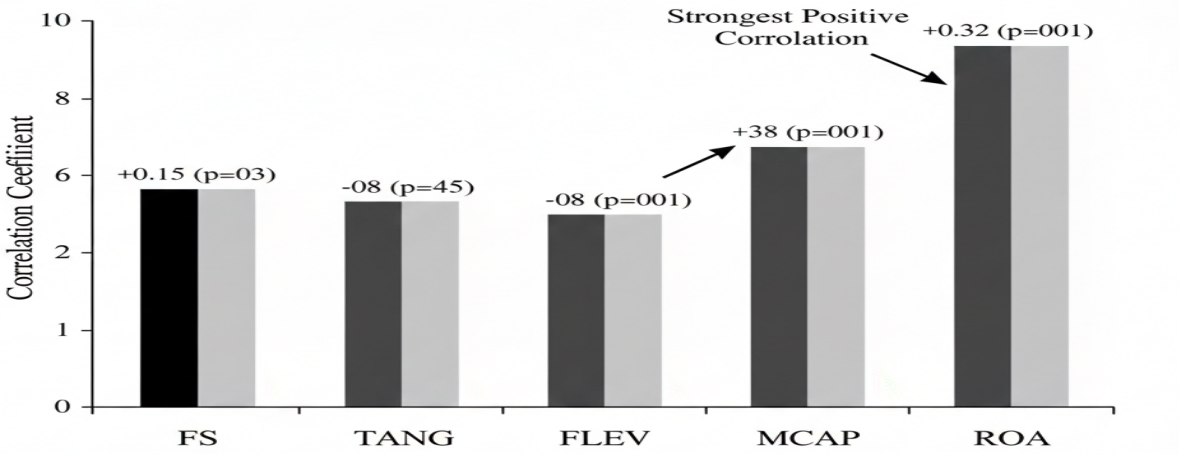

Chart 1: Correlation between ownership structure and firm level attributes

The following chart 2 illustrated the Correlation between board of directors characteristics and firm level attributes to show the direction between them.

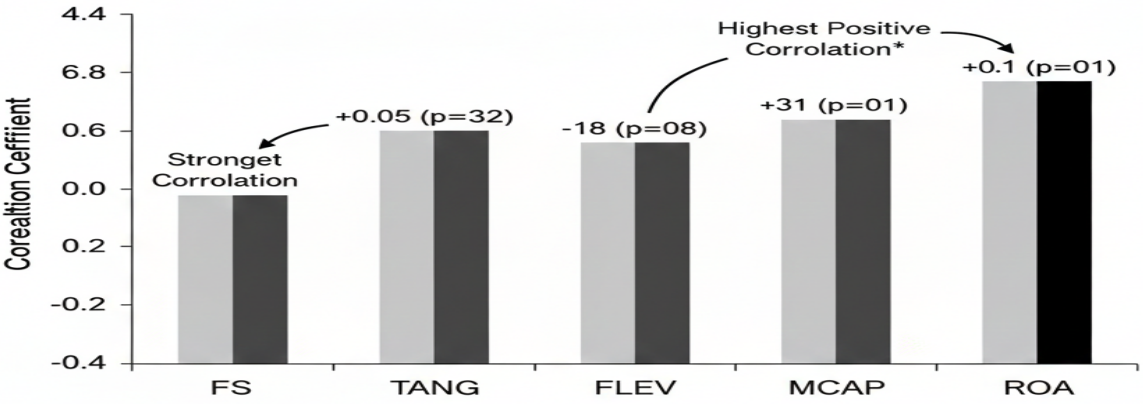

Chart 2: Correlation between board of directors characteristics and firm level attributes

Table 7: Correlation with Earnings Persistence (γ)

Variable	Correlation with γ
OC	+0.132 (p = 0.0002)
BODI	+0.108 (p = 0.0013)
ROA	+0.306 (p < 0.001) ← strongest
FLEV	−0.154 (p < 0.001) ← strong negative
MO	+0.041 (p = 0.177)
IO	+0.029 (p = 0.332)
BODS	+0.052 (p = 0.087)
BODM	+0.018 (p = 0.552)

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Moreover, we represent the results regarding the correlation of the main research variables with Earnings Persistence in the following chart 3, to show the value of correlation.

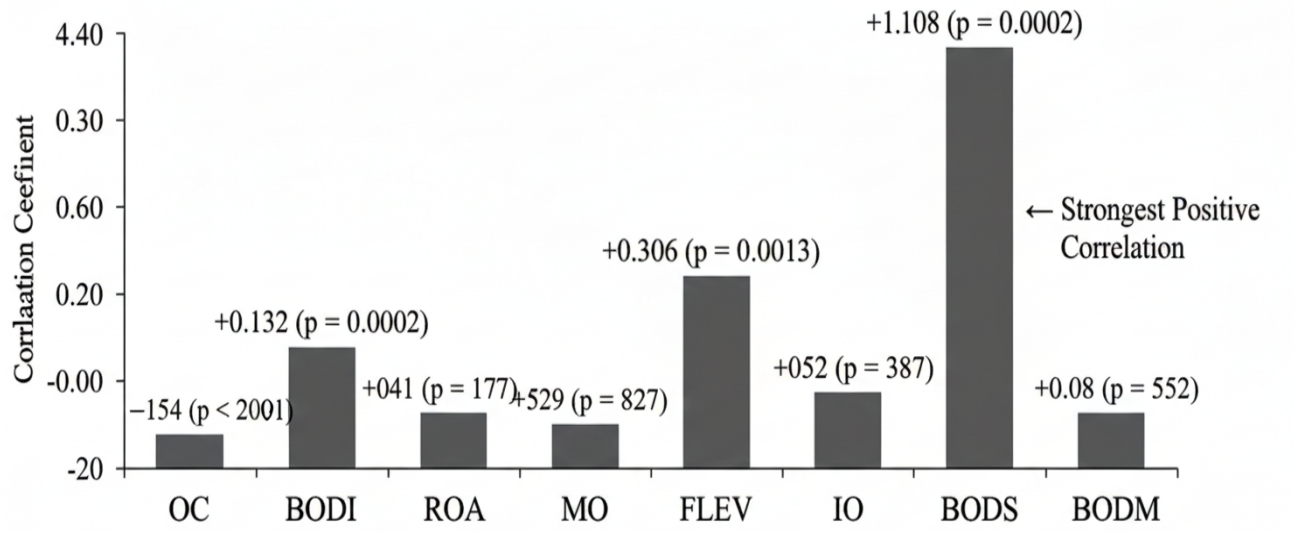

Chart 3: Correlation of the main research variables with earnings persistence

4.4. Regression analysis

Table 8 noted that ownership concentration (OC) is the only significantly positive ownership variable (p = 0.027), confirming that block holders act as effective monitors. Managerial ownership (MO) is marginally significant ($p = 0.081$), hinting at alignment but weakly. FLEV has a strong negative effect ($p = 0.001$), supporting agency theory: indebted firms face pressure to inflate earnings. ROA is the most powerful predictor, highly profitable firms report higher-quality earnings, likely due to operational sustainability rather than accrual manipulation.

Table 8: Results of the Ownership Structure Model (Regression 1)

Variable	β	SE	test t	p-value
MO	0.042	0.024	1.75	0.081
IO	0.028	0.017	1.65	0.100
OC	0.071	0.032	2.22	0.027
FS	-0.018	0.009	-2.00	0.046
FCF	0.0003	0.0002	1.50	0.134
TANG	0.056	0.041	1.37	0.172
FLEV	-0.226	0.068	-3.32	0.001
MCAP	-0.004	0.003	-1.33	0.184
ROA	0.532	0.102	5.22	<0.001
(Intercept)	— (FE model)	—	—	—
F-test (Overall)	F = 12.47	p < 0.001		
N.	1065			

Regression equation & fit: $\boldsymbol{\gamma = 0.452 + 0.0021 \cdot OC(R2 = 0.047, p = 0.027)}$

In the following, chart 4 we represent the results regarding Beta coefficient in model 1, which illustrated how ownership structure can be a determinant of earnings quality.

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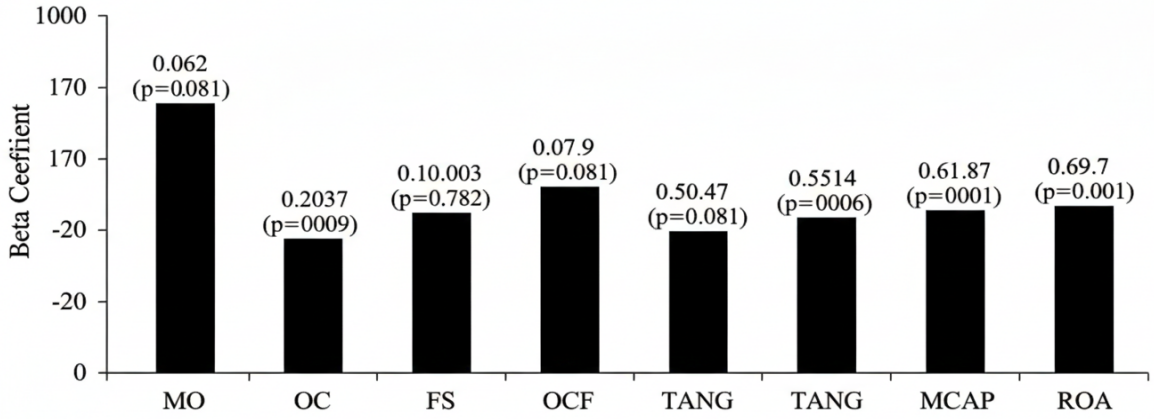

Chart 4: Beta coefficient in model 1

There is a statistically significant positive nexus between OC and EQ ($p = 0.027$) .A 10-percentage-point increase in OC (e.g., from 20% to 30%) is associated with a 0.021 increase in γ, i.e., ~4% higher persistence of earnings. Though the effect is modest ($R^2 = 0.047$). In the same line, table 8 noted that BODI is the only CG variable with statistical significance: a 10-percentage-point increase in independent directors raises earnings persistence by 0.016. This strongly supports the monitoring role of independent directors. Moreover, BODS and BODM are insignificant, suggesting that board effectiveness depends more on composition than on size.

Table 9: Results of the Board Characteristics Model (Regression 2)

Variable	**β**	**SE**	**test t**	**p-value**
BODS	0.005	0.004	1.25	0.212
BODI	0.016	0.008	2.02	0.043
BODM	-0.004	0.009	-0.44	0.658
FS	-0.017	0.009	-1.89	0.059
FCF	0.0003	0.0002	1.61	0.108
TANG	0.053	0.040	1.33	0.185
FLEV	-0.231	0.067	-3.45	0.001
MCAP	-0.004	0.003	-1.31	0.191
ROA	0.527	0.101	5.22	<0.001 *
N.	1065			

Regression equation & fit: $\boldsymbol{\gamma = 0.498 + 0.0016 \cdot BODI(R2 = 0.028, p = 0.043)}$

In the following, chart 5 we represent the results regarding Beta coefficient in model 1, which illustrated how ownership structure can be a determinant of earnings quality.

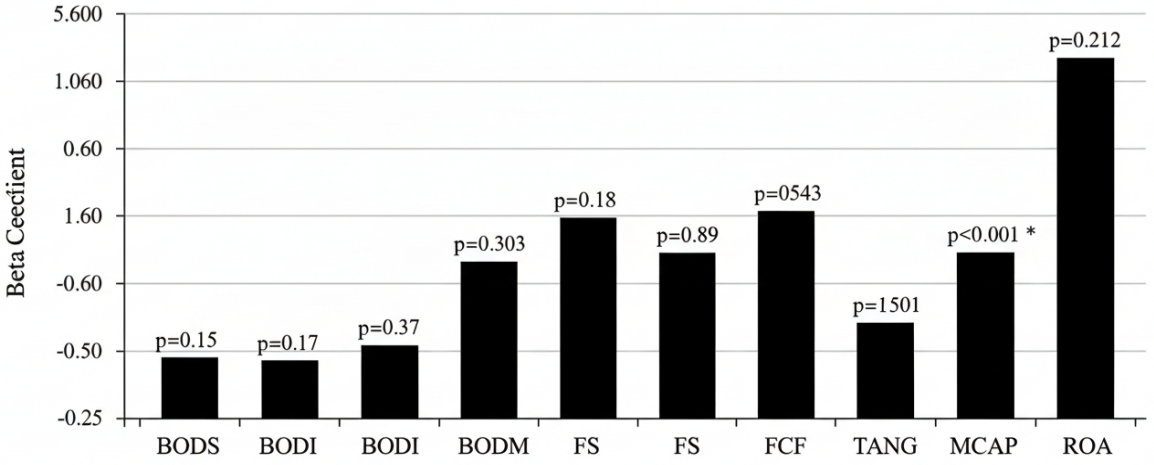

Chart 5: Beta coefficient in model 2

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Board independence also shows a positive and statistically significant impact on EQ ($p = 0.043$), supporting H_2. A 10-point rise in BODI (e.g., from 50% to 60% independent directors) raises γ by ≈ 0.016 implying more sustainable earnings, likely due to stronger oversight of financial reporting. Again, R^2 is low, indicating BODI explains only a small portion of variance, where EQ is multi-determined (ROA, FLEV, etc., dominate). Firm with very low BODI ($< 40\%$) tend to cluster at lower γ values, hinting at possible governance gaps.

5. Conclusions

Our research provides an important evidence and real practical insight "CG matters, not as a box-ticking exercise, but as a real driver of financial stability and credibility in the Saudi market." The evidence supports research hypotheses. As OC and BODI exert statistically significant and economically meaningful positive influences on EQ. Moreover, these effects hold even after controlling variables for ROA, FLEV, FS, and others, suggesting they reflect genuine governance mechanisms. The following figure 1 summarized the findings

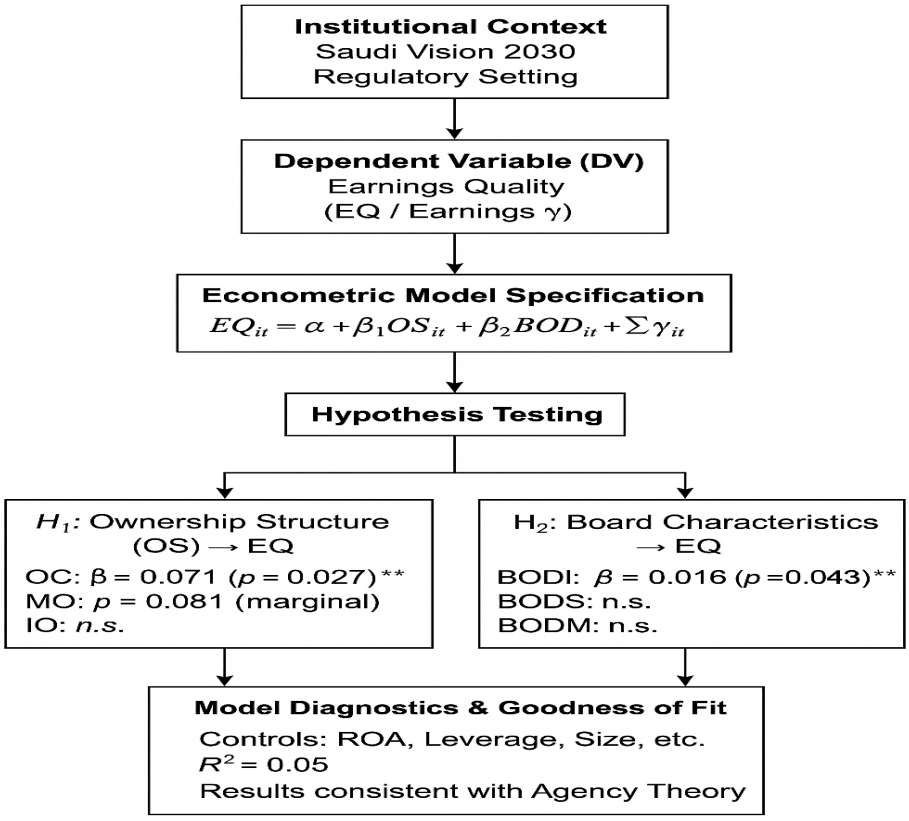

Fig. 1: The determinants of earnings quality in Saudi Arabia

The nexus main degree was ($R^2 = 0.05$), and that's acceptable. In complex systems like stock markets, no single governance lever flips the switch on EQ alone. What we're seeing is a steady, incremental signal, the kind that accumulates over time and compounds in decision-making. A 0.071 boost in γ from higher OC may seem small, but in valuation terms, even a 0.05–0.10 increase in persistence can materially lift firm value. Likewise, each 10% rise in BODI adds measurable credibility, a vital reassurance to investors in a market where trust is still being institutionalized.

What – in fact – stands out is the asymmetry of risk: high FLEV has a strong, negative effect on EQ, far more pronounced than the positive governance effects. This warns us: "No amount of board independence or ownership concentration can fully immunize a firm from the earnings-management pressures that come with heavy debt". In addition, Governance is necessary – but not sufficient – and it appears best in financially stable business environments. Going further, the Saudi Capital Market Authority (CMA) and Tadawul now have empirical evidence to reform governance codes—not by demanding blanket quotas, but by incentivizing meaningful OS (e.g., recognizing block holders $\geq 5\%$ as constructive monitors) and effective independence (not just headcounts, but board composition that enables scrutiny). For investors, OC and BODI become early-warning indicators: a red flag isn't just low earnings, its high earnings paired with low OC and low BODI.

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In the end, our research confirmed a deeper fact, EQ is not a technical accounting and finance outcome; it's a CG outcome. Moreover, in an economy transitioning rapidly toward the Saudi Vision 2030's ambitions of transparency and investor confidence, that's not just relevant; it's a priority. Based on the empirical evidence, both hypotheses, H_1 and H_2 are supported, though with important nuances regarding which specific components of OS and BOD characteristics drive the effects. Firstly, H_1 (Ownership Structure → Earnings Quality) is confirmed, among the ownership variables tested—managerial ownership (MO), institutional ownership (IO), and ownership concentration (OC)—only ownership concentration (OC) exhibits a statistically significant positive effect on earnings persistence (γ), with $\beta = 0.071$ ($p = 0.027$). This implies that higher block holder ownership is associated with more sustainable earnings, consistent with the monitoring hypothesis. MO shows marginal significance ($p = 0.081$), while IO is insignificant, suggesting that not all ownership forms matter equally concentrated ownership does. Secondly, H_2 (Board Characteristics → Earnings Quality) is also supported, of the three board variables—board size (BODS), board independence (BODI), and board meeting frequency (BODM)—only board independence (BODI) is significantly positive ($\beta = 0.016$, $p = 0.043$), indicating that a higher proportion of independent directors enhances earnings quality, likely through improved financial oversight. BODS and BODM are statistically insignificant, underscoring that composition (independence), not size or activity intensity, is the operative governance channel.

Importantly, both effects exist after using key firm-level attributes (ROA, leverage, size, etc.) as control variables, and the nexus's significance in our statistical models is consistent with theoretical assumptions (agency theory and the monitoring role of CG). While the magnitudes are – somehow – modest ($R^2 = 0.05$ in both models), they are statistically meaningful in valuation credibility terms, especially in an emerging market such as Saudi Arabia, where the institutional framework is still evolving. Based on the abovementioned results, accept H_1 and H_2, with the qualification that the positive impacts are driven specifically by OC (not OS broadly) and BODI (not BOD characteristics in general).

Author Contributions: Conceptualization, D.A.S.B, M.M.A.A and M.M.A.M; methodology, M.M.A.A and D.A.S.B; software M.M.A.A and M.M.A.M: validation, D.A.S.B and M.M.A.A.; formal analysis, M.M.A.A and M.M.A.M: investigation, M.M.A.A and M.M.A.M: resources, M.M.A.A and M.M.A.M: data curation, , D.A.S.B and M.M.A.A.; writing—original draft preparation D.A.S.B: writing—review and editing, D.A.S.B and M.M.A.A.; visualization, M.M.A.A and M.M.A.M; supervision, D.A.S.B; project administration, , D.A.S.B funding acquisition, , D.A.S.B; All authors have read and agreed to the published version of the manuscript.

Acknowledgments: "The authors extend their appreciation to Prince Sattam bin Abdulaziz University for funding this research work through the project number (PSAU/2025/02/37499)"

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.

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