

DO CEO ATTRIBUTES, AUDIT QUALITY, AND GENDER DIVERSITY INFLUENCE EARNINGS MANAGEMENT? EVIDENCE FROM PAKISTAN

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ABSTRACT

Purpose: Earnings management remains a critical concern for investors and policymakers, particularly in emerging economies. This study examines the influence of CEO attributes, audit quality, and gender diversity on earnings management in Pakistan, with a focus on their moderating roles.

Design/Methodology/Approach: The study analyzes a sample of 150 non-financial firms listed on the Pakistan Stock Exchange (PSE) over the period 2016–2021, comprising 750 firm-year observations. Robust econometric techniques are employed to test the impact of CEO attributes, female board representation, and audit quality on earnings management. Further, the study examines the moderating effects of CEO tenure, CEO experience, and audit quality on the relationship between female directors and earnings management.

Findings: The results reveal that female board representation is positively associated with earnings management, which contrasts with prior studies that generally report a negative relationship. Moreover, the moderating effects of CEO tenure, CEO experience, and audit quality provide unique insights into how leadership characteristics and audit mechanisms shape the relationship between gender diversity and earnings management.

Originality: This study is the first to explore the moderating role of CEO attributes and audit quality alongside gender diversity in the Pakistani context. The use of a large dataset and robust methodological approach strengthens the reliability of the findings, offering novel contributions to the literature on corporate governance and earnings management.

Research Implications: The findings carry important implications for managers, investors, policymakers, regulators, and academic researchers. They highlight key governance mechanisms that influence earnings management practices, providing insights relevant to both emerging and developed economies. For practitioners, this study identifies critical factors such as CEO characteristics and board gender composition that affect earnings quality. For scholars and policymakers, it offers a comprehensive framework for understanding the dynamics of governance and earnings management, guiding future research and regulatory reforms.

Keywords: CEO attributes, audit quality, gender diversity, earnings management.

1 | INTRODUCTION

Earnings management is a broad term that refers to accounting decisions that significantly affect the results of financial statements. Financial statements provide information that benefits not only internal but also external stakeholders of a company. Emerging markets have received increasing attention due to their restructured market growth and significant contribution to the global economy (Bao & Lewellyn, 2017). Claessens, Djankov, and Lang (2000) found that firms in emerging countries engage in more earnings management compared to those in developed countries. Earnings management influences the decisions of external investors; therefore, they require precise and reliable information regarding earnings management (Leuz & Wysocki, 2016).

To improve corporate governance and decision-making within firms, women are globally considered a source of enhanced control and accounting transparency (Nguyen et al., 2020; Adams & Ferreira, 2009; Cumming et al., 2015). In addition, female directors often demonstrate characteristics that differ from those of their male counterparts (Srinidhi et al., 2011). Audit quality is also an important factor in organizations, as auditors play a critical role in providing assurance about the accuracy of accounting figures (Palmrose et al., 2004; Al-Shaer et al., 2017). Moreover, a CEO's financial knowledge and experience are vital in ensuring the reliability of financial statements, as they enable CEOs to better understand accounting issues and exercise sound financial and accounting judgment (Gounopoulos & Pham, 2018).

The first objective of this study is to investigate how CEO tenure, CEO experience, gender diversity, and audit quality affect earnings management in Pakistan. The second objective is to examine the moderating effects of CEO tenure, CEO experience, and audit quality on the relationship between female directors and earnings management. This research differs from prior studies in two key ways. First, it investigates the moderating effects of three variables CEO tenure, CEO experience, and audit quality on the relationship between female directors and earnings management. These moderators provide unique insights, as they have not previously been examined in the Pakistani context. To the best of our knowledge, no other study in Pakistan has examined these three moderating variables.

Prior research on earnings management in Pakistan has predominantly focused on board structure and ownership concentration, while limited attention has been given to CEO specific attributes such as tenure and experience (Shah et al., 2009; Yasser et al., 2011). Evidence from international studies suggests that CEO characteristics can significantly constrain or facilitate earnings manipulation (García-Meca & Sánchez-Ballesta, 2009), yet this dimension remains underexplored in emerging economies like Pakistan. Similarly, the role of gender diversity on boards has yielded mixed results: some studies find that female directors improve earnings quality (Srinidhi et al., 2011), whereas others report ambiguous or even positive associations with earnings management (Arun et al., 2015). Regarding audit quality, recent evidence shows its mitigating effect varies by context most notably, audit quality weakens the relationship between financial distress and earnings management in Pakistani firms (Kazmi et al., 2024) and plays a critical role in reducing default risk and earnings manipulation (Rahman, Yaqoob, & Farhan, 2024). Furthermore, most existing studies tend to examine these governance mechanisms in isolation, ignoring their potential interactive and moderating effects (Martínez-Ferrero & García-Sánchez, 2017). In addition, research conducted in Pakistan has often relied on relatively small samples and basic regression methods, limiting the reliability and applicability of findings. These gaps show the need for a comprehensive study that jointly examines CEO attributes, gender

diversity, and audit quality, leveraging a large dataset and robust econometric techniques to generate more reliable evidence in the Pakistani context.

The remainder of the research is structured as follows. Section 2 describes the reviews of previous literature and discusses it, also describes the theoretical framework, and develops hypotheses of this research. In the third section, the research methodology is discussed, presenting their econometric models, the measurement of variables, and the data used in the research. The fourth section discusses the findings and results of this study. Lastly, Section 5 presents some suggestions for further research and concludes the study.

2 | LITERATURE REVIEW

2.1. Theoretical background

Agency theory is the main theoretical background of this study. The agency theory explains the connection between principal and agent and how conflicts of interest arise between them (Jensen & Meckling, 1976). Further, this philosophy elaborates on two types of agency problems. In type one, managers may have different objectives than the owner's objectives, and this may lead managers to act in their own interest. Type two of the agency problem is between creditors and owners; the creditors are not willing to invest in high-risk projects, which may decrease the company's profitability level (Myers, 2001). One example of this kind of action is also engaging in earnings management. Several studies have reported that earnings numbers are a tool to mostly measure the good and poor performance of the organization by financial statement users, i.e., regulators, creditors, suppliers, employees, and customers, thus assisting the decision-making process based on these numbers (Healy & Wahlen, 1999; Prior et al., 2008). Moreover, management has discretion over accounting figures, which can be used to affect earnings figures to achieve certain organizational objectives (Kumala & Siregar, 2019).

2.2. Hypothesis development

2.2.1 Gender diversity and earnings management

Female directors on corporate boards can play an important role in enhancing the quality of financial reporting (Dani et al., 2019; Maglio et al., 2020). They are often viewed as more ethical, responsible, and committed to organizational performance, while being less likely to engage in unethical practices such as fraud or earnings manipulation compared to men (Nguyen et al., 2008; Orazalin, 2019; Krishnan & Parsons, 2008). Prior research suggests that female directors tend to be risk-averse and more conservative in decision-making, whereas male directors are more inclined to take risks (Carter et al., 2017). Moreover, women on boards are often more engaged in monitoring organizational activities, while men may place greater emphasis on financial outcomes (Erhardt et al., 2003; Kao et al., 2020). Several studies further recommend that the presence of female directors can improve earnings quality by reducing managerial opportunism (Barua et al., 2010).

However, the existing literature on the relationship between female directors and earnings management presents mixed evidence (Sial et al., 2019). Some studies report no significant relationship between gender diversity and earnings management (Ye et al., 2010; Abdullah & Ismail, 2016; Arioglu, 2020). In contrast,

others document a negative association, suggesting that female directors constrain earnings management (Gull et al., 2018; Gaviious et al., 2012; Harakeh et al., 2019; Triki & Damak, 2018; Alqatamin, 2021; Handoko et al., 2022; Hussain et al., 2023). Recent findings also highlight contextual differences, showing that the effect of female directors may vary across emerging and developed economies (Al-Absy et al., 2021; Farag & Mallin, 2022; Kyaw et al., 2023). Conversely, some evidence indicates that gender diversity may even increase earnings manipulation under certain conditions (Krishnan & Parsons, 2008; El-Deeb & Ramadan, 2024).

Hence, based on the above discussion and mixed empirical evidence, we formulate our first hypothesis as follows:

H1: Gender diversity has a positive association with EM.

2.2.2 CEO tenure and earnings management

CEO tenure refers to the period during which an individual serves as the central decision-maker and holds the top executive position in an organization (Finkelstein et al., 2009; Hambrick & Fukutomi, 1991). CEO tenure is often viewed as an indicator of CEO power, as longer tenure generally increases a CEO's authority and control within the firm (Shen, 2003). Prior literature shows considerable concern regarding the connection between CEO tenure and earnings management (Qawasmeh & Azzam, 2020; Oyer, 2008; Axelson & Bond, 2009). Newly appointed CEOs often rely on real and accrual-based earnings management to establish credibility and improve reported performance, especially in the first two to three years of their tenure (Ali & Zhang, 2015; Buyl et al., 2019). However, other studies suggest that CEOs may manipulate earnings toward the end of their tenure in an attempt to maintain or secure their reputation (Verkerk, 2012).

Evidence on the influence of CEO tenure on earnings management is mixed. Some studies find that at the beginning of their service, CEOs may avoid manipulation to protect their reputation (Oyer, 2008; Axelson & Bond, 2009), while others find significant positive associations between longer CEO tenure and earnings manipulation (Ali & Zhang, 2014; Cho et al., 2019). More recent studies have also shown that the relationship may vary across contexts, with CEO tenure constraining opportunistic behavior in some cases while exacerbating it in others (Huang et al., 2021; Liu & Tsai, 2022; Chen et al., 2023). These mixed findings highlight the complexity of the tenure–earnings management link and the importance of considering interaction effects with other governance mechanisms, such as gender diversity.

If a CEO, particularly a female CEO, holds a longer tenure in the same organization, they may eventually exercise greater discretion over financial reporting, which could increase the likelihood of manipulation. However, tenure may also enhance monitoring ability and reduce opportunistic practices. Thus, the moderating role of CEO tenure in the gender diversity earnings management relationship remains an open question.

Based on the above discussion, we propose the following hypotheses:

H2: CEO tenure has a negative association with earnings management.

H3: CEO tenure moderates the relationship between gender diversity and earnings management in such a way that higher levels of CEO tenure strengthen this relationship, while lower levels of CEO tenure weaken it.

2.2.3 CEO experience and earnings management:

Prior research has employed various proxies to measure CEO experience, such as educational background and financial expertise, to examine its impact on earnings management (Qawasmeh & Azzam, 2020; Hu et al., 2015). Xie et al. (2003) found that CEOs with financial and managerial expertise were negatively associated with earnings management. In contrast, Qi et al. (2018), using educational attainment as a proxy for experience, reported that CEOs holding finance degrees diminished the quality of financial reporting. Schrand and Zechman (2012) also noted that CEOs with more than three years of experience tend to be more risk-taking than their less experienced peers. Experienced CEOs often possess stronger financial skills for evaluating statements and broader social capital (Gounopoulos & Pham, 2018).

Empirical findings remain inconsistent. Some studies report a positive relationship between CEO experience and earnings management (Zouari et al., 2012), while others find a negative association (Troy et al., 2011; Qi et al., 2018; Hashim & Devi, 2008; Liu & Lu, 2007). Recent studies continue to provide divergent evidence. For instance, a 2023 study examining CEO attributes in Nigeria found that CEO experience helps curb both accrual and real earnings manipulation (Shittu et al., 2023). In contrast, a 2025 study of Chinese firms found that longer-serving CEOs are more likely to engage in earnings management (Sitao Chen et al., 2025). Additionally, Indonesian data from 2015–2021 revealed that CEOs with financial and accounting experience are more likely to employ accrual rather than real earnings management (Putra & Setiawan, 2024).

Based on these mixed outcomes, we hypothesize:

H4: CEO experience has a negative association with earnings management.

H5: CEO experience moderates the relationship between gender diversity and earnings management in such a way that higher levels of CEO experience strengthen this association, while lower levels weaken it.

2.2.4 Audit quality and earnings management:

Based on agency theory, audit quality serves as a key monitoring mechanism in firms where ownership and control are separated (Jensen & Meckling, 1976). High-quality auditors, particularly Big 4 audit firms, have the specialized expertise and reputation to better constrain earnings management (Chi et al., 2011; Wijaya, 2020). While some studies report no significant relationship between audit quality and earnings management (Maijor & Vanstraelen, 2006; Sun et al., 2011; Habbash, 2010), others find a positive association possibly reflecting collusion or audit-client complexity (Kim & Park, 2014; Houque et al., 2017; Frankel et al., 2002). Nonetheless, multiple studies affirm that Big 4 auditors effectively reduce earnings manipulation (Van Tendeloo & Vanstraelen, 2008; Inaam & Khamoussi, 2016; Alsmairat et al., 2018).

Recent evidence from emerging markets further supports these findings. Le and Moore (2023) report that higher audit quality, particularly via Big 4 engagement associated with reduced discretionary accruals in Vietnamese firms. Similarly, a study of rural and community banks in Ghana finds that audit specialization significantly lowers earnings management (Emerald Insight, 2023). Moreover, research encompassing Dubai's banking sector indicates that audit committee independence and auditor reputation—not merely Big 4 status shape the degree of earnings manipulation (Jameel et al., 2024).

Given this evidence, we propose:

H6: Audit quality is negatively associated with earnings management.

H7: Audit quality moderates the relationship between gender diversity and earnings management in such a way that higher levels of audit quality strengthen this relationship, while lower levels weaken it.

3 | DATA AND METHODOLOGY

3.1 Data

The study covers the period of 2016 to 2021 of 150 non-financial firms of Pakistan stock exchange (PSE) with a sample of 750 observations. Firms from the financial institutions are omitted because of differences in regulations and laws requirements (Anderson and Reeb, 2003). The firms belong to ten non-financial industries of the Pakistan Stock Exchange are, Automobile parts & accessories, cements, chemicals, engineering, fertilizer, food & personal care products, pharmaceuticals, sugar & allied, and technology & communication. From the annual reports and company's websites, all the data set was collected. In addition, for balanced panel dataset only those firms were taken which have complete financial information over these period. Earnings management is the dependent variable of this study and measure by three models of earnings management. The independent variables are CEO tenure, CEO experience, audit quality, and gender diversity. However, leverage, firm age, firm size and growth are the control variables of this study. Table 1 reported the measurement of variable.

Table 1

Variables	Symbol	Measurement
Dependent variable		
Discretionary accruals	DACC_JM	Jones model of discretionary accruals model
	DACC_MJM	modified Jones model of discretionary accruals model
	DACC_PM	performance matched discretionary accruals model
Independent variable		
CEO Tenure	CEOTEN	The number of years of service as the CEO.
CEO Experience	CEOEXP	The number of executive positions that the CEO had held before becoming the CEO.
Gender Diversity	GDIV	The ratio of female director to total board of directors
Audit Quality	AUDQ	Dummy variable with the value of "1" if audited by Big 4 and "0" otherwise
Control variable		
Firm Age	FAGE	The number of years since the formation of the firm.
Firm Size	FSIZE	The natural logarithm of total assets
Leverage	LEV	The ratio of total liabilities to total assets of the firm
Firm growth	GROWTH	Total asset growth ratio of a firm over the year

3.2 Earnings management

The earning management is measured by three models, 1) DACC_JM, 2) DACC_MJM, and 3) DACC_PM. In these three models the earnings management is indicate by absolute value of discretionary accruals. For measurement of earnings management many studies used absolute value of discretionary accruals (Dechow et al., 2010). The discretionary accruals were measured in two steps through the Jones model (1991). In the first step regression analysis will conduct between REV_{it} , PPE_{it} and TA_t . With the help of this regression, we find our OLS estimates of α_0 , α_1 , α_2 , and α_3 . After obtaining these estimates, DA_{it} , is calculate through subtracting NDA_i from TA_t .

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it}} + \alpha_2 \frac{\Delta REV_{it}}{TA_{it-1}} + \alpha_3 \frac{PPE_{it}}{TA_{it-1}} + \varepsilon_{it} \quad (I)$$

Where:

TAC_{it} : the total accruals; TA_{it-1} : total assets; ΔREV_{it} : the change in revenue and PPE_{it} : the gross property plant and equipment.

Modified jones model is another measurement of earnings management. By adding change in account receivables (ΔREC_{it}) in model I. The model (II) is formulated as follows:

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}} + \alpha_3 \frac{PPE_{it}}{TA_{it-1}} + \varepsilon_{it} \quad (II)$$

Furthermore, performance matched discretionary accruals model is the third model of this study. In which firm performance measurement variable, return on assets (ROA) is added in the modified Jones model. The model (III) is as follows.

$$\frac{TAC_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}} + \alpha_3 \frac{PPE_{it}}{TA_{it-1}} + \alpha_4 ROA + \varepsilon_{it} \quad (III)$$

3.3 Estimation model

The formation of baseline model of this research are as follows:

$$DA_JM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 GDIV_{it} + \alpha_5 AUDQ_{it} + \alpha_6 FAGE_{it} + \alpha_7 FSIZE_{it} + \alpha_8 LEV_{it} + \alpha_9 GROWTH_{it} + \varepsilon_{it} \quad 1$$

$$DA_MJM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 GDIV_{it} + \alpha_5 AUDQ_{it} + \alpha_6 FAGE_{it} + \alpha_7 FSIZE_{it} + \alpha_8 LEV_{it} + \alpha_9 GROWTH_{it} + \varepsilon_{it} \quad 2$$

$$DA_PM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 GDIV_{it} + \alpha_5 AUDQ_{it} + \alpha_6 FAGE_{it} + \alpha_7 FSIZE_{it} + \alpha_8 LEV_{it} + \alpha_9 GROWTH + \varepsilon_{it} \quad 3$$

However, the moderating influence of CEO tenure on the connection between gender diversity and earnings management was examined using the following models:

$$DA_JM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOTEN * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_MJM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOTEN * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_PM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOTEN * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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Second, moderating impact of CEO experience on the connection between gender diversity and earnings management was examined using the following equations:

$$DA_JM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOEXP * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_MJM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOEXP * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_PM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 CEOEXP * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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Third, the moderating impact of audit quality on the connection between gender diversity and earnings management was examined using the following equations:

$$DA_JM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 AUDQ * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_MJM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 AUDQ * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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$$DA_PM_{it} = \alpha_1 + \alpha_2 CEOTEN_{it} + \alpha_3 CEOEXP_{it} + \alpha_4 AUDQ * GDIV_{it} + \alpha_5 GDIV_{it} + \alpha_6 AUDQ_{it} + \alpha_7 FAGE_{it} + \alpha_8 FSIZE_{it} + \alpha_9 LEV_{it} + \alpha_{10} GROWTH_{it} + \varepsilon_{it}$$

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4 | RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 2 presented the descriptive statistics of this study. The mean values of discretionary accruals from three models are 2.6083 (standard deviation 14.4438), 2.6084 (standard deviation 14.4420), and 2.6145 (standard deviation 14.4506) respectively. The mean values of 0.427, 0.427 and 0.427 are higher than our mean values (Hashmi et al., 2018). Further, the mean value of CEO tenure is 9.40, which suggests that the CEOs have been holding their positions on average 9 years. This mean value is quite higher as compare to other counties

because Pakistan is a developing country and their CEOs mostly hold same position more than 3 years (Qawasmeh et al., 2020). Moreover, CEO experience mean value is 0.7600 (S.D. of 0.4273), which implies that on average 76% CEOs of Pakistan are experienced. In addition, the mean value of firm age is 37.19, which infers that the average firm is on average 37 years old. Leverage mean value is 0.61, which suggests that the average firm has 61% of debt financing in its capital structure. The mean value of audit quality is 0.49 that's our dummy variable, which suggests that 49% of companies audit with big 4 audit firms. Gender diversity average mean value is 0.12, which implies that on average only 12% are female in board of directors. The mean value is lower as compared to mean value of 25% reported by (Terjesen & Sealy, 2016). The firm size mean value is 6.83, which infers that the average company size is approximately Rs6.83bn in Pakistan. Shapiro-Wilk statistics presented in Table 2 are statistically significant, which recommended that our all research variables are not normally distributed in our study. The total 750 observations are used in this study.

Table 2: Descriptive Statistics

	Mean	Std. Deviation	Minimum	Maximum	Shapiro-Wilk statistic
DACC_JM	2.6083	14.4438	0.0082	251.4150	14.818***
DACC_MJM	2.6084	14.4420	0.0006	251.3626	14.818***
DACC_PM	2.6145	14.4506	0.0085	251.3482	14.814***
CEOTEN	9.4044	8.6717	1	44	10.829***
CEOEXP	0.7600	0.4273	0	1	1.746**
GDIV	0.1232	0.1236	0	1	9.791***
AUDQ	0.4911	0.5001	0	1	-6.388
FAGE	37.1933	16.3020	0	77	6.063***
FSIZE	6.8373	0.7225	4.2261	8.9242	5.797***
LEV	0.6121	1.0466	0.0006	14.9223	14.996***
GROWTH	1.7192	6.0865	0	106.9147	15.357***

4.2 Pearson correlations analysis

The coefficients of correlation is presented in Table 3. The findings show that CEOTEN and GDIV have a positive and statistically significant correlation ($r = 0.10$). However, CEOTEN is negative and statistically significant correlated with LVR ($r = -0.07$). Moreover, results also recommended that the correlation between CEOEXP and AUDQ ($r = 0.12$), FSIZE ($r = 0.07$) is a statistically significant and positive. In addition, GDIV is negative and statistically significantly correlated with AUDQ ($r = -0.13$) and FSIZE ($r = -0.09$), but significantly positive with LEV (0.10). Likewise, there is also a positive and statistically significant correlation between AUDQ and FSIZE (0.26), however the correlation between AUDQ and LEV (-0.12) is a negative and statistically significant with each other. In addition, there is a statistically significant and negative correlation between FAGE and GROWTH ($r = -0.07$), which infers that huge companies experience fast growth, but company's growth reduces with the age of a company. However, FSIZE is significantly negatively correlated with LEV (-0.29) infers that large companies are not willing to use its high proportion of debt financing. For checking the multicollinearity problem in the model, we run first correlation analysis and then regression, as our all correlations are lesser than 0.80 (Baccouche et al., 2013), so it implies that there is no issue about multicollinearity in our study.

4.3 Panel regression results

Table 4 presented the outcomes of baseline Models 1–4. These results will help in testing the hypothesis H1, H2, H3 and H4. The models of panel data has developed three measures of earnings management. The wald-statistics of all the models 1-4 are statistically significant at the 1% and 5% level. This recommended that all the models are statistically significant and there are no presence of heteroscedasticity problem, which violate the statistical assumptions.

Table 3: Pairwise Correlations

	DACC_JM	DACC_MJM	DACC_PM	CEOTEN	CEOEXP	GDIV	AUDQ	FAGE	FSIZE	LEV	GROWTH
DACC_JM	1										
DACC_MJM	0.99***	1									
DACC_PM	0.99***	0.99***	1								
CEOTEN	-0.05	-0.05	-0.05	1							
CEOEXP	-0.06*	-0.06*	-0.06	-0.03	1						
GDIV	-0.03	-0.03	-0.03	0.10***	0.008	1					
AUDQ	-0.12***	-0.12***	-0.12***	0.006	0.12***	-	1				
						0.13***					
FAGE	-0.07**	-0.07**	-0.07**	0.01	-0.05	-0.0006	-0.01	1			
FSIZE	-0.35***	-0.35***	-0.35***	0.02	0.07**	-	0.26***	0.02	1		
						0.09***					
LEV	0.25***	0.25***	0.25***	-0.07**	-0.001	0.10***	-	-0.02	-	1	
							0.12***		0.29***		
GROWTH	-0.004	-0.005	-0.005	-0.05	-0.05	-0.03	-0.008	-	0.02	-	1
								0.07**		0.01	

Table 4: Panel Regression Results – Baseline Models

[illegible]

4.4 Results

4.4.1. Baseline regression results

The results in Table 4 recommend that CEO tenure (CEOTEN) has a negative and statistically significant at the 1% level in all, Model 1a ($\beta = 0.009$, $p < 0.01$), Model 1b ($\beta = 0.007$, $p < 0.01$) and Model 1c ($\beta = 0.007$, $p < 0.01$). The finding is accordant with H1. This implies that when CEOs become older or get experience than they start more manipulation in organization than its' early year of service. This finding is consistent with the existing literature (Ali and Zhang, 2014; Hu et al., 2015). However, it is inconsistent with (Cho et al., 2019), as they found a positive with significant relationship between earnings management and CEOs' tenure. Base on this results our hypothesis (H1) is accepted.

Moreover, the outcomes of Table 4 also recommended that CEO experience (CEOEXP) have a positive and statistically insignificant association with earnings quality in Model 2a ($\beta = 0.035$, $p > 0.10$), Model, 2b ($\beta = 0.034$, $p > 0.10$) and Model 2c ($\beta = 0.039$, $p > 0.10$). This implies that experienced CEOs enhance the earnings management as compare to non-experience CEOs. The finding is consistent with (Kouaib and Jarboui, 2016; yahaya, 2022; Yang, 2010; and Baatwah et al., 2015). This finding is supported our hypothesis (H2). Base on this results our hypothesis (H2) is accepted.

Furthermore, the outcomes of Table 4 suggest that gender diversity (GDIV) has a positive and statistically significant relationship in all Models, 3a ($\beta = 0.285$, $p < 0.01$), Model 3b ($\beta = 0.239$, $p < 0.05$) and Model 3c ($\beta = 0.275$, $p < 0.01$). This results demonstrate that the presence of female directors on boards of directors can increase earnings management. This result is consistent with (Carter et al., 2003; Gul et al., 2011; Kirsch, 2018; and Nguyen et al., 2020). However, this result is inconsistent with (Zalata et al., 2021), their findings suggest that no gender difference can improve earnings management until the female director has financial background. Base on this result we accept our third hypothesis (H3).

However, the results from table 4 also recommended that audit quality (AUDQ) has a negative and statistically significant at the 1% level in all Model 4a ($\beta = 0.150$, $p < 0.01$), Model 4b ($\beta = 0.149$, $p < 0.01$) and Model 4c ($\beta = 0.178$, $p < 0.01$). This implies that only audit quality can't be handle all kinds of earnings management and can be decrease earnings management. This results are consistent with (Cohen et al., 2008). The finding is support our hypothesis H4. Based on these findings our hypothesis (H4) is accepted.

4.4.2. Interaction model results

Table 5 present the results of panel regression from the interaction model. Consistent with hypothesis (H5), the outcomes of Table 5 show that CEO tenure moderates the relationship between gender diversity and EM. The result from the coefficients of GDIV*CEOTEN in model 5a ($\beta = -0.023$, $p < 0.01$), model 5b ($\beta = -0.022$, $p < 0.01$) and model 5c ($\beta = -0.020$, $p < 0.01$). Furthermore, the outcomes of Models 6a, 6b and 6c in Table 5 will be used to justify the sixth hypothesis (H6). The results suggest that CEO experience moderates the relationship between female board of directors and EM. The result from the coefficients of GDIV*CEOEXP in model 6a ($b = -0.596$, $p < 0.01$), model 6b ($b = -0.567$, $p < 0.01$) and model 6c ($b = -0.430$, $p < 0.05$). This is a unique findings which implies that if CEO is a female and hold longer period of time in same position in a firm than they start more manipulation. It is accordant with agency theory. Therefore, we can support our fifth and sixth hypothesis. Based on these results we accepted H5 and H6. Furthermore, the outcomes in Table 5 also show that the coefficients of GDIV*AUDQ are negative and statistically significant in Models 7a ($b = -0.804$, $p <$

0.01), model 7b ($b = -0.724$, $p < 0.01$) and Model 7c ($b = -0.664$, $p < 0.01$). This implies that audit quality leads to low accrual earnings management that moderates the relationship between female board of directors and earnings management. Therefore, we find support for the seventh hypothesis (H7) and based on this result we accepted H7.

Table 5: Panel Regression Results – Interaction Models

[illegible]

5 | CONCLUSION

The objective of this research is to empirically examine the influence of CEO attributes, audit quality, and gender diversity on earnings management using a dataset of 150 non-financial firms over the period 2016–2021. Earnings management is measured through three different models. For empirical investigation, panel regression techniques were employed. The results indicate that CEO tenure (CEOTEN) has a negative impact on earnings management across all models. In contrast, CEO experience shows a positive impact on earnings management. Gender diversity is also found to have a positive impact on earnings management. Furthermore, audit quality demonstrates a negative influence on earnings management in all three models. In addition, the findings reveal that CEO tenure, CEO experience, and audit quality moderate the relationship between female board representation and earnings management in all three models.

This research offers several implications for managers, academic researchers, investors, policymakers, and shareholders, which may be beneficial for both developed and emerging economies. The study is particularly important for shareholders and firm owners, as it highlights the main factors that affect earnings management. Furthermore, it provides a framework for future scholars and policymakers by offering a comprehensive understanding of the role of CEOs in relation to earnings management. In addition, the study contributes to improving corporate governance systems and reducing agency problems that many firms face. The findings also suggest that gender diversity on boards may, in fact, enhance earnings management.

This research, however, has certain limitations. The sample size is relatively small due to time constraints and incomplete information provided by some companies. Therefore, future research should consider larger sample sizes. Moreover, this study focuses only on non-financial firms listed on the Pakistan Stock Exchange, so future studies could extend the analysis to financial firms, both within Pakistan and in international contexts. In addition, future research could employ alternative measures of earnings management, such as working capital accruals, earnings response coefficients, and accounting conservatism, which may lead to different results.

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