



## Board Attributes and Earnings Management of Listed Deposit Money Banks in Nigeria

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### ABSTRACT

This research examines the relationship between board attributes and earnings management of deposit money banks listed on Nigeria Stock Exchange for ten years period (2010-2019). Fourteen deposit money banks listed on Nigerian Stock Exchange as at 31st December, 2019 were selected as the samples using census sampling method. Multiple linear regression technique was employed as technique of data analysis. The results shows that board academic and board credit increased and reduced earnings management respectively and insignificantly while board audit reduced the tendencies of managers to manage earnings significantly. Thus, it is recommended that regulators of Nigerian listed deposit money banks should encourage the constitution of audit committee in Nigerian listed deposit money banks. This is because it has proved to play an important role in checkmating unwanted discretionary accruals and improves the earnings quality in the banks.

#### Keywords:

Board academic, board attribute, board audit, board credit, earnings management

### *Atribut Dewan Direksi dan Manajemen Laba pada Bank Uang Deposito di Nigeria*

#### **ABSTRAK**

Penelitian ini menguji hubungan antara atribut dewan direksi dan manajemen laba pada bank uang deposito yang terdaftar di Nigeria Stock Exchange untuk periode sepuluh tahun (2010-2019). Empat belas bank uang simpanan yang terdaftar di Bursa Efek Nigeria pada 31 Desember 2019 merupakan populasi penelitian. Desain penelitian korelasional diadopsi dan semua 14 bank uang deposito dipilih sebagai sampel dengan mengadopsi teknik sampling sensus. Teknik regresi linier berganda digunakan sebagai teknik analisis data. Hasil penelitian ini menunjukkan bahwa keberadaan dewan akademisi dapat meningkatkan manajemen laba, dan sebaliknya keberadaan dewan kredit dapat mengurangi manajemen laba secara tidak signifikan sementara keberadaan audit dewan mengurangi kecenderungan manajer untuk mengelola laba secara signifikan. Dengan demikian, disarankan agar regulator bank uang deposito di Nigeria perlu mendorong pembentukan komite audit di bank uang deposito yang terdaftar di Nigeria. Hal ini karena keberadaan komite audit telah terbukti memainkan peran penting dalam menghindari akrual diskresioner yang tidak diinginkan dan meningkatkan kualitas laba di bank.

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#### Kata Kunci:

Dewan akademik, atribut dewan, dewan audit, kredit dewan, manajemen laba

## 1. Introduction

Credible as well as high quality financial reporting cannot be over emphasized. This is evident in the grave effects of the universal financial crises. According to Haruna, Kwambo and Hassan (2018) agency problem arises as a result of managers

opportunistic tendencies and board of directors as an important component of the regulation is required to supervise the activities of managers to checkmate the tendencies. High profile companies like Parmalat in Italy, Worldcom in USA and several others around the world sank as a result of financial scandal which

suggests that there is still an opacity in financial reporting yet to be penetrated (Ahmed & Hassan, 2011).

Defond (2010) affirmed that the most essential items in understanding as well as preparing financial statement are earnings. This is due to the fact that earnings are necessary in influential decisions on dividends and investments; foundation for financial prediction is based on firm performance measures which also provide standard for stocks valuations (Mohammady, 2012). Earnings importance confirms the universal academic attention towards it and management of earnings, particularly due to its consequence on a numerous stakeholder. Management of earnings especially in the contemporary business setting has been of much worry as a result to its explanatory role in the obvious world's financial scandals (Kapkiyai, Cheboi & Komen, 2020). According to Dechow, Ge and Schrand (2010) the quality of earning is assumed to be reduced by earnings management. In their view earnings management is a system of accounting that uses estimations and decision which has the capability of unintentional error or deliberate bias.

Loan loss provisions is the version of banks earnings management researches in accounting literature (Meisel, 2020). Loan loss provisions are a rather huge accrual for banks and therefore have a significant effect to earnings and statutory capital of banks. The purpose of the requirements is the regulation of loan loss reserves for banks so as to show future anticipated losses on their loan portfolios (Bornemann, Kick, Memmel & Pfingsten, 2012). Therefore, Managers of banks possess the incentives to manage earnings and regulatory capital and to communicate information about future prospects by utilizing loan loss provisions (Oosterbosch, 2010). This has given rise to a postulation that the major instrument used by managers of bank for earnings management is loan loss provisions (Chanderen, 2016). Ozili (2015) affirmed that firms whose disclosure is of higher quality involve less often in management of earnings than firms whose quality of disclosure is lower.

Vital instrument in protecting shareholders interest is the board of directors. The major role of the board of directors is guarding of stakeholders' interest by checkmating the actions of the managers (Huang Chan, Chang, & Wong, 2012). An important attribute of most boards is board academic. Nevertheless, most of the prior researchers disregarded the influence of academics on the board. Academic refers to those that have worked or are teaching in universities, polytechnics or any higher institution of learning or any other person that has conducted or is involved in conducting academic research. University professors have been appointed to the board of directors of many firms as members. As provided by available information, 38.5% of standard & poor's (S&P) 1500 companies in France consist of at least a director who is a professor (Cho et al., 2017). Francis et al. (2015) affirms some crucial tasks expected of a professor to include services to the university and community, research and teaching, which altogether in the long-term assist the society. Hence, a professor of university that has some detailed understanding as well a sense of responsibility on society and business is expected to establish a vital factor which might have affect company plan and/or performance.

Audit committee ensures that the financial reports presented to stakeholders are qualitative. Safeguarding the interest of shareholders through monitoring management is the most important role played by audit committee (Ahmed & Hassan, 2012). The 2018 Nigerian code of best governance practice recommends that the committee ought to comprise mostly of independent, well capable directors who enjoy integrity of high level. Audit committees are regarded as important to quality financial reporting (Hamdan, 2020).

Overseeing of process of financial reporting and checkmating managements' inclinations to earnings management are some of the main purposes of audit committee. According to Ammer and Ahmad-Zaluki (2017) audit committee that is efficient with governance characteristics is expected to promote conservatism of earnings in company as well as

control the utilization of accruals for management of earnings. Additionally, the key purpose of establishing an audit committee as stated in Ghafran and O'Sullivan (2013) is to improve auditing quality.

Another vital committee in bank's board of directors is the credit committee. Credit committee's task is to ensure that loan applicants meet up with the bank's set standards, policies as well as procedures, and applicable governing body regulations (Hesborn et al., 2016). The committee's role in making decisions concerning credit is an important control in credit (and fraud) risk reduction. The committee mitigates the risk where an individual decides those to collect loans, the loans to be rescheduled or written off as well as loan conditions which can be abused easily and concealed up (Bennet, Kenneth, Obenewaa, Charles & Nusenu, 2012). Additional responsibility of the credit committee include monitoring the progress of loans and getting involved in delinquency management (Ben-Yashar, Karasz & Nitzam, 2018).

Provision to the organization's external parties information that are value relevant is the function of financial information and the board attributes are expected to assist in achieving this objective (Haruna et al., 2018). However, accounting standards afford managers chance for using their discretion for financial reporting, example is assets impairment choice approaches, depreciation method, income recognition approaches, and application of receivables (Kapkiyai et al., 2020). This in most cases lead to earnings management. Recently Diamond bank was acquired by Access bank. Moody's, a global advisory service in 2019 identified as one of the reasons for the fall of diamond bank, improper management of the loan portfolio resulting in the management engaging in earnings management through loan loss provisions. The bank went from a profit of ₦28 billion in 2013 to loss of ₦9 billion 2017 after proper provisions. This happened in spite of board of directors' presence to checkmate affairs of the management.

Al-absy, et al., (2019); Almarayeh et al., (2020); Buniamin et al., (2012) recommended in their respective studies inclusion of other important variables in studying board attributes. This implies that other attributes of board have not been given adequate attention in previous studies. Therefore, current study observed that sitting on the board of some banks are academics or those that have in one time or the other worked in the academia. To the best of the researcher's knowledge no study was done to examine the contribution on the board academic towards improving the quality of the earnings of the listed Nigerian deposit money banks by checkmating activities of managers toward earnings management. As a result, a variable named board academic is introduced in current study to enable the researcher examine its contribution in checkmating earnings management of Nigerian deposit money banks.

Several empirical studies have been carried out on the relationship between board attributes and earnings management both in developed and emerging economies. For example, Kankanamage (2016) and Rajeevan and Ajward (2019) in Srilanka; Cho et al. (2017) in Malaysia; Bataineh et al. (2018) in Jordan; Kapoor and Goel (2017) in India; Talbi et al. (2015) in Tunisia. The findings of these studies may not be applicable to Nigerian context due to differences in economic structure, regulatory framework and business environment. By contrast, a limited number of empirical studies that examined the relationship between board attributes and earnings management includes: Haruna et al. (2018), Bala and Kumai (2015), Bala et al. (2020), these studies were domiciled in Nigerian non-financial services sector which would make findings difficult to generalized to Nigerian deposit money banks due to their special regulation. Studies conducted in deposit money banks include Lin et al. (2018); Hamdan (2020). However, these studies were conducted outside Nigeria. The domain of Osemene et al. (2018) was Nigeria deposit money banks but the period of the study did not include the period when Diamond bank was acquired by Access Bank.

Based on the stated problem, current study intends to address the question of to what level does board attributes influence earnings management of listed deposit money banks in Nigeria?

The main objective of the study is to examine the relationship between board attributes and earnings management of Nigeria listed deposit money banks. The specific objectives of the study are as follows:

- i. To find out the effect of board academic on earnings management of listed deposit money bank in Nigeria.
- ii. To examine the relationship between board audit and earnings management of listed deposit money banks in Nigeria.
- iii. To ascertain the effect of board credit on earnings management of listed deposit money banks in Nigeria.

Theoretically and practically current study's contribution consist of but not narrowed to providing evidence empirically on the effect of board attributes on earnings management in Nigeria listed deposit money banks. Information to makers of policy, example security and exchange commission (SEC) that are responsible for the assessment as well as administration of corporate governance will also be availed. Additionally, it will provide a good material that will serve as reference to researchers as well as practitioners aspiring to undertake further study in the area. The study's outcome is expected to serve as policy makers guide in the listed deposit money banks by embarking on vital as well as productive decisions leading to investment in human as well as material resources management by ensuring appropriate directors' selection.

The reminder of the study consists of theoretical framework as well as hypotheses development, the methodology adopted and specification of the study's model, results as well as its discussions and finally the conclusions, limitations and recommendations.

## **2. Theoretical framework and hypothesis development**

This section covers discussion on the study's relevant as well as related literature as well as development of proposed hypotheses. Review on empirical studies on board academic and earnings management, board audit and earnings management as well as board credit and earnings management are conducted. Theory used to underpin the study is also discussed.

### **Board academic and earnings management**

White et al. (2014) showed that minor- and midcap companies are most expected to engage professors against firms that are and also on the average their financial market positively and insignificantly reacts to the professor's appointment having a background in science, medicine and engineering background. Francis, Hasan and Wu (2015) reported that the professor's presence is associated positively with financial performance of a company and also companies having professors of business-related display the better performance. Cho, Jung, Kwak, Lee and Yoo (2017) provided an assessment between companies having directors' professors and companies not having a director's professors. The outcome of the study indicated that companies with directors' professors seem to perform better than companies not having such directors' professors in terms of all measures of performance rating. Ma, Zhou, Zhou and Novoselov (2019) conducted a study in China entitled managerial academic experience, external monitoring and financial reporting quality. The key study's objective was to examine the managerial academic experience impact on firms' financial reporting quality for a period of six years (2008-2013). Findings revealed that firms with experience higher level academic managers display lower levels of accrual and real earnings management, alongside a lower future restatements probability.

A review of the literature reveals a lack of studies on the influence of academic directors on earnings management. Although Ma et al. (2019)

was conducted on the quality of financial reporting, the independent variable was managerial academic. Thus, board academic is one of the major contributions of current study as one determinant of earnings management in Nigeria deposit money banks. This study hypothesised that:

H<sub>1</sub>: Board academic has significant negative association with earnings management of listed deposit money banks in Nigeria.

### **Board audit and earnings management**

Sultana (2015) argued that the corporate governance crucial roles in the process of financial reporting afford an added level of control that improves earnings quality. The function of the audit committee is important in enhancing the audit committee's capacity to effectively perform its tasks. It is affirmed that an audit committee with a chair who has the knowledge as well as dedication to drive the work of the committee effectively monitors management's ability to manage earnings (Ghafran & Yasmin, 2018). Hamdan (2020) concluded that overseeing as well as controlling the process of financial reporting, internal controls as well as the external audit are important functions performed by the committee on audit. The study focused on the impact of effectiveness of the committee on audit on management of earnings in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates within the period of 2012–2016. Four committees of audit attributes were investigated: independence of audit committee, size of audit committee, diligence of audit committee and audit committee financial experience. Outcome of the research showed that conservatism of earnings is significantly higher within banks that have their committees on audit comprising a larger number of members who are independent, also the outcome showed that the size of the audit committee is revealing evidence of an earnings conservatism that is high within GCC banks. Furthermore, the outcomes revealed that members of the committee on audit with financial expertise have positive influence on the earnings conservatism.

In Kapkiyai, Cheboi and Komen (2020) a data that is panel in nature was extracted from the audited financial reports of listed companies at the Kenyan Nairobi Securities Exchange for the periods of fourteen years (2004 to 2017). The data were examined by way of a model of panel regression. The outcome of the study revealed audit committee's effectiveness proving to be a significant earnings management mechanism of monitoring. A significantly negative impact on earnings management were revealed by the independence, meeting frequency, as well as financial expertise of the audit committee. Kenya is an emerging economy like Nigeria.

Studies of Sultana (2015) and Ghafran and Yasmin (2018) were conducted in advanced economy unlike Nigerian economy that is emerging. Although, the domain of Hamdan (2020) is bank, the period of the study stopped at 2017. The domain of Kapkiyai, Cheboi and Komen (2020) was non-financial firm and the result might not be generalized to financial firms. This study hypothesised that:

H<sub>2</sub>: Board audit has significant negative influence on earnings management of listed deposit money banks in Nigeria.

### **Board credit and earnings management**

Al-Hadi et al. (2016) found that companies that have a distinct credit risk committee are linked with larger risk disclosure of market, and the outcome differs through the lifetime of the company. The study similarly inferred that the credit risk committee qualifications as well as size possesses a positively significant influence on disclosures of market risk. By the circumstance of using International Financial Reporting Standard 7 in Bangladesh; Nahar et al. (2016) classified markets risk disclosure, credit, liquidity and operational and equities, and established that risk disclosure rises where a credit risk committee is operational. In Australia, studying a sample of financial institutes, Tao and Hutchinson (2013) examined the function of reward and credit risk committees in supervision and controlling credit and behaviors of risk within

the global financial crisis period. The study argued that credit risk committees decrease asymmetry of information and display signal that the structure of the committees on credit risk and reward is directly related with risk, which, otherwise, is associated with the performance of the firms. Credit risk committees reinforce the lapse of board committee on risks due to the fact they afford devoted resources to constantly appraise the company's hunger for credit and credit outline as well as hunger for risk and risk outline and to authenticate the internal controls of the company around risk management (Viscelli et al., 2017). Generally, existence of credit

risk committee improves the internal control quality and is anticipated to increase quality of financial reporting through decreasing fraudulent opportunistic behavior (Badolato et al., 2014). These studies were conducted in Europe with an advanced economy. Nigerian economy is emerging. This study hypothesised that:

H<sub>3</sub>: Board credit has significant negative effect on earnings management of listed deposit money banks in Nigeria

The relationship among the study's variables are depicted in figure below.

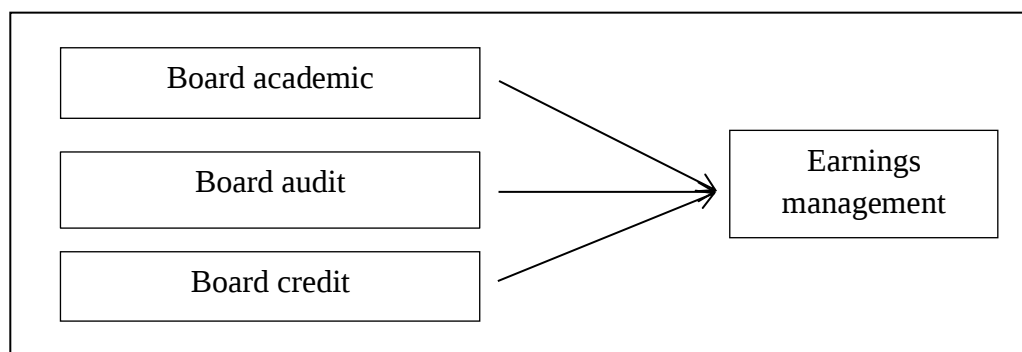


Figure 1. Conceptual framework

Theory underpinning current study is agency theory. As suggested by Haruna et al. (2018) agency theory connects board attributed and earnings management. Agency theory proposed by Berle & Means (1930), developed by Ross (1973) and expanded by Jensen and Meckling (1976) suggests that shareholders can be victims of earnings management for personal benefits by management as a result of segregation of ownership from control. As suggested by Brennan (1995), the issue of agency might rise as the representatives refused to conduct themselves in the owners best interest and the result might be shown in the share price of the firm. It specifically exists in the firms where their exist a motivation by managers to attain their benefits at the detriment of the stockholders (Agrawal & Knoeber, 1996).

Board of directors serve as agent to the stockholders in guaranteeing transparency of the financial reporting that reveal the actual financial

situation of the firm. The independent variables and the dependent variable of current study are built on the agency theory. The presence of board attributes is expected to checkmate the activity of the agents and reduce the agency cost.

### 3. Research method

Correlational research design is the designs employed in current study. This is informed by the positivism paradigm. The design enables the researcher investigate the association among the study's variables. Data source employed was secondary source by extracting data from the published audited accounts of all listed deposit money banks in Nigeria for ten years (2010-2019). The population of the study consists of entire 14 deposit money banks listed on the Nigerian Stock Exchange as at 31<sup>st</sup> December, 2019. Census sampling technique was adopted by using all 14 banks as sample size.

Table 1. List of population and sample

| S/No | Company name                  |          |
|------|-------------------------------|----------|
| 1    | United Bank for Africa Plc.   | Selected |
| 2    | Guarantee Trust Bank Plc.     | Selected |
| 3    | First Bank Nig. Plc.          | Selected |
| 4    | Zenith Bank Plc.              | Selected |
| 5    | Eco Bank Plc.                 | Selected |
| 6    | Stanbic IBTC .Plc.            | Selected |
| 7    | Sterling Bank Plc.            | Selected |
| 8    | Fidelity Bank Plc.            | Selected |
| 9    | Access Bank Plc.              | Selected |
| 10   | First City Monument Bank Plc. | Selected |
| 11   | Jaiz Bank Plc.                | Selected |
| 12   | Wema Bank Plc.                | Selected |
| 13   | Unity Bank Plc.               | Selected |
| 14   | Union Bank Plc.               | Selected |

Source: author, 2021

Multiple linear regression is used in examining the earnings management of the listed Nigerian deposit money banks adopting the loan loss provision model of Beatty et al. (2002). The model's residuals after the data of the sampled firms are inserting signify earnings management in the regression of the second specified study's model. Stata 13 is the data analysis tool used.

### Model specification

This study adopts the discretionary loan loss provisions estimated from the (Beatty et al., 2002) model to measure the earnings management. The choice of the model is influenced by the fact that the model best suits the interest based financial institutions. Discretionary loan loss provisions are calculated from the residuals of the following effect model:

$$LOSS_{it} = \alpha_{ir} + \beta_1 LOGTA_{it} + \beta_2 NPL_{it} + \beta_3 Allowances_{it} + \beta_4 RE\ Loans_{it} + \beta_5 CI\ Loans_{it} + \beta_6 DI\ Loans_{it} + \beta_7 AG\ Loans_{it} + \beta_8 Cons\ Loans_{it} + \beta_9 FG\ Loans_{it} + \epsilon_{it} \quad (1)$$

Where;

i = Industry

t = Time in year

LOSS = Loan loss provisions scaled by total loans;

LOGTA = The natural log of total assets;

NPL = Nonperforming loans as a percent of total loans;

Allowances = Loan loss allowance scaled by total loans;

RE Loans = Real estate loans as a percent of total loans;

CI Loans = Commercial and industrial loans as a percent of total loans;

DI Loans = Loans to depositary institutions as a percent of total loans;

AG Loans = Agricultural loans as a percent of total loans;

Cons Loans = Consumer loans as a percent of total loans;

FG Loans = Loans to foreign governments as a percent of total loans;

$\epsilon$  = Residual

The model that examines the hypotheses of the study is presented as follows:

$$EM_{it} = \beta_0 + \beta_1 BACA_{it} + \beta_2 BAUD_{it} + \beta_3 CRED_{it} + \mu_{i, \dots \dots \dots} \quad (2)$$

Where:

EM = Earnings management

BACA = Board academic

BAUD = Board audit

 $\beta_0$  = Constant or intercept

BCRED = Board credit

 $\mu$  = Error term $\beta_1 - \beta_3$  = Coefficient of explanatory variables

Table 1. Variable measurement

| Variables           | Nature      | Proxies                                                        | Measurement                                                                                                                                                                                                                                                                                                                     |
|---------------------|-------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Earnings management | Dependent   | Absolute value of the discretionary loan loss provision (DLLP) | Discretionary loan loss provision (Beatty et al. 2002).<br>$LOSS_{it} = \alpha_{it} + \beta_1 LOGTA_{it} + \beta_2 2NPL_{it} + \beta_3 Allowances_{it} + \beta_4 RE\ Loans_{it} + \beta_5 CI\ Loans_{it} + \beta_6 DI\ Loans_{it} + \beta_7 AG\ Loans_{it} + \beta_8 Cons\ Loans_{it} + \beta_9 FG\ Loans_{it} + \epsilon_{it}$ |
| Board attributes    | Independent | Board academic (BACA)                                          | 1 for board with a member who is from the academic or has PhD and 0 for otherwise (Ma et al., 2019)                                                                                                                                                                                                                             |
|                     | Independent | Board audit (BAUD)                                             | Proportion of audit committee members to the total number of directors on the board (Saona et al., 2020)                                                                                                                                                                                                                        |
|                     | Independent | Board credit (BCRED)                                           | Proportion of credit committee members to the total number of directors on the board (Saâda & Gafsi, 2019)                                                                                                                                                                                                                      |

#### 4. Results and discussion

In this section, descriptive statistics is used to analyses the trend of the variables. Correlation matrix is then followed. Additionally given, are the results of the model estimations as well as the inferences drawn out of the hypotheses tested. Then finally, the discussions of the findings as well as analyses of the implication of the policies derived are discussed.

##### Descriptive statistics

Descriptive statistics are used in this section for presentation and description of the nature of the variables of the study. The minimum, maximum, mean and standard deviation are displayed in Table 3.

Table 3. Descriptive statistics

| Variables | Mean   | Std. Dev | Min    | Max    |
|-----------|--------|----------|--------|--------|
| EM        | 0.0169 | 0.0131   | 0.0008 | 0.0912 |
| BACA      | 0.5787 | 0.4956   | 0      | 1      |
| BAUD      | 0.3436 | 0.1385   | 0.1300 | 0.7800 |
| BCRED     | 0.5526 | 0.1608   | 0.2500 | 0.9100 |

Source: stata output, 2021

Current study covers the fourteen deposit money banks listed on the Nigerian stock exchange

for a period from 2010 to 2019. The nature of the data of the study's data is balanced panel data of 140 firm-year observations. Table 3 displays the mean average value of earnings management (EM) of 0.017 implying that the earnings management within listed Nigeria deposit money banks stood at 17% within the period. The value of the standard deviation stood at 0.013 suggesting that there is no large data dispersion away from the mean due to the fact that the standard deviation is slightly lower. Table 3 also indicates 0.0008 as minimum EM and 0.091 as maximum signifying that within the period, the listed Nigerian deposit money bank's earnings were managed with less than 1% as minimum and 9% as maximum.

Table 3 also indicates an average proportion of board academic (BACA) representation on the board as 0.58 representing 58% with standard deviation of 0.50. This suggest that the representation of the BACA on the listed Nigerian deposit money banks' board is averagely 58%. The minimum and maximum values stood at 0 and 1 respectively. This implies that within the period of the study, there are banks that do not have board member from academics. The standard deviation indicated that the dispersion of the BACA data is 50%, implying that

the BACA data did not deviate far away from the mean. Board Audit (BAUD) as indicated in Table 3 has a minimum 0.13 and a maximum 0.78 indicating that a minimum membership of the audit committee in the study's period was 13% and maximum membership of the committee was 78%. This suggests that within the period of the study there is a bank that has 13% of the members of its board in the audit committee and there is a bank with 78% of its members in the board's audit committee. The average proportion of the audit committee was 0.34 and a standard deviation of 0.14 which is not far away from the mean

Lastly, board credit (BRED) showed a minimum value of 0.25 and a maximum value of 0.91 indicating that there was a bank within the study period that had 25% of the board of director members in the committee of credit as well as another with 91% within the period. 0.55 represents the value of the mean, implying that averagely, there were, at least, 55% of members of the board in the credit committee. The standard deviation of 0.16 for this variable implies that it a bit far away from the mean.

### Correlation analysis

Table 4 presents the dependent and the independent variables correlation analysis. Likewise, it displays the association amongst the independent variables themselves. It additionally presents the correlation coefficients between all the pairs of the variables.

Table 4. Correlation matrix

| Variables | EM     | BACA  | BAUD  | BDRED  |
|-----------|--------|-------|-------|--------|
| EM        | 1.000  |       |       |        |
| BACA      | -0.102 | 1.000 |       |        |
| BAUD      |        |       | 1.000 |        |
| BCRED     | 0.074  | 0.141 | 1.000 |        |
| EM        | -0.053 | 0.106 | 0.241 | 1.0000 |

Source: Stata output 2021

Table 4 is a correlation matrix table which shows that (EM) is negatively correlated with board academic (BACA) with -0.10 (10%) as coefficients

value. This implies that EM has correlated negatively with board academic. Board audit (BAUD) was discovered to have positive association with earnings management to the tune of 7%: suggesting the two variables are directly correlated. Finally, the association between board credit (BCRED) and (EM) was established to be negative to the magnitude of 5% (-0.05). This implies that an inverse relationship exists between EM and BCRED to the tune of -5%.

Table 4 showed that the relationship between board academic (BACA) and each of the independent variables, (board audit and board credit) were positive and negative respectively. The relationships between BAUD and BCRED showed positive relationships 0.24 as presented in Table 4.

The correlation among the independent variables of the research themselves were discovered to be moderate (less than - + 0.8) suggesting the absence of multicollinearity. In order to confirm this and as argued by Casey, Anderson, Mesak and Dickens (1999) to establish the presence and or otherwise of multicollinearity, Collinearity diagnostic test of Variance Inflation Factor (VIF) as well as Tolerance Values (TV) should be conducted of which was found to be consistently less than 10 and smaller than 1 respectively as presented in Table 5.

Table 5. Multicollinearity test

| Variables | VIF  | 1/VIF |
|-----------|------|-------|
| BACA      | 1.08 | 0.93  |
| BAUD      | 1.07 | 0.94  |
| BCRED     | 1.03 | 0.97  |
| Mean VIF  |      | 1.06  |

Source: Stata output, 2021

The essence for testing for multicollinearity is to confirm whether independent variables selected for a study can be combined and studied together (Gujarati, 2004). Multicollinearity test is done by testing the variance inflation factor (VIF) and the tolerance value (Tobachnick & Fidell, 1996). Table 5 provides the multicollinearity test of the study's independent variables.

The multicollinearity test result of each variable falls within the tolerable threshold as argued by (Casey et al., 1999; Wooldridge, 2013). Thus; in this study variance inflation factor (VIF) as well as tolerance values (TV) were revealed to be less than 10 and less than 1 respectively for all the explanatory variables in the regression result.

Similarly, the mean VIF of 1.06 further confirm this claim. Therefore, multicollinearity is confirmed not to be a threat in current study (Tobachnick & Fidell, 1996).

### Histogram test of residual (earnings management)

The regression model's basic assumption is normality of residuals. Thus, where the residuals are not normal, then there may be problem with the model's fitness, reliability and stability (Tobachnick & Fidell, 1996). The study's residual data, which is the earnings management measure was subjected to normality test using the histogram test of residual. From the test conducted, It is observed that the curve cut across all the histogram bars ranging from negative to positive values signifying that the residuals are normally distributed (Wooldridge, 2013).

### Post estimation test

This section presents the results from the post-estimation tests conducted. The post estimation test conducted includes; heteroscedasticity, fix effect, random effect and Hausman. Heteroscedasticity test is conducted to check whether the variability of the error terms is constant or not (Gujarati, 2004). The existence of heteroscedasticity shows that the variation of the error term is not constant which

could affect the best linear unbiased estimators (BLUE) of the study (Wooldridge, 2013). The tests result is presented in Table 6 below:

Table 6. Post-estimation test

| Test    | Chi2   | Prob  |
|---------|--------|-------|
| Hetest  | 3.11   | 0.078 |
| Hausman | 212.27 | 0.000 |

Source: Stata output, 2021

The result of the test obtained indicates the absence of heteroscedasticity as the probability of the chi square is statistically insignificant at 5% level of significance. This is proved by the chi2 value of 3.11 with a probability of 0.078. This suggests that the possible interpretation of the original Ordinary Least Square (OLS) regression might be suitable because of the possible non-violation of classical linear assumption of OLS. However, fixed and random effect regression was run.

To be properly guided on which result best fits the study between fixed and random effect models, Hausman specification test for fixed and random effect was conducted to choose the preferred model. Hausman specification test tests whether the unique errors (stochastic disturbance) are correlated with the independent variables (Moody, 2009). The outcome of the test discloses that they are not correlated since the chi-square probability for the models is significant at 1% which directed us to interpret the result of the fixed effect model (see Table 6)

### Regression results

This section presents and discusses analysis of the results of the study's regression models (fix effect model). Presented in Table 7 are the results.

Table 7. Regression result

| Variables | Observation | Coefficients | t-values | p-values |
|-----------|-------------|--------------|----------|----------|
| BACA      | 140         | 0.015        | 3.91     | 0.760    |
| BAUD      | 140         | -0.001       | -0.14    | 0.000    |
| BCRED     | 140         | -0.009       | -0.73    | 0.740    |
| CONSTANT  | 140         | 0.136        | 1.90     | 0.000    |
| R-Square  |             |              |          | 0.237    |
| F         |             | 6.42         |          | 0.000    |

Source: stata output, 2021

The variables' R<sup>2</sup> showed a cumulative figure of 0.237, which is the multiple coefficients of determination, provides the proportion (percentage) of the total variation in the dependent variable (earnings management) as explained jointly by the explanatory variables (board academic, board audit and board credit). Therefore, it is signified that 24% of the total variation in earnings management (EM) of listed Nigeria deposit money banks is accounted for by the joint contribution of board academic, board audit and board credit. The f Statistics value of 6.42, for the model with a p-value of 0.000 which is statistically significance at 1% significance level indicated that the explanatory variables are carefully selected and utilized to predict the dependent variable (EM) of the study. Consequently, the model is fit for the study and that there is a very high chance that the associations among the study variables were not incidental. Similarly, the independent variables reliably explained the dependent variable as reported by Table 7. Hereafter, the analysis of the individual explanatory variable as against explained variable is provided as under.

#### **Board academic and earnings management**

Table 7 showed a coefficient value of board academic as 0.015 and an associated t-value of 3.91 with a p-value of 0.760 (insignificant at 10%). This implies that as the proportion of directors from the academic on the board of listed Nigeria deposit money banks increase, it will lead to 1.34 increase in the earnings management but insignificantly. This finding is surprising as it contradicts the prior expectation of the research. Similarly, it contradicts the agency theory which was used to underpin the study. This may be due to the fact that those directors from the academia on the board of deposit money banks listed are not from finance or management discipline. The policy implication of the finding is that when appointing an academic director, the director should be knowledgeable in finance and management. This finding therefore, failed to provide evidence of accepting the first hypothesis of

the study. This is consistent with the findings of White et al. (2014).

#### **Board audit and earnings management**

With reference to board audit and earnings management, the statistical result from the model reveals a coefficient figure of -0.0014, a t-value of -0.14 and an associated p-value of 0.000 that is significant at 1% level of significance. This implies that as the membership of audit committee increases the earnings management of listed Nigerian deposit money banks decreases. The result also indicated that as the proportion of audit committee members on a board of deposit money banks listed in Nigerian increase, the management of earnings decrease by 0.001. The result agrees with the research's prior expectation and also confirms the agency theory which suggest that board of directors' checkmate the activities of managers which in effect reduces earnings management. The result is also in line with the reality as audit committee is seen to ensure that quality of earnings is enhanced thereby improving the quality of financial report. This result is in support of the findings from the study of (Kapkiyai et al, 2020); (Hamdan, 2020). Bala and Ibrahim (2014) but contrary with the result of (Sultana, 2015). This result gives a reason for accepting hypothesis two of the study.

#### **Board credit and earnings management**

With respect to board credit (which is measured as the proportion of credit committee member to the total number of board members) and earnings management, the result as revealed by Table 7 shows the value of coefficient as -0.0089, a t-value of -0.73 and its associated p-value of 0.740 (insignificance). The result shows that as the membership of the board credit committee rises the tendency for managers to manage earnings decreases, thou insignificantly. The implication of the result is for every proportionate rise in the membership of the credit committee the quality of the earnings increases by 0.009 but insignificantly. This result may be due to

the fact that members of the committee are not knowledgeable in credit matters. When the credit committee members are knowledgeable in credit matter, it will confirm the agency theory used to underpin the study and also confirm what is obtained in practice. As a result, hypothesis three of the study is rejected. The outcome agrees with the findings of (Tao & Hutchinson, 2013); (Viscelli et al., 2017)

## 5. Conclusions

Based on the findings of the study, it is concluded that high proportion of directors from the academia does not guarantee decreased earnings management in listed Nigeria deposit money banks. Similarly, credit committee membership does not guarantee the reduction in the management of earnings of deposit money banks listed in Nigerian. However, audit committee was found to be effective in reducing earnings management. It is therefore recommended that when appointing directors from the academia and into credit committee, they should be those knowledgeable in management or finance and credit matters respectively. Additionally, audit committee should be encouraged in listed Nigerian deposit money banks because of the role they play in constraining earnings management in the banks. The study will be helpful to decision-makers in Nigeria as they draft and evaluate legislation governing corporate governance.

The current study is limited to the fact that many other variables of board attribute were not captured which leaves a further area of study for researchers to explore by investigating those variables effect on earnings management.

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