



## **EFFECT OF INTERNAL AUDIT ON PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA**

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### **ABSTRACT**-----

*The study examines the effect of internal audit on the financial performance of deposit money banks (DMB) in Nigeria. Specifically, the study ascertained the effect Audit Committee independence, Audit committee size, Audit committee gender diversity on the financial performance of deposit money banks. The study employ ex post facto research design. The sample size for this research work is 12 listed DMBs from 2010 – 2018. The sources of data employed in this study are secondary data from the Nigeria Stock Exchange Fact Books and related companies' Annual Financial Reports for the period covered in the study. The study made use of spearman rank correlation analyze and also employed panel least square regression analyses in order to analyze the data for the study. The findings of this study indicated that audit committee independence has a negative insignificant effect on the performance of listed DMBs in Nigeria, audit committee size has a positive significant effect on the performance of listed DMBs in Nigeria, audit committee gender diversity has a positive insignificant effect on the performance of listed DMBs in Nigeria. The researcher recommends that there is need for banks to have an audit committee that is not too small such that there will be no lack of expert advice and too large such that it has free riders that are prone to follow other member's opinion. The size of the audit committee should also be in a way that the process of accounting and finance are protected such that it will lead to increased performance.-----*

### **INTRODUCTION**

Previously, internal audit has served as an elementary procedure comprising principally of examining documents, counting assets and reporting to board of directors, management or external auditors. It had been known to enhance the objectives and discussions within and outside the organizational department which in turn enhanced the value of the organization Suraj (2017). Management is held with the responsibility to increase shareholder's wealth while deploying competence in the performance of its duties. Internal audit therefore checks on the performance in accordance with contemporary practices. In managing shareholders' money, organizations have to be transparent and efficient, hence, they need competency and professionalism from internal audit and scarce resources must be distributed more efficiently to minimize and manage risks.

The introduction of modern technology has made it very possible to track and examine data faster, therefore making it important and essential for the organization to receive advice from the internal audit department. According to Institute of internal auditors (2016), internal audit revolves around objective, assurance, independent and consultative design activities that add value to the overall operations of the organization.

Independence of internal auditor refers to a state of not being controlled by other people or things like financial benefit. Nancy (2013), stated that independence is the essence of auditing. An internal auditor must be independent of both the personnel and operational activities of an organization. Otherwise, the integrity of the



auditor's opinion, conclusion and recommendations would be compromised. This means that for an effective attainment of the function and objective of an internal audit, independence is necessary.

Again, the soundness of a country's economy is dependent to a large extent on the size, strength and health of the banking sector. Bank profitability is essential for improved financial performance; its relevance goes beyond individual bank profitability to economic stability. This is because it is the responsibility of the audit committee members to brainstorm and create plans and procedure for repetitive monitoring of the internal control system of the bank and its procedures internal capital and as such, to also assists management and board of directors in the effective performance of their responsibility. Fanen Anande (2020), states that large size audit committees can protect and control the process of accounting and finance compared to small committees because of greater transparency with respect to shareholders and creditors leading to improved firm performance.

Furthermore, in the context of banking Njung'e Peninah (2019), posit that every banks should have an internal audit department with regard to the volume and nature of its activities can rely. He went further to explain that in smaller banks internal audit is often provided externally. The internal audit in a banking institution must comprise audit committee gender diversity which involve both competent men and women of high intellectual ability from the day to day internal control processes. In this way the internal auditors would perform their duties objectively and impartially. This is because the objective related to internal Audit control are associated with audit committee established policies, processes and practices in the five component of management internal control, such as the control environment, risk assessment, risk focused control activities, information and communication and monitoring activities. Internal Auditors perform audits to evaluate whether the five component of management control are present and operating effectively, if otherwise they provide advice or recommendation. Hence, internal audit which act as a supervisory body can save the institute from negligence and irregularities hence, pushing the business to attain high levels of output and profit. From the foregoing, the primary roles of the audit committee include overseeing the financial reporting process and to monitor the management, because management intends to manipulate figures for their own interest.

However, due to collapse of big corporate organizations for instance, firms such as Enron, WorldCom and Satyam, effectiveness of audit committee and external auditors have been questioned by regulators in ensuring that financial statements are fairly stated to reduce ineffectiveness. The Federal Government of Nigeria (FGN) through the Central Bank of Nigeria (CBN) over the years has carried out several reforms to enhance the profitability and stability of Nigerian deposit money banks (DMBs). However, in recent times fraudulent practices has been prevalent in the Nigeria banking industry. This practices have deeply eaten down the reputation and opportunities of most banking organization especially the deposit money bank. History has it that by 1952, total number of 25 banks were shut down to depositors in Nigeria as a result of an untold hardship for customers. A story of a customer of farmer's bank limited who on finding that his bank had closed its doors dropped dead by the bank premises.

According to the report made by NDIC, it stated that "the amount involved in the fraudulent activities documented increased by ₦3.33 billion from the ₦ 8.68billion reported in 2016 to ₦12.01 billion in 2017". Furthermore, the "online and ATM card – related- fraud types reported constituted 92% of all the reported cases, 63.66% of losses in the industry in 2017". "The report also documented other miscellaneous crimes such as fraudulent transfers and withdrawals, cash suppression, unauthorized credit and fraudulent conversion of cheques. According to NDIC report the result of fraud and forgeries during the year 2017, were 22 licensed Deposit Money Bank and 4 merchant bank rendered 286 returns on terminated staff. The report stated that out of the 26,182 fraud cases reported by the 26 licensed banks 320 cases were attributed to internal collaboration by bank staff. Losses from fraud cases in the DBMs have remained high and is likely to rise in the nearest future as result of inefficiency on the part of internal audit department. From the foregoing it is clearly seen that there is a gap in knowledge and in order to resolve this gap left by literature in terms of inconclusive outcome, this study is set to focus on the effect of internal audit control on the performance of selected DMBs in Nigeria.

## **OBJECTIVES OF THE STUDY**

The main objective of the study is to ascertain the effect of internal audit on the performance of selected deposit money banks in Nigeria. The specific objectives are designed to:



1. To ascertain the extent to which audit committee independence affect Return On Capital Employed of deposit money banks in Nigeria.
2. To examine the extent to which audit committee size affect Return on Capital Employed of deposit money banks in Nigeria.
3. To determine the extent to which audit committee gender diversity affect Return On Capital Employed of Deposit Money Banks in Nigeria.

### **CONCEPT OF INTERNAL AUDIT**

Internal audit has been seen as one of the major management tool used for achieving effective control in organization. Audit is derived from the Latin word “audire” meaning “to hear”. “Auditing basically focuses on the verification accounting data which involves determining the accuracy and reliability of accounting information and report. Internal auditing may be defined in several ways depending upon what purpose is to be served. Oscar Scarion (2019) defined internal audit practice as the examination of the financial report of an organization as represented in the annual report by someone independent (internal Auditor) in the organization. Nancy (2013) he defined internal audit as an independent, objective assurance and consulting activity designed to add value and improve an organizational operation. Suraj (2017), view internal audit as significant part of internal control which involves oversight undertakings by the audit committee and the panel of executives to ensure that financial reporting practice is sound and up to the mark.

Oscar Scarion (2019), stated that, this is clear that internal audit is a significant part in the control system, that it affects the bank institutions financial performances. Also, Nancy (2013), opined that although, the need for objectivity and impartiality is of particular importance for the internal Audit department in a banking institution, this does not exclude the possibility that this department, too, may contribute to advisory and consultancy activity, if the independence analyses and evaluation is ensured. Some banks have also introduced a system of evaluating their activities, which does not replace, but supplement the function of the bank internal audit.

Hence, the scope of audit work includes evaluating and improving the effectiveness of a company’s governance process since the new internal auditing concept expects the internal audit to function efficiently, effectively and economically the organizational activities and controls besides assisting management in high-level decision-making.

### **Internal Audit and Financial Performance (Return On Equity)**

Egolum, Ugonabo, and Okonenwa (2021), opines that a firm that performs well is one that successfully achieves its goals and is strategically executes tasks in achieving its goals. Performance refers to the ability to operate efficiently, profitability, survive growth and react to the environmental opportunities and threats. Thus, performance can be measured by how efficient an organization is in use of resources in achieving its objectives. It is the measure of attainment achieved by an individual, team, institution or process. Hence, company’s performance can be measured in different ways, measurement varies in respect to the company’s aims and objectives. A company might only want to achieve all its objective at the end of a financial period and the management would be satisfied that the company has a great performance for that year, while to another company it might be only to maximize profit and the management would be satisfied by its performance.

Return on equity (ROE) is a ratio that provides investors with insight into how efficiently a company (or more specifically, its management team) is managing the equity that shareholders have contributed to the company. It is sometimes called “return on net worth.” The formula for ROE is:

#### **Net Income**

Shareholders' Equity.

The numerator is net income, which is the bottom-line profit reported on a firm’s income statement. Free cash flow (FCF) is another form of profitability and can be used in lieu of net income. The denominator shareholders’ equity measures as assets minus liabilities on a firm’s balance sheet and is the accounting value that is left for shareholders should a company settles its liabilities with its reported assets.



Most internal audit professionals argue that for an improved financial performances of banks there is always a correlation with an effective internal audit. Therefore, an effective internal audit service can, in particular, help reduce overhead, identify ways to improve efficiency and maximize exposure to possible losses from inadequately safeguarded company assets all of which can have a significant effect on the financial performance of an organization.

#### **Audit Committees independence and Financial Performance**

According to Egolum, Ugonabo, and Okonenwa (2021). to ensure effectiveness of board's audit committee towards enhancing the quality of financial statements, such committee should consist of not less than three members; who should be mostly drawn from the group of independent non-executive directors. Inadequate membership of the audit committee might negatively influence its effectiveness in fulfilling its duties. It is expected that an independent audit committee should be able to not only provide unbiased assessment and judgment but should also be capable to effectively monitor the management team. Audit committees influence financial performance through its independence, composition and expertise in review of the quality of the financial statements of the company. Gacheru (2013), examined the relationship between the board audit committee effectiveness variable and financial performance of commercial banks in Kenya over the period of 2007 to 2011, using structural and operational characteristics of audit committee (ACs) for the banks; The study found that board audit committee effectiveness variable has a significant positive relationship with financial performance of commercial banks in Kenya. The study was carried outside the country using only audit committee effectiveness, which cannot be fitted in Nigerian environment. However, this study seek uses audit committee independence. **Hence, the hypothesis, audit committee independence has not significantly affect return on equity of selected deposit banks in Nigeria.**

#### **Audit Committees Size and Financial Performance (Return on Equity)**

According to Fanen Anande (2020), the soundness of a country's economy is dependent to a large extent on the size, strength and health of the banking sector. Bank profitability is essential for improved financial performance; its relevance goes beyond individual bank profitability to economic stability. The study used various variables as determinants of Bank Financial Performance. The paper concluded that bank-specific factors, such as capital efficiency, operational efficiency, credit risk, and bank size significantly determine the financial performance of Nigerian banks. This study combines audit committee independence, audit committee gender diversity with audit committee size to ascertain their effects in banking sector **Hence, the hypothesis, audit committee size has not significantly affect return on equity of selected deposit banks in Nigeria.**

#### **Audit committee gender diversity and Financial Performance (Return On Equity)**

Fanen Anande (2020), asserted that the audit committee gender diversity can play a significant role in overseeing the audit process and helping to mediate disputes between board and the auditor. Morah (2013), examined the effect of internal audit on financial performance in commercial banks in Kenya. Internal audit was looked at from the perspective of internal audit standards, professional competence, internal controls and independence of internal audit by the researcher. From the findings, the researcher concluded that the internal audit standard, internal controls and professional competence had a positive relationship with the financial performance of the commercial banks. The study did not include gender diversity as a variable in the study. **Hence the hypothesis of this study, audit committee gender diversity has not significantly affect return on equity of selected deposit banks in Nigeria.**

#### **DEPOSIT MONEY BANKS IN NIGERIA**

Deposit Money Banks is an institution which accept deposits, makes business loans and offers related services. These institutions operate with the aim of making profit. In Nigeria, deposit money banks are licensed and regulated by the central bank of Nigeria. As a result of the intermediary function banking sector play between lenders and borrowers, banks role in the economy is very vital. They are considered the pillar of any economy



because the activities of microeconomic, as well as macroeconomic of an economy, largely rely on them. An efficient financial system improves banks' profitability, increases the volume of funds flowing from savers to borrowers, and ensures a better quality of services offered to customers Fanen Anande (2020). The Banking industry in Nigeria is governed by the Companies Allied Matter Act, the BOFIA, the Central Bank of Nigeria and the various prudential guidelines issued by the Central Bank of Nigeria (CBN). Banks serve as the custodians of general public's money, which is accepted in form of deposit and pay out on the client instruction.

Over the last few years, the Banking sector in Nigeria has declined many banks for the past decade banks in Nigeria has failed leading to withdrawal of license from those banks or other healthy financial institution acquiring them. Nevertheless, some banks in Nigeria has also succeeded, thus, continued growth in assets, deposits, profitability and products/Services offering. The growth has been mainly underpinned by, an industry wide branch network expansion strategy both in Nigeria and Africa end even the world at large. This growth could be seen as the large number of services and a move towards meeting customers' needs rather than the traditional banking system. Nancy (2013) stated that, as a result of this growth the need for internal audit has increased in banks to enhance asset management, control of risks and management controls.

### **THEORETICAL FRAMEWORK**

This theory was propounded by Jensen (1976). This theory is widely known to be used in accounting literature to give further explanation and also to predict the appointment and performance of an auditor and financial consultant. Nancy (2013) went further in explaining the agency theory, is concerned with resolving problems that can exist in relationship that is between principals (such as shareholders) and agent of the principals (example, company Executives). it state that audited financial statement can enhance shareholder's faith in management stewardship. There are different groups in the world of business that participate in and are affected by financial reporting of the regulatory agencies. These groups are shareholders, managers, Banks, creditors, employee, and other groups. The major users of financial report are the shareholders including individual with relatively small share and institutions such as Banks or insurance companies. The decision made by these groups most times is based on financial report and also on the performance of the company's management, who is given the responsibility to act in the investor's interest.

Egolum, Ugonabo and Okonenwa (2021). recommended establishing oversight committees including audit committee for the auditing of financial statements and appointment of directors which are supported by agency theory. It considered board committees which provides an additional control mechanism for increased accountability; thereby enhances the assurance that the interests of the shareholders were being safeguarded. Agency theory can provide for richer and more meaningful research in the internal audit discipline. Internal audit in common with other intervention mechanism like financial reporting and external auditing helps to maintain cost efficient contracting between owners and managers. Agency theory may not only to help to explain the existence of internal audit in an organization but can also serve as tool used to explain the characteristics of the internal audit department for example, its size and scope of activities such as financial versus operational. Agency theory can be employed to test empirically whether cross sectional practice between internal auditing practices reflect the different contracting relationships emanating from difference in organization form.

### **EMPIRICAL REVIEW**

Morah (2013), examined the effect of internal audit on financial performance in commercial banks in Kenya. Internal audit was looked at from the perspective of internal audit standards, professional competence, internal controls and independence of internal audit by the researcher. From the findings, the researcher concluded that the internal audit standard, internal controls and professional competence had a positive relationship with the financial performance of the commercial banks. The researcher further recommended that management should adopt effective internal audit practice.

Afolabi, Ogunleye and Olukoya (2020), this study investigated and establish the relationship between internal control system and performance of deposit money banks in Osun state. Internal controls were looked at from the perspective of control environment, risk assessment, control activities, information and communication while





financial performance is measured by liquidity and solvency. The study came to a conclusion that internal control has a positive relationship with the financial performance of deposit money banks. The study recommended that adequate measures should be put in place in various deposit money banks to ensure that the system of internal controls are adequate and that the effort of the employee working towards the goal congruence.

Gacheru (2013), examined the relationship between the board audit committee effectiveness variable and financial performance of commercial banks in Kenya over the period of 2007 to 2011, using structural and operational characteristics of audit committee (ACs) for the banks; Prudential Guidelines. The target population of this study was all registered commercial banks operating in Kenya. The study conclusion that the board audit committee effectiveness variable has a significant positive relationship with financial performance of commercial banks in Kenya. The study further made recommendations that commercial banks in Kenya and elsewhere should pay attention to board audit committee effectiveness variables particularly emphasizing on competence, committee and independent.

Scarion Oscar (2019), assessed internal audit practices and financial performance of Banks in Tanzania, case study of Commercial Rural Development bank. The specific objectives were; to assess the relationship between internal audit independence and financial performance of CRDB, to analyze the effect of internal audit quality practices on financial performance of CRDB and to examine the effect of internal audit control system on financial performance of CRDB. The study target population comprised of 105 individuals drawn from different units; and the sample size of this study was 83 respondents. The researcher analyzed data both quantitative and qualitative data. This study recommended after findings that, the internal audit department should be responsible to the organization internal audit committees and internal audit management with sufficient authority to promote independence to influence financial performance, and there is need for the internal auditors to update their qualities through internal auditor's skills and internal auditor's competence

Hussaini Umar and Muhammed Umar Dikko (2018), researched on the effect of internal control on the performance of commercial banks in Nigeria: A proposed Framework. The objective of this papers is to primarily through relevant literature, review the effect of internal control systems on the performance of commercial banks in Nigeria. The researcher investigates numerous literatures on the components of internal control to shed lights on how they may be operated and coordinated to achieve the goals. This study seeks to address measuring internal control effectiveness and bank performance, which could be used by banks and other regulatory bodies. The contribution is mainly beneficial for banks and government by providing input for policymakers and in making various business decisions.

Fanen, Avanenge and Alematu (2020), investigate on the topic "Determinants of Bank Financial Performance: A Study of Nigerian Deposit Money Banks" seeks to investigate the effects of bank-specific and macroeconomic determinants on bank profitability; a panel data approach has been adopted and effectively applied to 14 Nigerian deposit money banks ranging from 2012 to 2018 representing 98 firm-year observations. The study adopts panel data regression analysis Fixed Effects Model (FEM) and Random Effects Model (REM). The paper concluded that bank-specific factors, such as capital efficiency, operational efficiency, credit risk, and bank size significantly determine the financial performance of Nigerian banks. Also, the gross domestic product (GDP) as a macroeconomic factor plays a significant role in determining the profitability of banks in Nigeria. The study recommends that policy should also be directed towards improving the efficiency and resilience of Nigerian banks towards withstanding economic shocks that may occur, such as a global pandemic.

## **METHODOLOGY**

This study used *ex post facto* research design. The population of this study is made up of all deposit banks that are listed on the floor of the Nigerian stock exchange market for the period between 2010 and 2019. As at 31<sup>st</sup> December, 2019 the total number of listed banks were 14.

The sample of this research is calculated by using Taro Yamane (Yamane, 1973) formula with 95% confidence level. The sample size of this study is 13 listed deposit money banks. However, we deselected the bank that got listed on the exchange after the start period (2010). Thus, our final sample size consists of 12 listed commercial banks from 2010 to 2019. This study employed secondary data source and the data for the sampled



listed banks were sourced from the Nigerian Stock Exchange Fact Books and related companies’ Annual Financial Reports for the periods covered in the study. Firstly, the study made use of Spearman Rank correlation analysis and also employed Panel Least Square (PLS) regression analyses.

**Model Specification**

The model for this study is adopted from the study of Chan and Li (2008) but was modified to suit the current study and expressed econometrically as:

$$ROCE_{it} = \beta_0 + \beta_1Aucind_{it} + \beta_2Aucgendiv_{it} + \beta_3Aucsize_{it} + \beta_4Bmeet_{it} + e_{it}$$

**Where:**

- TobinQ = Return on Capital Employed
- Aucind = Audit committee independence
- Aucgendiv = Audit committee gender diversity
- Aucsize = Audit committee size
- Bmeet = Board meeting
- “{i}” = Cross Section (Sample Banks)
- “t” = Time Frame (2010 to 2018)
- e<sub>it</sub> = Stochastic error Term

**Table 1: Operationalization of Variables**

Variables	Measurement	Source
ROCE (Dependent Variable)	Return on capital employed in percentage is computed as profit after tax divided Total equity and Total liabilities	Chan and Li (2008)
Audit committee independence (Independent Variable)	Audit Committee Independence in percentage is computed as the non-directors in audit committee to audit committee member’s size.	Chan and Li (2008)
Audit committee gender diversity (Independent Variable)	Audit Committee Diversity in percentage is computed as Female audit committee members to total audit committee members.	Chan and Li (2008)
Audit committee size (Independent Variable)	Audit Committee Size in numbers is the total directors and non-directors in the audit committee.	Chan and Li (2008)
Board meeting (Control Variable)	Board Meetings in numbers is the number of board meeting held by the board of directors in a year.	Chan and Li (2008)

Source: Researcher’s Compilation 2021



**DATA PRESENTATION, ANALYSIS AND DISCUSSION**

**Descriptive Statistics**

The table 2: below shows the descriptive statistics for the firm by year category

fiscalyear	roce	aucind	aucgenmv	aucsize	bmeet
2010	3.250833	48.94167	.1666667	6.333333	5.583333
	2.984486	2.494583	.3892495	.8876254	2.810963
	.04	42.86	0	6	2
	9.54	50	1	9	12
	39.01	587.3	2	76	67
2011	-.0475	50	0	6	6.666667
	2.862933	0	0	0	2.309401
	-7.85	50	0	6	4
	3.09	50	0	6	12
	-.57	600	0	72	80
2012	2.001667	50	.1666667	6	5.166667
	1.809223	0	.3892495	0	1.749459
	-2.06	50	0	6	2
	5	50	1	6	8
	24.02	600	2	72	62
2013	1.3175	50	.1666667	6	6.583333
	2.479326	0	.3892495	0	3.146667
	-5.59	50	0	6	3
	4.28	50	1	6	13
	15.81	600	2	72	79
2014	2.156667	50	.25	6	6.083333
	1.003615	0	.452267	0	2.391589
	.62	50	0	6	4
	4.19	50	1	6	12
	25.88	600	3	72	73





# International Journal of Southern Economic Light (JSEL)

- Peer Review Journal

2015	1.6225	50	.1666667	6	4.583333
	1.069538	0	.3892495	0	.6685579
	.36	50	0	6	4
	3.94	50	1	6	6
	19.47	600	2	72	55
2016	1.585	51.04167	.0833333	6.166667	5.416667
	1.19697	3.608439	.2886751	.5773503	1.831955
	.36	50	0	6	4
	4.24	62.5	1	8	10
	19.02	612.5	1	74	65
2017	.9258334	52.38167	.1666667	6.083333	6.25
	3.567914	15.32933	.3892495	.7929615	1.712255
	-9.53	42.86	0	4	4
	5.09	100	1	7	9
	11.11	628.58	2	73	75
2018	1.968333	51.19	0	6.166667	6.166667
	1.621665	2.779241	0	.3892495	1.749459
	.54	50	0	6	4
	5.62	57.14	0	7	10
	23.62	614.28	0	74	74
Total	1.642315	50.395	.1296296	6.083333	5.833333
	2.326055	5.27398	.3374615	.4560087	2.17247
	-9.53	42.86	0	4	2
	9.54	100	1	9	13
	177.37	5442.66	14	657	630

## Authors Computation 2021

The table above reveal the descriptive statistics of the study. From the table we find that on average the variable of return on capital employed reduced from 3.25 in year 2010 to 2.00 in year 2012 and further down to 1.32 in year 2013. Compared to the average value of 3.25 witnessed in year 2013 we still notice a decline in year 2014 (2.16) and even more decline in (1.62) in year 2015. More still, we see it drop to 1.59 in year 2016, 0.93 in year 2017, and to 1.97 in year 2018. Overall, we observed a decline in return on capital employed for our sample firms during the period under study. Audit committee independence which measures the ratio of shareholders' representative on the committee to the total number of audits committee members, shows that on average, 49% of the members constitute shareholders' representative in year 2010. This proportion increased to 50% over the period 2011 to 2015, and then increased again to 51% through year 2016 to year 2018. Overly, we observed that shareholders' representative on average was higher for the firms in our study during year 2017. Female member on the audit committee which represents audit committee gender diversity is seen to be 17% on average in year 2010, year 2012, year 2013, and year 2017. We also observe that gender representation was 8% in year 2016. For the variable of audit committee size, we find that on average audit committee size (6) met the recommended number by regulators. For the control variable, on average we find that the board met more in year 2011 and year 2013 which were about 7 times.

## Test for Normality Residua

One of the assumptions of ordinary least squares regression is that the data is normally distributed. In other words, the observations follow a normal (Gaussian) distribution. Therefore, it is assumed that the population from which the samples are collected is normally distributed. However, the null hypothesis is that "the sample distribution is normal." If the test is valid (significant), the distribution is non-normal.

The researchers relied on the results of Mendes and Pala (2003) who concluded that the Shapiro-Wilk test is the most powerful normality test. Therefore, the researchers conducted a residual normality test, as shown in the table below.



**Table 3: Normality of Residua Result**

Variable	Obs	W	V	z	Prob>z
roce	108	0.80887	16.830	6.289	0.00000
aucind	108	0.54776	39.822	8.208	0.00000
aucgendiv	108	0.89979	8.824	4.851	0.00000
aucsize	108	0.83248	14.751	5.995	0.00000
bmeet	108	0.92356	6.731	4.248	0.00001

Source: STATA'16 Output

From the table above, it is observed that the dependent variable of return on capital employed (Prob > z = 0.00000) is not normally distributed since the probability of the z-statistics is significant at 1%. The same can be said for the independent variables of audit committee independence (Prob > z = 0.00000), audit committee gender diversity (Prob > z = 0.00000), and audit committee size (Prob > z = 0.00000). The control variable of board meeting follows a non-normal distribution as well (Prob > z = 0.00001). This is justified following the study of Bera and Jarque (1982).

**Correlation Analysis**

Although the concepts of correlation and regression are intimately related, nevertheless they are different (Warren, 1971). Correlation may be described as the degree of association between two variables, whereas regression expresses the form of the relationship between specified values of the independent variable and the means of all corresponding values of the second; dependent, variable. In general, the study of interdependence leads to the investigation of correlations (Moore, 1980), while the study of dependence leads to the theory of regression. When the x variable is a random covariate to the y variable, that is, x and y vary together (continuous variables), we are more interested in determining the strength of the linear relationship than in prediction, and the sample correlation coefficient,  $r_{xy}$  (r), is the statistics (Aknazarova & Kafarov 1982). Generally, the literature suggests that extremely non-normal distributions can sometimes inflate Type I error rates for tests of the Pearson correlation coefficient and increasing sample size does not necessarily alleviate this problem. The power benefit of Spearman’s r may be the result of rank-ordering causing outliers to contract toward the center of the distribution (Fowler, 1987; Gauthier, 2001). Upon this understanding and based on the fact that the data set followed a non-normal distribution, we employ the Spearman Rank Correlation technique to conduct the possible association between the variables of interest shown in the table below:



**Table 4: Spearman Rank Test for Correlation**

+-----+					
Key					
+-----+					
rho					
Number of obs					
Sig. level					
+-----+					
	roce	aucind	aucgen~v	aucsize	bmeet
+-----+					
roce	1.0000 108				
aucind	-0.1341 108 0.1663	1.0000 108			
aucgendiv	0.0654 108 0.5011	0.0129 108 0.8945	1.0000 108		
aucsize	0.2529 108 0.0083	-0.3369 108 0.0004	-0.0904 108 0.3520	1.0000 108	
bmeet	-0.2695 108 0.0048	0.0087 108 0.9285	-0.0334 108 0.7315	-0.1765 108 0.0677	1.0000 108

**Authors Computation 2021**

Specifically, the analysis from the spearman rank correlation showed that audit committee gender diversity (0.0654 or 6%) and audit committee size (0.2529 or 25%) are positively correlated with the dependent variable of Return on Capital Employed. However, it is observed that audit committee independence (-0.1341 or -13%) and the control variable of board meeting (-0.2695 or -27%) are negatively correlated with Return on Capital Employed. All associations are seen to be weak (less than 80%) hence there is room to suspect the presence of multicollinearity in the estimated model.

**Regression Analysis**

In this study we carry out Pooled Least Square Regression analysis and proceed to check if the basic assumption of the least square regression estimator has been violated. The results obtained from the pooled least square regression is as shown in the table below;

**Table 5: Pooled Least Square Regression**

roce	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
aucind	-.0168895	.0433045	-0.39	0.697	-.1027737	.0689947
aucgendiv	.3857684	.6107971	0.63	0.529	-.8256036	1.59714
aucsize	.7027691	.5062418	1.39	0.168	-.3012422	1.70678
bmeet	-.4271009	.0958482	-4.46	0.000	-.6171931	-.2370086
_cons	.6596982	4.623388	0.14	0.887	-8.509702	9.829098

Source: STATA'16 Output

## DIAGNOSTIC TEST

### Test for Multicollinearity

The researcher employs the variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity in the return on asset model. Variance inflation factors (VIF) measures how much the variance of the estimated regression coefficients is inflated as compared to when the predictor variables are not linearly related. However, the result showed that VIF is less than five (5) for all independent variables of interest as shown below:

. vif

Variable	VIF	1/VIF
auci	1.01	0.988509
age	1.01	0.989161
auds	1.01	0.989914
bmee	1.01	0.990680
cons	1.00	0.998059
Mean VIF	1.01	

. hettest

### Test for Homoscedasticity

First, the researcher applies the Breusch-Pagan test. If the test is not rejected, then there is no ground to suspect non-normality or heterogeneity of covariances. On the other hand, if the Breusch-Pagan test is rejected, then apply a nonparametric test of homoscedasticity. The result obtained from the regression results reveals a probability value of (P-value: 0.0215) This result indicate that the assumption of homoscedasticity is been violated due to very low P-values which is statistically significant at 5% level. However, to correct for this violation the researcher employs the robust standard error regression as recommended by Greene, (2003).

### Robust Standard Error Estimator

The robust standard errors remain valid when the error terms are not independent and identically distributed (i.i.d) but suffer from heteroskedasticity or autocorrelation. A robust standard error consistently estimates the true standard error even in the face of non i.i.d. error terms. The most popular robust standard errors in econometrics are the White or Eicker-White standard errors (attributed to Eicker, 1967, and White, 1980), which protect against heteroskedasticity and the Newey-West standard errors (Newey and West, 1987), which are heteroskedasticity and autocorrelation consistent (HAC) estimates of the standard error. Hence, an important property of robust standard errors is that the form of the heteroskedasticity and/or autocorrelation does not need to be specified. Therefore, due to the presence of heteroscedasticity obtained from the panel least square regression estimator, the researcher



proceeds to employ the Eicker-White standard errors which is relied upon for hypotheses testing. The result is presented below:

**Table 7: Robust Least Square Regression for Return on Capital Employed Model**

roce	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
aucind	-.0168895	.0262579	-0.64	0.522	-.0689658	.0351868
aucgendiv	.3857684	.4544881	0.85	0.398	-.5156015	1.287138
aucsize	.7027691	.3393157	2.07	0.041	.0298164	1.375722
bmeet	-.4271009	.1352844	-3.16	0.002	-.6954056	-.1587961
_cons	.6596982	2.941876	0.22	0.823	-5.17482	6.494216

No of Observations = 108 Probability F- Statistics = 0.0064  $R^2 = 0.1989$

Source: STATA'16 Output

The table above shows the result obtained from robust standard error estimator for return on capital employed model. Specifically, the researcher provide interpretation for the robust standard error estimator as recommended by Gujarati (2004). The model's goodness of fit as captured by the Fisher statistics (3.69) and the corresponding probability value (0.0064) shows a 5% statistically significant level suggesting that the entire model is fit and can be employed for interpretation and policy recommendation. More than this, an  $R^2$  value of 0.1989 indicates that about 20% of the variation in the dependent variable is being explained by all the independent variables in the model. This also means that about 80% of the variation in the dependent variable is left unexplained but have been captured by the error term.

### TEST OF HYPOTHESES

#### **Hypotheses 1: Audit committee independence has no significant effect on performance of listed banks in Nigeria.**

The results obtained from the robust least square regression model revealed that audit committee independence has an insignificant negative effect on bank performance proxied by return on capital employed during the period under investigation. This is shown as; audit committee independence (Coef. = -0.017,  $t = -0.64$  and  $P$ -value = 0.522). Following the results above, it is revealed that the effect of audit committee independence on bank performance is negative and insignificant. This finding is consistent with the stated null hypothesis. Hence, audit committee independence has no significant effect on the performance of listed banks in Nigeria.

#### **Hypotheses 2: Audit committee gender diversity has no significant effect on performance of listed banks in Nigeria.**

The results obtained from the robust least square regression model revealed that audit committee gender diversity has an insignificant positive effect on bank performance proxied by return on capital employed during the period under investigation. This is shown as; audit committee gender diversity (Coef. = 0.386,  $t = 0.85$  and  $P$ -value = 0.398). Following the results above, it is revealed that the effect of audit committee gender diversity on bank performance is positive and insignificant. This finding is consistent with the stated null hypothesis. Hence, audit committee gender diversity has no significant effect on the performance of listed banks in Nigeria.

#### **Hypotheses 3: Audit committee size has no significant effect on performance of listed banks in Nigeria.**

The results obtained from the robust least square regression model revealed that audit committee independence has a significant positive effect on performance as proxied by return on capital employed during the period under investigation. This is shown as; audit committee size (Coef. = 0.703,  $t = 2.07$  and  $P$ -value = 0.041).





Following the results above, it is revealed that the effect of audit committee size on bank performance is positive and significant. This finding is inconsistent with the stated null hypothesis which leads to its rejection. Hence, audit committee size has a significant effect on performance of listed banks in Nigeria.

## DISCUSSION OF FINDINGS

In this study, we find that audit committee independence has an insignificant effect on performance of listed banks in Nigeria. This is in contradiction with prior studies of Chan and Li (2008) who found that independence of the audit committee positively impacts firm performance. Similarly, Musa, Success and Iyaji (2014) showed that there is a positive relationship between audit committee independence and firm performance as measured by return on asset.

In this study, we document an insignificant effect of audit committee gender diversity on performance of listed commercial banks in Nigeria. This is in disagreement with the findings of Bear, Rahman and Post (2010) who document that an increase in female directors on the board is positively associated with enhanced corporate reputation therefore will lead to high firm performance. In a similar vein, Dennis and Kunkel (2004) are of the opinion that female audit committee members tend to be more competent, active/potent, emotionally stable, rational, independent, and less hostile than male managers. As well, Bett (2014). asserts that corporations with high number of women on their board were more likely to be on the 100 best companies to work for. Furthermore, we negate the findings of Carter et al., (2010) who states that gender diversity on the audit committee is positively associated with financial performance.

Audit committee size has a significant positive effect on performance of banks in Nigeria as evidence from the findings of this study. This means that a larger audit committee will increase performance of listed banks in Nigeria. This is in line with Afolabi and Olukoya (2020) who found out that the number of members on the audit committee can potentially have a positive impact on firm performance.

## CONCLUSION AND RECOMMENDATIONS

This study examined the effect of internal audit on performance of listed Banks in Nigeria. Results from the robust standard error estimator reveal that only audit committee size has a significant effect on performance. However, we find that audit committee independence and audit committee gender diversity have no significant effect on performance of listed banks in Nigeria.

From the findings of this study, the researcher recommends that there is need for banks to have an audit committee that is not too small such that there will be no lack of expert advice and too large such that it has free riders that are prone to follow other member's opinion. The size of the audit committee should also be in a way that the process of accounting and finance are protected such that it will lead to increased performance.

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