

# Audit quality effectiveness on the relationship between board dynamics and earnings management

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## ABSTRACT

This study aims to extend the existing body of literature by investigating whether audit quality interacts with board dynamics and earnings management. This research makes use of information obtained from 205 companies that are publicly traded in Sub-Sahara Africa (Nigeria, Ghana and South Africa) Stoch Exchange for the period spanning from 2013 to 2022. The fixed and random effect estimation model was utilized in the research study to account for the implications. The findings indicate a positive and statistically significant link was discovered between board dynamics (CEOAI, BPRCI) and EM, and also, demonstrated that audit quality played a moderating role in the connection between CEO attributes and the board process. The results of this study will give shareholders and regulators information that will help analyze board dynamics that are beneficial in mitigating earnings management practices from a growing region. This study contributes to the existing body of literature by conducting an empirical investigation of the subject matter within the Sub-Sahara Africa region. In addition, the study fills the gap in the current body of literature by investigating whether or not audit quality acts as a moderator in the connection between board dynamics and EM.

## ARTICLE INFO

### Keywords:

Audit quality, CEO attributes, Board process, Earnings management, Corporate governance, Sub-Sahara Africa

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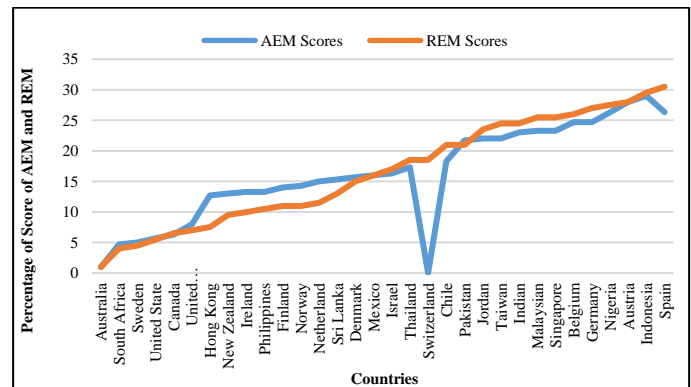
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## 1. INTRODUCTION

The evidence that managers engage in earnings management by manipulating accruals has been demonstrated in a variety of contexts, for a variety of different accruals, and in response to a variety of managerial incentives (Githaiga et al., 2022). Additionally, accrual management is associated with the possibility of accounting fraud, which presents a risk of litigation for the company. REM is a second way that earnings can be controlled (Gunny, 2005; Roychowdhury, 2006). These involve doing things like providing discounts to clients to temporarily enhance sales and decreasing expenses related to research and development (Roychowdhury, 2006). In the context of REM, managers can either overproduce to reduce the cost of items sold, offer temporary price discounts to increase sales (Roychowdhury, 2006), or provide temporary price discounts to increase sales (Roychowdhury, 2006). The manipulation of REM, on the other hand, results in the loss of future economic gains for companies, although this strategy results in a lower risk of litigation for the company. The establishment of board dynamics attributes and subcommittees as an organ of the company to maintain sound corporate governance came about as a direct result of the company's efforts to find a method for effectively managing earnings. According to OECD (2004), a corporation must have a board of directors as a legal requirement in the majority of nations throughout the world. Therefore, it is an essential criterion for companies to have excellent corporate governance. However, prior studies have investigated the issue of earnings management in selected Sub-Sahara Africa only on single earnings management techniques (accruals) and ignoring REM (Obigbemi et al., 2016; Mensah, 2021; Ndulue et al., 2021). Still, nonfinancial firms in Sub-Sahara African countries practicing EM greater than several developed and other developing countries such as Norway, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, the United Kingdom, United States, Pakistan, Singapore, South Africa, and the Philippine. For example, Enamoto et al. (2015), in their study reported that 39 countries are practising EM using both AEM and REM (see. Figure 1), which revealed scores of countries, particularly the Sub-Sahara African region (Nigeria, Ghana, and South Africa).



**Fig. 1.** Earnings management (AEM and REM) scores for 39 countries  
 Source: Enomoto et al. (2015); Wu et al. (2020)

The modern business environment is marked by uncertainty and hazard, making it increasingly tricky for prediction and control. Hence, McIntyre et al. (2007) argued that the boards' characteristics would be vital for corporations' smooth functioning in this case of a changeable environment. The managers practice different functions, such as overseeing the administration to cut agency expenses, hiring and firing authority, sourcing and providing access to resources, training the CEO, and providing strategic direction to the company. Similarly, boards are in charge of initiating organizational transformation and accelerating procedures that promote the company's objective. In other words, the board's responsibilities are rather daunting as it seeks to discharge a wide range of challenging responsibilities. The board should stop the harmful management pursuits that may lead to corporate scandals or failures and ensure that corporations act on opportunities that improve all stakeholders' value and wealth (Bouaziz et al., 2020). Headline-grabbing instances of business failures have rocked the financial world. Nigeria,

Ghana, and South Africa have had their fair share of business scandals, which have led to a rise in corruption and the need for improved corporate governance. The situation has drawn policymakers' attention, prompting them to endorse a corporate governance code and the relevance of CEO qualities in Nigeria, Ghana, and South Africa (Wu et al., 2020). Following the corporate crises in Sub-Saharan Africa and the rest of the world, corporate governance has gained prominence in monitoring and managing executives' work worldwide, particularly in Nigeria, Ghana, and South Africa. Several studies in developed and emerging markets have documented significant literature on various CEO attributes on earnings management (e.g., Rashid et al., 2018; Putri & Rusmanto, 2019; Alhmood et al., 2020; Erin, 2020; Latif & Al-Dhamari, 2020; Qawasmeh & Azzam, 2020). Based on various measurements adopted by scholars, other studies found no significant impact of CEO attributes on earnings management (Deng et al., 2018; Amir et al., 2019; Nguyen et al., 2020). Therefore, the inconsistent findings and problems associated with CEO attributes and earnings management indicators justify the need for further investigation.

Also, despite the relevance of the board processes as defined by the corporate governance code, little study looked at the role of the board processes in nonfinancial enterprises in the context of the research. Nigerian, Ghana, and South Africa nonfinancial firms have encountered impediments such as inadequate financial reporting processes and information asymmetry. Based on these conflicting results of the indicator of board processes (board diligence, board share ownership, and board remuneration). Studies have suggested a significant influence of board processes on EM (Al-Absy et al., 2018; Chatterjee, 2020; Husna, 2020; Harymawan et al., 2020). Conversely, Chouaibi et al. (2018), Ahmed et al. (2021), and Agustia et al. (2022) found board processes to be insignificantly related to EM. Hence, divergence views that board processes can serve as a watchdog or not in mitigating the incidence of earnings management, and the lack of studies on board process in the study domain is enough grounds to examine further. There have been several studies that have concentrated on the various aspects of earnings management and corporate boards, such as Obigbemi et al. (2016), Sajid & Afza (2018), L. Li (2019), and Mensah (2021). Additionally, CG and EM studies, such as Chen et al. (2019) and Wu et al. (2020), have been conducted, but there have been few studies that have been conducted in the Sub-Saharan Africa region. Following the preceding, therefore, the purpose of this study is to evaluate the impact that corporate governance mechanisms have on earnings management in the two most critical leading economies in Sub-Saharan Africa, namely Nigeria and South Africa. The research makes significant contributions to the body of literature in three primary ways. In the first place, the study investigates the extent to which CEO attributes and board processes can lessen the number of instances in which company management manipulates earnings to attract potential investors. It is well known that African nations have a high rate of corruption in their institutions; hence, the purpose of this study is to shed more light as a means of reducing instances of corporate managers engaging in corrupt behaviour, the moderating influence of audit quality on the relationship between board dynamics and EM is being investigated. The second point is that the utilization of an index for the features of the CEO and board process in the context of corporate governance and EM is a strategy that is both creative and unique. The remainder of the research is structured as described below. In the second section, related literature on the study is presented. In the third section, the methodology that was used for the study is examined. In the fourth section, the results of the empirical analysis are presented. Finally, in the fifth section is the conclusion and recommendation.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1 CEO Attributes and Earnings Management

The upper echelon theory also gave an explanatory argument on the CEO's views on organizational outcomes. The theory states that the CEO controls its business strategy and the management team. Meanwhile, CEO sex, education, competence, tenure, age, background career, experience, shareholding, and duality are just a few of the characteristics of CEOs that have been in previous studies (Badru et al., 2017; Farag & Mallin, 2018). Taken together and focused on the research domain's disclosure on how individual CEOs influence the efficacy of their companies. CEOs with more extended experience, according to Latif & Al-Dhamari (2020), are more likely to use their capacity to distort accounting data. Also, some studies have argued that CEO attributes may contribute to lower EM manipulation (O'Callaghan et al., 2018; Vu et al., 2018; Nguyen et al., 2018; Altarawneh et al., 2020; Bouaziz et al., 2020; Nguyen et al., 2020; Sardari et al., 2021). Similarly, studies have revealed a negative relationship between CEO attributes and EM (Deng et al., 2018; Putri & Rusmanto, 2019; Baatwah et al., 2020). This current study uses principal components analysis to develop an index of four elements of CEO attributes, and the arguments

led the survey to ascertain that CEO attributes contribute to mitigating EM. Hence, in light of the current situation in Sub-Saharan Africa, the CEO attributes index impacts EM.

*H1a: The association of CEO attributes index mitigates the accrual earnings management*

*H1b: The association of CEO attributes index mitigates the real earnings management.*

### 2.2 Board Processes and Earnings Management

The structure and functions of the board and sub-committees are the significant compliance challenges that companies are presently facing. It has been widely discussed in previous studies (Nazir and Afza, 2018) that board process committees contribute to the effectiveness of governance. However, in this study, three specific board processes have been suggested based on past studies of board process effectiveness: board diligence, share ownership, and board remuneration. Overall, the bulk of this study has discovered that firms with a successful board process have a better likelihood of earnings control (Kapoor & Goel, 2019; Siala & Jarboui, 2019; Asghar, 2020; Saona et al., 2020; Almaqtari et al., 2021). Due to the complexity surrounding the agency conflict and noncompliance to the corporate governance code, others found an insignificant association in the nonfinancial firms that do not have required board process and lack monitoring mechanisms (Ibrahim et al., 2020; Paul et al., 2020; Almaqtari, 2021). Based on these empirical divergence results, the effectiveness of the board's process would have a massive impact on the board's efficiency in mitigating EM. Also, a well-organized board could perform its oversight and strategic functions. Thus, in line with previous findings, it is possible to articulate the following research hypothesis explicitly:

*H2a: The relationship of the board process index mitigates accrual earnings management.*

*H2b: The relationship of the board process index mitigates real earnings management.*

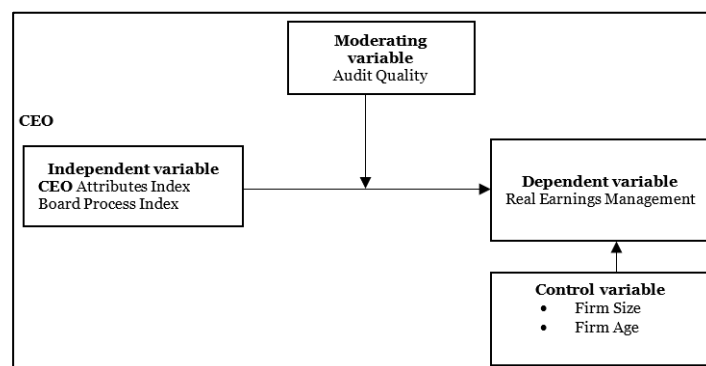


Fig. 2. Conceptual Framework

## 3. METHOD

### 3.1 Sample Data Variable

The study uses secondary data sources of listed nonfinancial firms through MachameRatios and the Nigeria Stock Exchange for the years 2014 - 2023. The study uses five filters to remove the company: 1) engage in voluntary withdrawal from the stock exchange, 2) delisted firms, 3) active in the process of merger and acquisition, 4) firms made public by the government, and 5) firms that cannot offer enough data for the variable interest. Based on these parameters, the population was filtered down to 205 as the sample size of nonfinancial firms at the end of December, 2023.

### 3.2 Dependent variable measurement

Earnings management (EM) is the dependent variable to examine board dynamics. Prior studies on the practice of EM using both techniques (AEM and REM) have produced mixed results in nonfinancial firms. Some studies conclude that a positive link exists (Almashaqbeh et al., 2019; Janssen, 2019; Suman & Singh, 2020). Some other studies concluded a negative association (Bzeouich et al., 2019; Chatterjee & Rakshit, 2020; Orazalin, 2020). Still, the efficiency of EM as a dependent variable against board dynamics among nonfinancial firms needs to be investigated empirically, which is something that this study has taken into consideration. We have estimated the earning management (AEM and REM) by following (Almashaqbeh et al., 2019; Sha et al., 2020; Wu et al., 2020; Mnif & Cherif, 2021). The study adopted the Modified Jones Model

that was created by Dechow et al. (1995) in conjunction with the equation of discretionary using the following formula:

$$TA_{i,t} - \frac{t}{AI} - t - 1a1 \left( \frac{1}{AI} - t - 1 \right) + a2 (\Delta REVI_{i,t} - \Delta RECI_{i,t} - t - 1) + a3 \left( PPEi_{i,t} - t - 1 \right) + \epsilon_{i,t} \tag{1}$$

Where:  $TA_{i,t}$  signifies total accrual;  $\Delta REVI_{i,t}$  the difference in revenue from the previous year  $t$  to  $t - 1$ ;  $\Delta RECI_{i,t}$  the shift in the number of receivables; and  $PPE_{i,t}$  consists of the property, the plant, and the assets.

Similarly, the Roychowdhury (2006) and Cohen et al. (2008) model uses three proxies for REM as follows: a) Atypical discretionary spending, b) Atypical Production Costs, and c) Atypical Cash Flow from Operations:

$$PROD_{it}/Assets_{it-1} = \alpha_0 + \alpha_1 [1/Assets_{it-1}] + \beta_1 [Sales_{it}/Assets_{it-1}] + \beta_2 [\Delta sales_{it}/Assets_{it-1}] + \beta_3 [\Delta sales_{it-1}/Assets_{it-1}] + \epsilon_{it} \tag{2}$$

As an approximated residual of Equation 1, the adopted equation is to estimate the average level of discretionary spending:

$$DISEXP_{it}/Assets_{it-1} = \alpha_0 + \alpha_1 (1/Assets_{it-1}) + \beta_1 (Sales_{it-1}/Assets_{it-1}) + \epsilon_{it} \tag{3}$$

Where: the current cash flow from operations is represented by the  $CFO_{it}$  for the company  $i$  during the period under consideration. When compared to the expenses for managerial and marketing expenses, advertising, and R&D,  $DISEXP_{it}$  is the one that reflects the discretionary expenses, which include selling, general, and administrative costs as well as R&D. The word "sit" stands for the revenue from sales. The change in sales revenues of company  $i$  in year  $t$  is denoted by  $it$ ,  $\Delta Si_{i,t}$ . The lagging value of the total assets is indicated by the symbol  $Ai$  times one. The definition and measurement of the study variables are depicted in Table 1.

**Moderating variables:** Previous research concluded that no single factor might have the most significant impact on audit quality effectiveness. Therefore, the joint Measurement for AUDQI attributes used here is better than measures of individual structures (Kouaib & Almulhim, 2019; Wu et al., 2020; Almaqoushi & Powell., 2021).

**3.3 Model Specification**

For analysis purposes, descriptive statistics, correlation analysis, and multivariate regression were employed using STATA version 14. The model is specified on an empirical framework using the audit quality index to moderate the relationship between board dynamics (CEOAI and BPRCI) and earnings management (AEM and REM). The dependent variable for this study is earnings management (accrual and real), while board dynamics are CEOAI and BPRCI. The empirical models for evaluating the effect of board compositions on earnings management (AEM and REM) are specified below:

*Model (1):*

$$AEM_{it} = \alpha_0 + \beta_1 CEOI_{it} + \beta_2 BPRCI_{it} + \beta_3 FSIZE_{it} + \beta_4 FAGE_{it} + \epsilon_{it} \tag{4}$$

$$REM_{it} = \alpha_0 + \beta_1 CEOI_{it} + \beta_2 BPRCI_{it} + \beta_3 FSIZE_{it} + \beta_4 FAGE_{it} + \epsilon_{it} \tag{5}$$

*Model (2)*

$$AEM_{it} = \alpha_0 + \beta_1 CEOI_{it} + \beta_2 BPRCI_{it} + \beta_3 FSIZE_{it} + \beta_4 FAGE_{it} + (\beta_6 AUDQI * CEOI_{it}) + (\beta_7 AUDQI * BPRCI_{it}) + \epsilon_{it} \tag{6}$$

$$REM_{it} = \alpha_0 + \beta_1 CEOI_{it} + \beta_2 BPRCI_{it} + \beta_3 FSIZE_{it} + \beta_4 FAGE_{it} + (\beta_6 AUDQI * CEOI_{it}) + (\beta_7 AUDQI * BPRCI_{it}) + \epsilon_{it} \tag{7}$$

**Table 1.** Description of the research variables

Acronym	Variable	Description	Source
Dependent			
AEM	Accrual Earnings Management	The residuals are derived from the annual firm estimations.	The Modified Jones Model, 1991
REM	Real Earnings Management	REM is the residuals from yearly firm estimations.	Rowchowdhury, 2006
Independent Variable			
CEOAI	Chief Executive Officer Attributes index	The proportion of independent directors to the total number of directors	Rajeevan & Ajward,(2019).
BPRCI	Board process index	Percentage of women on the board of directors	Al Azeez et al. (2019)
AUDQI	Audit Quality	External audit index (five elements)	Almaqoushi & Powell., 2021.
Control Variable			
FSIZE	Firm Size	Log of total assets	Wu et al. (2020).
FAGE	Firm Age	Number of years of company incorporation to date	Wu et al. (2020).

Source: Extracted from previous literature (2024).

**4. RESULTS AND ANALYSIS**

**4.1 Descriptive Analysis**

**Table 2.** Descriptive statistics for the full sample.

Variable	Mean	St. Dev	Maximum	Minimum	N	JB
AEM	0.40	0.09	0.90	0.05	2,037	0.00(0.00)
REM	2.14	1.84	12.18	0.00	2,033	0.00(0.00)
AUDQI	1.99	1.73	4.89	-2.74	2,044	0.00(0.00)
CEOAI	0.71	0.30	1.58	0.01	1,975	0.00(0.00)
BPRCI	9.80	0.84	14.83	4.01	2,032	0.00(0.00)
FSIZE	6.71	0.97	9.24	2.99	2,046	0.00(0.00)
FAGE	24.10	18.52	0	104	2,037	0.00(0.00)

Source: Processed data with STATA 15 (2024)

In Table 2, the average of AEM and REM levels, which proxy earnings management practice of the sampled Sub-Sahara African listed nonfinancial firms, was 0.398. The max and min values of AEM and REM were 0.897, 12.176, 0.054, and 0.001, respectively. It means that SSA nonfinancial firms jointly are practicing high earnings management. The CEOAI (CEO tenure, share ownership and gender) with an average value of 71. The maximum value was 1.58, while the minimum was 0.012. Hence, the nonfinancial firms with higher CEOs above six within the year study are practicing high EM while nonfinancial firms with CEOAI below 6 are less engaged in earnings smoothening. The implication of the outcome signifies that using an index for CEO attributes may not be appropriate. Also, the board process index, which was measured with four elements of meeting and remuneration, with an average value of the nonfinancial companies of 10%, when compared to the minimum value of 4, the maximum value was 15. Since this is the case, businesses that have a score of 10 or greater are considered to be higher in Smoothening EM because they lack an effective board process, while firms with a value below 9.797 have the proper board process in nonfinancial firms. The mean firm size (FSIZE) amounts to 6.712% of total assets. The mean of firm age (FAGE) is 24.10.

**4.2 Correlation Analysis**

**Table 3.** Pairwise Correlation

Variable	AEM	REM	AUDQI	CEOI	BPRCI	FSIZE	FAGE
AEM	1.00						
REM	-0.69*	1.00					
AUDQI	0.61*	-0.89*	1.00				
CEOAI	-0.12*	0.11*	-0.11*	1.00			
BPRCI	-0.11*	0.19*	-0.14*	-0.12*	1.00		
FSIZE	0.02	-0.01	0.19*	-0.10*	0.33*	1.00	
FAGE	-0.01	-0.06	0.08*	-0.03	0.01	0.07*	1.00

Source: Processed data with STATA 15 (2024).

In the case of EM (AEM), the REM correlation shows a weak negative association with (-0.687\*). Also, a somewhat negative correlation exists between REM and AUDQI (-0.886\*). In the case of AEM and CEOAI, we observed that there exists a negative insignificant nexus between AEM and CEOAI (-0.120\*) and a positive relationship between REM and CEO (0.111\*). In the case of BPRCI and AEM (-0.105\*), a negative correlation was also observed, while REM and BPRCI show a positive relationship (0.193\*).

**4.3 Regression Result**

**Table 4.** Regression Result for Fixed Effect

Variable	Model 1 AEM (OLS Reg.)	Model 1 REM (OLS Reg.)	Model 1 AEM (Fixed Eff.)	Model 1 AEM (Random Eff.)	Model 2 REM (Fixed Eff.)	Model 2 REM (Random Eff.)
C	0.40 (0.00)	-2.44 (0.00)	0.32 (0.00)	0.34 (0.00)	1.78 (0.00)	1.68 (0.00)
CEOAI	-0.02 (0.00)	0.16 (0.01)	0.00 (0.69)	0.00 (0.10)	0.02 (0.30)	0.03 (0.24)
BPRCI	0.00 (0.22)	0.02 (0.41)	0.00 (0.47)	0.00 (0.76)	0.02 (0.01)	0.03 (0.00)
FSIZE	-0.01 (0.00)	0.33 (0.00)	0.01 (0.00)	0.01 (0.02)	0.03 (0.48)	0.02 (0.51)
FAGE	-0.00 (0.00)	0.00 (0.65)	0.00 (0.40)	0.00 (0.47)	0.00 (0.75)	0.00 (0.88)
Firm Eff.	Yes	Yes	Yes	Yes	Yes	Yes
Time Eff.	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics	5(0.00)	5(0.00)	5 (0.00)	5 (0.00)	5 (0.01)	5(0.00)
Adj.R <sup>2</sup>	0.39	0.81	0.17	0.27	0.65	0.51
VIF	1.09	1.09	-	-	-	-
Het. Test	325.6 (0.00)	173.1 (0.00)	-	-	-	-

Hausman Test	-	-	34.6 (0.00)	34.6 (0.00)	39.1 (0.00)	39.1 (0.00)
Obs (N)	1,945	1,945	1,945	1,945	1,945	1,945

Notes: CEOAI: chief executive officer attributes index (CEO Tenure, CEO Turnover, CEO Ownership, and CEO gender) is the index; BPRCI: board process index (Board Diligence, Board Share Ownership, Board Remuneration); FSIZE is the log of total asset; FAGE is the date incorporation to date. All the indices are derived using PCA (principal component analysis). P-values (2) \*\*, \*\*\* implies statistical significance at 5% and 1% levels respectively,

## 5. DISCUSSION

The purpose of this study was to ascertain how the board effectiveness influences real earnings management in selected Sub-Saharan African countries' nonfinancial firms. The study's dependent variable was real earnings management (REM), whereas its independent factors were the CEO attributes index and board process index. In Table 4, we found that the adjusted R-squared value of AEM and REM (0.39 and 0.81) indicates that in approximately 39% and 81% of the course of the period of interest, the independent factors were able to collectively explain the systematic fluctuations that occurred in the dependent variable in the pooled nonfinancial companies. The conclusion that can be drawn from this is that the EM in Nigerian nonfinancial enterprises cannot be wholly defined by all of the variables that were utilized in this research. The part of the dependent variable that cannot be explained can be attributed to the fact that significant independent factors that are capable of defining the dependent variable but are not within the scope of this study were not taken into consideration. The fact that the F-statistic value is 24.74 and the P-value that is linked to it is 0.00 demonstrates that the OLS Pooled regression model, on the whole, is statistically significant at the 5% level. It is an indication that the regression model is valid and may be utilized for statistical inference. The absence of multicollinearity is demonstrated by the fact that the mean value of the VIF in Table 4 is 1.09, which is lower than the benchmark value of 10. In addition, Table 4 shows that the OLS results did not have any heteroscedasticity issues [325.6(0.00)]. Therefore, it shows that the fluctuations that occur between the dependent and independent variables are heteroscedastic.

On the other hand, CEOI (OLS = -0.02 (0.00) and 0.16 (0.01)) appears to have a negative and negligible effect on AEM, whereas it has a favourable and significant influence regarding REM. Therefore, we should reject hypothesis 1a and accept 1b. This finding is consistent with the outcome of Latif and Al-Dhamari (2020). Also, BPRCI (OLS = 0.00 (0.22) and 0.02 (0.41)) does have a significant impact on AEM and REM. The conclusion that can be drawn from this is that an increase in BPRCI by policy institutions would be beneficial and significantly decrease EM. This finding is consistent with the results of previous empirical investigations, which demonstrated that BPRCI is a significant factor in reducing EM smoothing (Asghar, 2020). In light of this discovery, which can be classified as either substantial or unimportant, it is evident that CEOAI is an essential component to take into account when making judgements regarding the modification of EM outcomes.

Meanwhile, the estimation of the RE panel regression takes into consideration the fact that the error term and the variables that explain it are correlated, whereas the analysis of the fixed effect panel regression was based on the assumption that there was no correlation between the error term and the variables that explained it. During the process of selecting the two-panel regression estimation findings, the Hausman test was carried out. This test is based on the null hypothesis that the RE model is preferred to the FE model or that the opposite is true.

Since both models are statistically significant at a level of 0.5%, the F-statistic value of 5(0.00) for FE models and 5(0.00) for RE models correspondingly in AEM model 1 demonstrates that both models are suitable for drawing inferences because they are valid. When looking at the coefficient of determination (inside R squared), it was found that the independent variables in the FE model explained 13% of the systematic changes, whereas the RE model explained 19% of the frequent variations. Taking a look at the p-value of the Hausman test, which is 0.00, indicates that we ought to reject the null hypothesis and accept the alternative view at a significance level of 1%. When it comes to drawing our conclusions and making our suggestions, this suggests that we ought to stick with the outcomes of the FE panel regression models. The results of the FE are statistically more appealing than those of the RE, which is another implication that can be drawn from this discussion. After considering the preceding, it became necessary to have a conversation about the results of the FE.

In Table 4, CEOAI (FE = 0.00 (0.69) as an independent variable to EM appears to have a positive and less significant impact on AEM at 1% near while (RE = 0.00 (0.10) which has a positive and significant effect on

REM at 5% level. Therefore, we should accept hypothesis 1a. The finding is in agreement with the previous outcome (Nguyen et al., 2020). Also, BPRCI (FE = 0.00 (0.47) with a positive and minor impact on EM on AEM at 1%. Consequently, this indicates that we ought to adopt hypothesis 1b, and the outcome was in agreement with the earlier results, which demonstrated that an efficient board procedure would result in a reduction in EM (Wu et al., 2020).

### 5.1 Result of Panel effect Model.

Table 5. Regression Result (Moderation Effect)

Variable	Model 1	Model 1	Model 2	Model 2
	AEM (Fixed Effect)	AEM (Random Effect)	REM (Fixed Effect)	REM (Random Effect)
C	0.321 (0.000)	0.352 (0.000)	1.796 (0.000)	1.509 (0.000)
CEOAI	-0.002 (0.537)	-0.005 (0.316)	0.021 (0.537)	0.045 (0.398)
BPRCI	0.0017 (0.529)	-0.001 (0.474)	0.031 (0.529)	0.106 (0.000)
AUDQI*CEOAI	0.002 (0.498)	0.002 (0.221)	-0.000 (0.498)	-0.007 (0.707)
AUDQI*BPRCI	-0.000 (0.689)	0.001 (0.00)	-0.004 (0.689)	-0.027 (0.000)
FSIZE	0.008 (0.142)	0.006 (0.04)	0.022 (0.142)	0.013 (0.675)
FAGE	0.000 (0.297)	0.000 (0.603)	0.000 (0.297)	-0.001 (0.493)
Firm Effect	yes	yes	yes	yes
Time Effect	yes	yes	yes	yes
F-statistics	5(0.004)	5(0.000)	5(0.057)	5(0.000)
R- Squared	0.190	0.320	0.791	0.590
Observation (N)	1,945	1,945	1,945	1,945
Hausman Test	198.09 (0.000)	198.09 (0.000)	896.59 (0.000)	896.59 (0.000)

Source: Processed data with STATA 15 (2023).

As can be seen in the table located above, we found that the corrected R-squared value for REM model 2 was AEM = 0.19 and 0.32, which means that about 0.19 and 0.32, and REM = 79 and 59 are found that the independent factors were responsible for explaining the majority of the systematic fluctuations in the dependent variable, which shows a significant deviation from the outcome of the result of estimation in model 1. This implies that EM in selected SSA countries cannot be 100 percent explained by board dynamics alone but proves to have a moderation effect. The part of the EM variable that cannot be defined can be attributed to the fact that significant board dynamic factors that are omitted but are not within the scope of this study were not taken into consideration. The CEOAI value of (FE = 0.021 (0.7) shows that the AEM model appears to have a positive and insignificant impact on EM. Following the joint choice of CEO attributes, it does not significantly mitigate EM of listed nonfinancial firms. The findings are statistically significant at the 10% level, and this means that the choice of CEOAI can reduce EM. The BPRCI (FE = 0.31 (0.53)) as an independent variable appears to have a favourable influence on EM at the 1% level, but this influence is not statistically significant. In light of this, it may be concluded that the selection of BPRCI items does not considerably reduce the EM of companies that engage in fraudulent financial statement practices. Consequently, this indicates that we ought to adopt hypothesis 1, which states that BPRCI does not have a substantial influence in reducing the likelihood of fraud detection. It suggests that the selection of BPRCI raises the possibility of companies engaging in fraudulent activity with regard to their financial statements. This finding is consistent with the results of previous empirical studies, which demonstrated that BPRCI is not a significant indicator in reducing EM. This finding did not coincide with the results of other researchers who have reported that BPRCI had a significant impact on the identification of fraud (Kapoor & Goel, 2019; Asghar, 2020).

## 6. CONCLUSION AND RECOMMENDATIONS

The qualities of the board that determine its efficacy are what limit the motivations for managers to engage in behaviour that is immoral when it comes to EM. For this reason, the study examines whether audit quality moderates the connection between board dynamics and EM among companies that are listed in the selected SSA Stock Exchange. Between the years 2013 and 2022, the research looked at panel data and a sample of 111 different companies. CEO attributes and board process were the two aspects of board dynamics that were the primary focus of the study in light of earlier research that had been conducted. Hence, the findings show that CEOAI and BPRCI are positive and statistically insignificant in mitigating EM. These suggest that the two dimensions can prevent managers' opportunistic tendencies associated with EM. The interaction effect of the audit quality index (an increase of adjusted R<sup>2</sup> of 6%) to the main result in

model 1 when proxied with CEOI and BPRCI to AEM and REM appears to have a moderating impact on models 1a and 1b. The interaction effect of audit quality (an increase of adjusted R<sup>2</sup> of 12%) to the main result in model 1 when proxied with board dynamics of CEOI and BPRCI of AEM appears to have a moderating impact on both models. Furthermore, the findings indicate that the connection between the size of the company and the size of the board reduces the practice of EM. Hence, the stakeholders can benefit from the findings of this study since they offer valuable insights that can be used to evaluate the effect of board dynamics on EM. An acceptable level of corporate governance that is proportional to the board committee of the company should be something that regulators should take into consideration. Notably, the results of this study, like those of other investigations, should be regarded with caution despite the fact that they are relatively new. Meanwhile, there is a possibility that the measurement of the variables causes errors. For example, AEM and REM were utilized as a proxy for EM; however, previous investigations may have used different metrics. Second, the study did not take into account other board dynamics that could have an impact on EM and can be taken into consideration by subsequent research. A third point considered was the sample collected from developing Sub-Saharan countries, which are characterized by a relatively weak legal and institutional environment; hence, studies that involve many countries should further enhance our understanding of the subject. One final point to consider is that the findings could not apply to financial institutions because of the ever-changing nature of corporate governance norms and legal and institutional environments.

### 6.1 Limitation and Future Direction for Research

The research investigation was not very limited. This research study firstly concentrated on the nonfinancial firms. In the future, researchers may select from a financial institution, like the deposit money banks, insurance and micro financial banks. The abolition of CEO-duality in the selected Sub-Saharan African countries necessitated this study and therefore, researchers may select other African countries in the future. Because this study is cross-sectional in nature, time series data can be used for future research. The effectiveness of board dynamics was the subject of this investigation. Researchers can choose to focus on other aspect of dynamics lie board subcommittee in the future to examine how it mitigate the earnings management smoothening, and can also use another earnings management indicator.

### REFERENCE

- Agustia, D., Harymawan, I., & Nowland, J. (2022). Joint board-management meetings and firm performance. *Australasian Accounting, Business and Finance Journal*, 16(1), 119-133.
- Ahmed, M. G., Ganesan, Y., & Hashim, F. (2021). Antecedents and consequence of governance characteristics, earnings management, and company performance: An empirical study in Iraq. *The Journal of Asian Finance, Economics and Business*, 8(8), 57-66.
- Al-Absy, M. S. M., Ku Ismail, K. N. I., & Chandren, S. (2018). Board chairmen's involvement in the nomination and remuneration committees and earnings management. *Australasian Accounting, Business and Finance Journal*, 12(4), 60-76.
- Alhmoody, M. A., Shaari, H., & Al-dhamari, R. (2020). CEO characteristics and real earnings management in Jordan. *International Journal of Financial Research*, 11(4), 255-266.
- Almaqoushi, W., & Powell, R. (2021). Audit committee quality indices, reporting quality and firm value. *Journal of Business Finance & Accounting*, 48(1-2), 185-229. <https://doi.org/10.1111/jbfa.12478>.
- Altarawneh, M., Shafie, R., & Ishak, R. (2020). CEO Characteristics: A Literature Review and Future Directions. *Academy of Strategic Management Journal*, 19(1), 1-10.
- Amir, A.S., Shaari, H., & Mohd Ariff, A. H (2019). Ownership structure and real earnings management in Malaysian corporations. *International Conference on economic, entrepreneurship, and power*, pp. 01-13.
- Anifowose, M., Rashid, H. M. A., & Annuar, H. A. (2017). The moderating effect of board homogeneity on the relationship between intellectual capital disclosure and corporate market value of listed firms in Nigeria. *International Journal of Economics, Management, and Accounting*, 25 (1), 71-103.
- Anwar, H., & Buvanendra, S. (2019). Earnings Management and Ownership Structure: Evidence from Sri Lanka. *Colombo Business Journal*, 10 (1), 44-65.
- Baatwah, S. R., Al-Qadasi, A. A., & Al-Ebel, A. M. (2020). Religiosity at the top: does it interacts with accounting expertise to limit real earnings management? *Managerial Auditing Journal*, 35(9), 1343-1377.
- Badru, B.O., Ahmad-Zaluki, N.A., & Wan-Hussin, W.N. (2017). Board characteristics and the amount of capital raised in the Malaysian IPO market. *Journal of Multinational Financial Management*, 42, pp. 37-55.
- Bouaziz, D., Salhi, B., & Jarboui, A. (2020). CEO characteristics and earnings management: empirical evidence from France. *Journal of Financial Reporting and Accounting*, 18(1), 77-110.
- Bzeouch, B., Lakhal, F., & Dammak, N. (2019). "Earnings management and corporate investment efficiency: does the board of directors matter? *Journal of Financial Reporting and Accounting*, 7(4), 650-670.
- Chandra, A., & Wimelda, L. (2018). "Opportunistic behavior, external monitoring mechanisms, corporate governance, and earnings management". *Acc. Fin. Review*, 3 (1), 44 – 52.
- Chatterjee, C. (2021). Ownership pattern, board composition, and earnings management: evidence from top Indian companies. *International Journal of Disclosure and Governance*, 18(2), 179-192.
- Chatterjee, R., & Rakshit, D. (2020). Association between earnings management and corporate governance mechanisms: A study based on select firms in India. *Global Business Review*, 1(19), 02-19.
- Chen, H., Jory, S., & Ngo, T. (2019). Earnings management under different ownership and corporate governance structure: A natural experiment with master limited partnerships. *Quarterly Review of Economics and Finance*, 76, 139–156. <https://doi.org/10.1016/j.qref.2019.05.005>.
- Chouaibi, J., Harres, M., & Brahim, N. B. (2018). The effect of board director's characteristics on real earnings management: Tunisian-listed firms. *Journal of the Knowledge Economy*, 9(3), 999-1013.
- Cohen, D. A., & Zarowin, P. (2008). Economic consequences of real and accrual-based earnings management activities. *The Accounting Review*, 83, pp. 758-787.
- Damak, S. T. (2018). Gender diverse board and earnings management: evidence from French listed companies. *Sustainability Accounting, Management, and Policy Journal*, 9(3), 289-312.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review*, 193 - 225.
- Deng, M., Ho, J. L., & Li, S. (2018). Does managerial risk aversion affect earnings management? Evidence from CEO political ideology. *Baruch College Zicklin School of Business Research Paper*, 5(6), 2-58.
- Enomoto, M., Kimura, F., & Yamaguchi, T. (2015). Accrual-based and real earnings management: An international comparison for investor protection. *Journal of Contemporary Accounting & Economics*, 11(3), 183–198.
- Erin, O., & Bamigboye, O. A. (2020). Does whistleblowing framework influence earnings management? An empirical investigation. *International Journal of Disclosure and Governance*, 17(2), 111-122.
- Erin, O., Bamigboye, O., & Arumona, J. (2020). Risk governance and financial performance: an empirical analysis. *Business: Theory and Practice*, 21(2), 758-768.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325.
- Frag, H., & Mallin, C. (2018). The influence of CEO demographic characteristics on corporate risk-taking: evidence from Chinese IPOs. *The European Journal of Finance*, 24(16), 1528-1551.
- Githaiga, P. N., Muturi Kabete, P., & Caroline Bonareri, T. (2022). Board characteristics and earnings management. Does firm size matter? *Cogent Business & Management*, 9(1), 01-15.
- Gunny, K. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, 27, 855-888.
- Gunny, K. A. (2005). *What are the consequences of real earnings management?* University of California, Berkeley, pp. 7-10.
- Harymawan, I., Agustia, D., Nasih, M., Inayati, A., & Nowland, J. (2020). Remuneration committees, executive remuneration, and firm performance in Indonesia. *Heliyon*, 6(2), 1-11.
- Husna, A. (2020). The Effect of Managerial Ownership and Company Size on Firm value with Capital Structure as Moderating Variables in Manufacturing Companies Listed in Indonesia Stock Exchange 2016-2018. *Journal of Research in Business, Economics, and Education*, 2(5), 1168-1180.
- Janssen, J. (2019). The influence of gender diversity and earnings management on the short-and long-term financial performance of European firms, Master's Thesis Economics: *International Business*, pp. 1-45.
- Kouaib, A., & Almulhim, A. (2019). Earnings manipulations and board's diversity: The moderating role of audit. *The Journal of High Technology Management Research*, 30(2), 1047-8310.
- Latif, R. A., & Al-Dhamari, R. A. (2020). CEO discretion, political connection and real earnings management in Nigeria. *Management Research Review*, 43(8), 909 - 929.

- Li, L. (2019). Is there a trade-off between accrual-based and real earnings management? Evidence from equity compensation and market pricing. *Finance Research Letters*, 28, 191-197. <https://doi.org/10.1016/j.frl.2018.04.021>.
- McIntyre, A. (2007). *Participatory action research*. Sage publications.
- Mensah, E. (2021). The effect of IFRS adoption on financial reporting quality: Evidence from listed manufacturing firms in Ghana. *Economic Research-Ekonomska Istraživanja*, 34(1), 2890-2905.
- Mnif, Y., & Cherif, I. (2021). Female board directorship and earnings management. *Pacific Accounting Review*, 33(1), 114-141.
- Ndulue, G.C., Okoye, P.V., & Amahalu, N.N. (2021). Earnings management and shareholders wealth creation of quoted conglomerates in Nigeria. *Journal of Research in Education and Sustainable Development*, 1(9), 47-65.
- Nguyen, A.H., Nguyen, L. H., & Doan D. T. (2020). Ownership structure and earnings management: empirical evidence from Vietnam real estate sector. *Real Estate Management and Valuation*, 28(2), 37-51.
- Nguyen, P., Rahman, N., & Zhao, R. (2018). CEO characteristics and firm valuation: a quintile regression analysis. *Journal of Management & Governance*, 22(1), 133-151.
- Obigbemi, I.F., Omolehinwa, E.O., Mukoro, D.O., Ben-Caleb, E., & Olusanmi, O.A. (2016). Earnings management and board structure: evidence from Nigeria. *Sage Open*, 6(3), 1-15.
- O'Callaghan, S., Ashton, J., & Hodgkinson, L. (2018). Earnings management and managerial ownership in private firms. *Journal of Applied Accounting Research*, 19(4), 648-668.
- Orazalin, N. (2020). Board gender diversity, corporate governance, and earnings management: Evidence from an emerging market. *Gender in Management. An International Journal*, 35(1), 37-60.
- Qawasmeh, S., & Azzam, M. (2020). CEO characteristics and earnings management. *Accounting*, 6(7), 1403-1410.
- Qawqzeh, H. K., Endut, W. A., Rashid, N., & Dakhllalh, M. M. (2020). Impact of the external auditor's effectiveness on the financial reporting quality: the mediating effect of audit quality. *Journal of Critical Reviews*, 7(6), 1197-1208.
- Rashid, N., Zainol, F. A., Salleh, F., Endut, W. A., Yaakub, N., Ghazali, P. L., & Daud, W. N. W. (2018). Quality of Financial Reporting towards the Improvement Corporate Governance Mechanism Quality of Financial Reporting towards the Improvement Corporate Governance Mechanism. *International Journal of Academic Research in Business and Social Sciences*, 8(11), 1339-1345.
- Roychowdhury, S. (2006). Earnings Management through real activities manipulation. *Journal of Accounting and Economics*, 42, pp. 335 - 370.
- Sajid, M.S., & Afza, T. (2018). Does managerial behavior of managing earnings mitigate the relationship between corporate governance and firm value? Evidence from an emerging market. *Future Business Journal*, 4(1), 139-156. <https://doi.org/10.1016/j.fbj.2018.03.001>
- Sardari, R., Setayesh, M., Kordlouie, H., & Banimahd, B. (2021). Studying the Moderating Role of Audit Committee Independence in the Relationship between CEO Narcissism and Real Earnings Management. *Iranian Journal of Finance*, 5(3), 58-77.
- Shah, S. F., Rashid, A., & Malik, W. S. (2020). Potential substitution between accrual earnings management and real earnings management among Pakistani listed firms. *Global Business Review*, pp. 1-18. <https://doi.org/10.1177/097215092095761>.
- Suman, S., & Singh, S. (2020). Corporate governance mechanisms and corporate investments: evidence from India. *International Journal of Productivity and Performance Management*, 70(3), 635-656. DOI 10.1108/IJPPM-09-2019-0453.
- Vu, M.C., Phan, T.T., & Le, N.T. (2018). Relationship between board ownership structure and firm financial performance in a transitional economy: The case of Vietnam, *Research in International Business and Finance*, 45, 512-528. <https://doi.org/10.1016/j.ribaf.2017.09.002>.
- Wu, M., Coleman, M., & Bawuah, J. (2020). The Predictive Power of K-Nearest Neighbour (KNN): The Effect of Corporate Governance Mechanisms on Earnings Management. *SAGE. Open*, 10(3), 1-12. <https://doi.org/10.1177/2158244020949537>.