# FRAUD AND PERFORMANCE OF DEPOSIT MONEY BANKS

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## Abstract

*Banks serves as an indispensable part of the financial system, performing a crucial role in intermediation which results in a flow of financial resources in an economy. However, the recurring nature of fraud has hindered the effective performance of Deposit Money Banks (DMBs). The broad objective of this study was to examine the impact of fraud on DMBs in Nigeria. The study was driven by the positivist research philosophy. Hence, the study adopted a quantitative research design using the ex-post facto strategy. Data was sourced from the Nigeria Deposit Insurance Corporation (NDIC) annual reports covering the period of 2006 to 2016. The Ordinary Least Square (OLS) was used to predict the impact of fraud on DMBs after fulfilling major regression assumptions. It was revealed that total fraud amount was negative, although insignificantly affect the performance of DMBs; the number of reported cases significantly and positively affect the performance of DMBs and lastly it was discovered that the total staff involved also significantly and positively affect the performance of DMBs in Nigeria. Therefore, the study concluded that the impact of fraud in the banking sector affects the performance of DMBs in Nigeria. The regulation and supervision of DMBs should be stricter, that is, the CBN and NDIC should tighten their grip in regulating and supervising so as reduce the increasing fraud incidence.*
*Keywords: Fraud, Performance of DMBs, Fraud Triangle Theory, NDIC*

## Introduction

Banks serve as a principal depository of public monies and individual savings in most economies. They act as intermediaries between lenders and borrowers, channelling funds from individuals and businesses with surplus capital to individuals and businesses with deficit capital. The resultant effect has been a flow of financial resources necessary to boost economic

activities and promote economic development. The banking system is not just limited to the movement of fund but also ensures that resources are directed to productive capacities that yield maximum returns. Hence, the effective performance of banks is very crucial, most especially to developing economies.

A retrospective look at Nigeria banking industry suggests the need for an adequate level of performance to sustain its contribution towards ensuring a vibrant financial sector and economy in general. Several reform programs have been initiated and implemented to this effect. Although the banking industry witnessed a huge reduction in the number of banks, the consolidation reform program of 2004 and the subsequent 2010 banking reform helped strengthen the viability and performance of banks in Nigeria. The Nigeria Deposit Insurance Corporation (NDIC) in its 2016 annual report rated 22 banks as sound out of the 25 Deposit Money Banks (DMBs) despite the challenges in the operating environment.

According to Oluwakayode (2017) a prevalent and key challenge in Nigerian banking industry has been fraud and forgery. Fraud doubled in Nigeria banking sector since 2007 and has led to the loss of huge amount of money in the banking industry and a decline in the nation's economy as shown in annual reports published by the NDIC. Other researchers have noted that fraud contributed considerably to the financial distress and the ultimate failure of some banks in Nigeria. Notably, Peak Merchant Bank Ltd, Savanna Bank Nigeria Plc, Oceanic Bank Nigeria Plc and Intercontinental Bank Nigeria Plc were associated with financial fraud activities (Ikpefan, 2006; Ilaboya & Lodikero, 2017).

NDIC continuously laments that the dangers associated with fraud will not only deplete the bank's capital but will erode depositor's confidence in the banking system (Ashamu, 2014). This can be likened to the systematic banking crisis of 2007 and 2008 where huge amount of money that ought to be channelled into productive activities to boost the performance of banks were kept away from the banking system. On this note, this study therefore examines the impact of fraud on the performance of Deposit Money Banks (DMBs) in Nigeria.

## Statement of Research Problem

The recurring nature of fraud in banks in recent years has posed a serious threat to the stability and survival of banks and the banking industry in general. Many of the distressed banks in Nigeria today had suffered a great deal from fraud and fraudulent activities. Despite banking reforms, regulatory supervisions by various banking regulatory bodies and internal control measures put in place, fraud is still persistent in banks. Overtime, NDIC reports had shown increased amount of fraud and fraudulent activities perpetrated in DMBs compared to other banking institutions. These reports also show consistent increase in the total amount lost to fraud compared to the provision for expected loss meant to absorb the cases of fraud loss. The costs incurred to deal with the menace of fraud consume a great deal of the banks resources and imposes additional cost to the banks. These costs would have been better off channelled to other productive activities but constitute more loss to banks.

The NDIC Act 2006 mandates banks to furnish monthly reports on fraud and fraudulent activities. However, report presented by banks only shows a minute percentage of fraud occurrences compared to other crimes constantly publicized in the media. Most banks fear the risk of exposing their inadequacies in form of reported fraud cases. Therefore, they prefer to solve cases of fraud in-house rather than complying with the directives of regulatory bodies.

This has contributed to the collapse of many banks in the past and the inability of most banks to meet up with their liquidation obligations especially to depositors and other fund providers.

More alarming is the calibre of people involved in perpetration of fraud in banks. Fraud perpetrators cut across management to the least staff such as cleaners and other casual workers. Management who ought to be the watchdog of the organisation rather constitute a great percentage in the total number of persons involved in fraudulent cases as shown in various annual NDIC reports. Also, of great concern is the collusion by various staff in perpetrating fraudulent activities. Most executive staff collude with non-executive staff to successfully implement their fraudulent act. As a result, it becomes difficult to trace fraud to its origin and originators with banks recording consistent increase in the number of staff involved in fraud cases annually.

Prior studies have examined the impact of fraud on the performance of DMBs using different performance measurements such as such as Return on Asset (ROA), Earnings Per Share (EPS), Investment, Profit Before Tax (PBT), Profit after Tax (PAT). However, the use of Total Demand Deposit as a measure of performance has received little attention to the best of our knowledge. Existing studies (kalapo & Olaniyan, 2018; kanu and Okarafor, 2013; Offiong, Udoka & Ibor, 2016,) reported mixed findings on the impact of fraud on DMBs performance thus, creating a gap for validating the inconsistency in reported findings. In view of the above, this research paper therefore examines the impact of fraud on the performance of Deposit Money Banks quoted on Nigeria Stock Exchange.

## Research Questions
The following research questions have been posed:
1. What is the effect of fraud amount on performance of DMBs?
2. Does the number of reported fraud cases affect the performance of DMBs?
3. To what extent does the number of staff involved in reported cases affect the performance of DMBs?

## Objective of the Study
The main objective of this study is to examine the impact of fraud on the performance of DMBs in Nigeria. However, the specific objectives are to:
1. determine the effect of fraud amount on performance of DMBs;
2. evaluate the impact of the number of reported fraud cases on performance of DMBs; and
3. examine the effect of the number of staff involved on the performance of DMBs.

## Literature Review and Hypothesis Development
## Performance of DMBs
Measuring the performance of banks has been a controversial issue over the years. Determining the performance of banks is usually very subjective and strongly dependent on the aspect which is to be investigated. Accordingly, Hunger and Wheelan (1997) defined performance as "the end result of activity and the appropriate measure selected to assess corporate performance is considered to depend on the type of organisation to be evaluated and the objective to be achieved through that evaluation" (as cited in Ifionu & Keremah, 2016). Performance has also been defined as how well an organisation uses resources at its disposal (Masud & Haq, 2016).

Traditionally, performance of banks are measured using quantitative financial ratios such as Profit before Tax (PBT), Return on Asset (ROA), Return on equity (ROE), Profit After Tax (PAT), Earnings Per Share (EPS) to mention a few. However, researchers are beginning to find other measurement of bank performance as the traditional measurements do not meet the needs and interest of other groups other than shareholders and prospective investors (Central Bank of Nigeria [CBN], 2013). Munir, Ramzan, Igbal, Ahmad and Raza (2012); Masud and Haq (2016) identified additional key quantitative performance indicators of banks as total assets, advances, investment and deposits.  A more contemporary approach is the use of the balance score card which identifies other qualitative measures such as customers, internal business operations, learning and growth as indicators of organisational performance.

Several factors have been found to affect the performance of banks. These factors impede the effectiveness of banks and its major role in intermediation and facilitation of efficient payment system, and its support for implantation of monetary policies (Offiong, et al., 2016). They include: deteriorating economic factors; political interferences; fraud and forgeries; weak corporate governance; and deregulation of banks (Egbo, 2012; Oluwakayode; 2017). Okpara, (2009) and Taiwo, Agwu, Babajide, Okafor and Isibor (2016) posited that fraud and the reported high involvement of bank staff impacted most on the performance of banks. Oluwakayode, (2017) affirmed that fraud and forgeries constitute the greatest challenges facing Nigeria banking industry. Therefore, the very presence of fraud may weaken the performance of banks and its ability to function effectively.

In determining the impact of fraud on performance, prior studies have used various performance measure such as ROA (Muritala et al., 2017; Taiwo et al., 2016),  Deposit (kalapo & Olaniyan, 2018; Offiong et al., 2010), Investment (Ogbeide, 2018) and Earnings Per Share – EPS (Nwankwo, 2013) as a measure of banks performance. However, for this study, total deposit is used to measure the performance of banks.

Deposits serve as the major source by which banks are able fund their operation (Kanu & Okarafor, 2013; Munir et al., 2012). They are key factors that affect the return of banks. Although banks can raise funds through share capital and engaging in capital market sourcing, most of banks profitability comes from managing the spread between the interest they pay on deposited funds and the rate they receive from lending these deposits which are also reinvested into other securities that yield returns to the banks.  One can view the impact of fraud from the standpoint of cash depletion. In this case, fraud can create a liquidity trap in the banking system that may possibly cause a bank failure depending on the magnitude and frequency of its occurrence (NDIC, 2010).

**Fraud**

Albrecht, Albrecht, Albrecht & Zimbelman (2009) defined fraud as a representation of a material fact that is false, made intentionally or recklessly, which is believed and acted upon by a victim to his or detriment. Nwankwo (2013) sees fraud as a deliberate act that causes a business or an economy to suffer damages in monetary value.  It can also be referred to as an act of deception that causes an individual or an organisation to lose its properties or other lawful rights (Taiwo et al., 2016).   Fraud is an intentional misrepresentation of fact that results in a gain to the perpetrator and a loss to the victim.

Adeyemo (2012) classified banking fraud as those perpetrated by management of banks, insiders such as employees, outsiders such as customers and non-customers, and a collaboration of insiders and outsiders. According to Albrecht et al., (2009) whereas fraud perpetrated by management are often done on behalf of organisation through falsification and misrepresentation of financial statement, insider frauds are committed by employees against an organisation which often leads to depletion in an organisation's assets. Frauds perpetrated by outsiders are committed by those other than individuals who work directly in the banks. Adeyemo (2012) opines that for collaboration to succeed, there must be an insider who colludes with an outsider to provides information and other logistical support to enhance the perpetration of fraud in the bank.

Fraud in Banks ranges from the simple theft of petty cash or cheques fraud to a major one. Common fraud perpetrated in banks as reported by NDIC through which deposits are affected include presentation of forged cheques, suppression of customers credit, ATM fraud, fraudulent transfers and withdrawals, outright theft by staff and internet banking fraud to mention a few. Idowu (2009) found that poor management of policies and procedures, bank staff feeling frustrated as a result of poor remuneration and inadequate working conditions were some of the factors that incite fraud. It was suggested that adequate control measures be put in place (Akindele, 2011) and the use of forensic accounting (Enourah & Ebimobowei, 2012) will help curb the menace of fraud that pervades the banking sector.

Fraud has also been observed to drastically reduce the amount of funds in business organization, particularly the financial sector. It can ultimately result to the poor performance and failure of banks. Fraud and fraudulent activities inflict severe financial difficulties on banks and their customers (Owolabi, 2010). Most times, management attention is often diverted toward resolving fraudulent issues which in turn bring about low productivity and impedes growth of banks (Akinyomi, 2012). As posited by Adeyemo (2012), the going concern of banks may be negatively affected due to fraud. Fraud creates an additional cost to banks because of the added cost of installing the necessary machinery to detect, prevent and protect the bank's assets. (Taiwo et al., 2016). It also leads to loss of money profit, reduce equity capital of the bank, and impair the banks financial health and constrain its ability to extend loans and advances for profitable operations (Adetiloye, Olokoyo, & Taiwo, 2016).

## Fraud Amount and Performance of DMBs

Fraud amount or total fraud amount is actual amount of money that is lost to fraud as a result of different fraudulent activities. Researchers have investigated the impact of fraud on the performance of DMBs. (Muritala, Ijaiya, & Adeniran, 2017; Offiong et al., 2016; Taiwo, et al., 2016). There appears to be a mixed outcome on the relationship that exists between performance of DMBs and fraud amount. Kalapo & Olaniyan (2018); Muritala et al., (2017); Taiwo et al., (2016) found a significant negative relationship between performance of banks and fraud amount. Suggesting that as the total amount of money involved in fraud increases an eventual loss of bank's profitability should be expected. This stems from the fact that lesser asset will be available to produce increased returns (Taiwo, et al., 2016). On the other hand, the study of Ogbeide (2018) found fraud amount to be statistically insignificant and negatively related to performance of DMBs. The study concluded intuitively that fraud may affect the capital base of banks in the long run. Perusing through the NDIC Report (2006-2014), we can

clearly see that fraud amount increased until recently in 2015 and 2016, where it reduced drastically as a result of the regulations put on ground on fraud by the NDIC and CBN.

However, kanu and Okarafor (2013) found a positive relationship between fraud amount and total deposit. Suggesting that fraud is perpetrated in banks with higher deposit. This study was contradicted by the findings of Offiong et al., (2016) which revealed that no significant relationship exists between fraud amount and performance of DMBs. Therefore, the study seeks to know, whether fraud amount still affects the performance of DMBs.

$H_{01}$: There is no significant impact of fraud amount on performance of Deposit Money Banks in Nigeria

## Number of Reported Cases and Performance of DMBs

Section 35 and 36 of the NDIC Act 2006 posit that banks should furnished to the corporation cases of fraud and forgeries, staff dismissed, and appointment terminated due to fraud.  Whereas, the activities of armed robbery and other financial crime make headways in media and dailies, the proportion of reported bank cases that hit the dailies represent only a minute percentage of fraud occurrences in banks (Taiwo et al., 2016). Some banks do not deem it fit to report such event and end up sweeping it under the carpet. This singular act affects the performance of bank as reported by (Muritala, et al, 2017; Ogbeide, 2018; Taiwo, et al, 2016). Offiong et al., (2016) and Taiwo et al., (2016) found a positive relationship between performance and the total number of reported fraud cases in banks. Suggesting that as profit of banks increases over the years, there will be a tendency for more fraud to be committed leading to more reported cases of fraud.  However, this result was in contrast with Muritala et al., (2016) and Ogbeide (2018) which found a significant negative impact of reported fraud cases on performance of DMBs.  According to Murtitala et al., (2017) as the number of frauds committed increases, the return on asset will eventually reduce leading to a reduction in shareholder's value. Hence, this study hypothesised that;

$H_{02}$: The number of reported fraud cases does not affect the performance of Deposit Money Banks in Nigeria

## Number of Staff Involved and Performance of DMBs

To successfully commit a fraud act, a perpetrator must be person with adequate knowledge and skills including having sufficient knowledge of the system upon which the fraudulent act will be perpetrated (Wolfe & Hermerson, 2004 as cited in Dorminey, Fleming, Kranacher & Riley, 2012). No doubt the number of bank staff involved in fraud and forgery keeps increasing. In another vein, the increase in the number of staff involved in fraud may be attributed to the reluctant behaviour of banks as regard reporting and prosecuting staff involved in fraudulent activities (Taiwo et al., 2016). Some bank management may decide to resolve the issue in-house without making a formal report as required by the NDIC.

Kalapo & Olaniyan, (2018); Taiwo et al., (2016) found a negative relationship between the total number of staff involved in fraud cases and performance of banks. Implying that as more staff commit fraud, the asset of the banks will be depleted and banks will find it difficult generating a reasonable return on asset.  Meanwhile, the study of Ashamu (2014), was of the view that the number of staff involved positively affects performance of DMBs. The findings of Muritala et al (2017) also revealed a significant positive relationship between the number of

staff involved in reported fraud cases and the performance of DMBs. However, Offiong et al., (2016) reported no significant relationship between the number of staff involved in fraud cases and the performance of banks. These mixed findings formed the bedrock for our third hypothesis.

$H_{03}$: There is no significant relationship between the number of staff involved in fraud and performance of Deposit Money Banks in Nigeria

**Methodology**
**Theoretical Framework and Model Specification**
**Theoretical Framework**

Fraud has been a subject with several theoretical underpinning. Other studies have conceptualised fraud under the theoretical framework of differential theory of Edwin Sutherland, Fraud Triangle theory of Donald Cressy, Fraud Diamond theory of Wolfe and Hermerson, and a host of others. However, this study is anchored on the fraud triangle theory in explaining the elements of fraud in the banking industry. The theory happens to be the most widely used theory.  It was based on a model developed by Donald Cressey, a sociologist and criminologist who studied the behaviour of white-collar crime in the 1950's in respect of those he term trust violators.

According to Dorminey et al., (2012), Cressey identified three elements that made up the fraud triangle. He opined that for an ordinary individual to commit fraud three elements must be present. First is *Pressure*; pressure is the motivation of the person to commit fraud, usually a financial burden. Adeyomo (2012) opine that other business and organisational pressures may create a motive for fraud. He noted that the desire to pull in more investment, secure tax advantage, and meet the teeming requirement of banking regulators may pressure management to commit fraud. Most researchers have used number of staff involved in fraud as a proxy for rationalisation. Hence, we therefore assume a functional relationship between total number of staff involved in reported fraud cases and performance of DMBs

DMBs Performance = $f$(Total No. Staff Invovled)............................(1)

Next is *opportunity;* which is the method by which the crime could be committed. Opportunity is a vital element in the fraud triangle because a potential fraudster may have the desire to commit fraud but without the perceived opportunity fraud may not occur. Opportunities can span from weak internal control, weak audit committee, management override, collusion, lack of supervision, and individual skill set such as employee knowledge of accounting and how to conceal misstatement (Dorminey et al., 2012). In explaining opportunity, the number of reported cases has been adopted as a proxy by authorities in the field (Muritala, et al, 2017; Taiwo, et al, 2016). Based on this, we expect a functional relationship between the total number of reported cases and the performance of DMBs.

DMBs Performance = $f$(Number of Reported Cases)............................(2)

Lastly, *rationalization;* this is how the person justifies in their own mind, committing the crime. Rationalization helps to justify a crime in a way that makes it acceptable in the mind of the fraudster. It may arise from an employee's feeling of dissatisfactions at work, low compensation or lack of recognition. Some fraudsters may even rationalise that the bank have enough money and will not be affected by a simple fraud (Adeyomo, 2012). As a result, a

functional model is drawn which shows a relationship between total fraud amount and performance of DMBs.

DMBs Performance = $f$(Total Fraud Amount)...........................................................(3)

## Model Specification

Flowing from the theoretical framework and extant literature, the model of this study is integrated as thus:

DMBs Performance =f (Fraud)..............................................................................(4)

TBD = $f$(Total Fraud Amount, Number of Reported Cases and Number of Staff involved)..(5)

$TBD_t = \beta_0 + \beta_1 TFA_t + \beta_2 NRC_t + \beta_3 NSI_t + \varepsilon_t$.......................................................................... (6)

Where;

TBD = Total Deposits of Banks (a proxy used for DMBs performance)

TFA = Total Fraud Amount (a proxy for rationalization)

NRC = Number of Reported Cases (a proxy for opportunity)

TSI = Total Number of Staff involvement (a proxy for perceived pressure)

$\varepsilon$ = Error Term of the regression model

$\beta_0$= Slope of Regression Intercept

$\beta_1, \beta_2,$ and $\beta_3$ - Coefficients of variables showing the direction of relationship

A priori expectation: $\beta_1 < 0$; $\beta_2 > 0$; $\beta_3 < 0$.

## Research Design

Driven by the positivist research philosophy and the deductive research approach, the research design adopted for the current study is the mono-method quantitative research design, using the ex-post facto strategy. This strategy was used to confirm fact about the nature of the data which has previously occurred. The study sampled the twenty-five (25) Deposit Money Banks quoted on the floor of the Nigeria Stock Exchange as at 2016. Data was obtained from various annual reports of NDIC covering a period of 2006-2016. The study used both descriptive and inferential statistics in summarizing the data and testing hypotheses. The inferential statistics for the study used was the ordinary least square regression which was preceded by the classical assumptions test of stationarity, multi-collinearity, serial correlation and constant residual error. The hypotheses of the study were made at 95% confidence interval. Hence, the rejection of the null hypotheses is based on a significant value below the threshold of 5%.

## Data analysis, interpretation and discussion of findings

In this section, preliminary analysis was done on the data collected, analyzed and interpreted in tabular form.

## Table 1: Descriptive Statistics

|  | Total Deposit (₦) | Total Fraud Amount (₦) | Number of Cases Reported | Total Staff Involved |
|---|---|---|---|---|
| Mean | 12355919 | 22877.27 | 5198.909 | 432.9091 |
| Median | 12330263 | 21291.00 | 2352.000 | 425.0000 |

| Maximum | 18589750 | 53523.00 | 16751.00 | 682.0000 |
|---|---|---|---|---|
| Minimum | 3412273. | 4832.000 | 1193.000 | 231.0000 |
| Std. Dev. | 5208476. | 14346.80 | 5396.721 | 149.5429 |
| Skewness | -0.346894 | 0.855513 | 1.193594 | 0.384816 |
| Kurtosis | 1.890350 | 3.044376 | 2.869195 | 2.002004 |
| Jarque-Bera | 0.784971 | 1.342725 | 2.619731 | 0.727985 |
| Probability | 0.675376 | 0.511012 | 0.269856 | 0.694897 |
| Observations | 11 | 11 | 11 | 11 |

**Source: Authors Computation, 2018 using E-views 8**

Table 1 above shows a descriptive statistic of variables used in the study. From the banks investigated the Total Deposit had a mean value of ₦12,355,919 with minimum and maximum values of ₦3,412,273and ₦18,589,750 respectively, and the standard deviation of ₦5,208,476 which is low thus far away from the mean, suggesting that Total Deposit investigated do exhibits a considerable clustering around the mean. Similarly, the mean of Total Fraud Amount stood at ₦22,877.27 over the period investigated with minimum and maximum values of ₦4,832.00 and ₦53,523.00 respectively. A standard deviation of ₦14,346.80 which is low suggests that Total Fraud Amount investigated exhibits a considerable clustering around the mean.

The mean of the number of cases reported on fraud stood at 5198.909 with a minimum and maximum of 1,193 and 16,751 respectively, and having a standard deviation of 5,397, which is higher than the mean suggests that number of reported fraud cases do not exhibits a considerable clustering around the mean. This simply implies that there are some hidden cases of fraud in banks that are not reported. Similarly, the mean of total staff involved in bank fraud stood at 433 for periods investigated, with a minimum and maximum of 231 and 682 respectively and having a standard deviation of 150 which is suggests that total staff involved in bank fraud across periods investigated do exhibits considerable clustering around the mean.

Furthermore, the Skewness and Kurtosis shows whether there is any departure from normality in the series, the statistics were between the threshold o (-3 to +3) which suggests that the data comes from a normally distributed sample (Peck, Olsen, & Devore, 2008). To further strengthen this, the Jarque-Bera statistics, test of normality was statistically insignificant for all variables at 5% (JB {Prob.}> 0.05), implying that the series is normally distributed (Studenmund, 2000).

**Table 2: Classical Assumption summary**

| | TEST | PROBABILITY | REMARK |
|---|---|---|---|
| Unit root | Augmented Dickey-Fuller | Variables stationary at first differencing | Fulfilled |
| Multicollinearity | variance inflation factor | Centered VIF less than 10 | Fulfilled |
| Serial correlation | Breusch-Godfrey (LM) | $F(2,5) = 0.9165$ | Fulfilled |
| Constant residual error | Breusch-Pagan-Godfrey | $F(3,7) = 0.4193$ | Fulfilled |

**Source: Authors Computation, 2018 using E-views 8**

The unit root test was employed to ascertain the stationary state of our time series variables. The outcome of the unit root test via the Augmented Dickey-Fuller at 5% level indicates that all the time series variables are non-stationary at levels. However, when further tested at 1st differencing, the variables became stationary which is desirable. At this level, it could be said that all the variables have an order of integration of one at same order. The strength of relationship between variables measured by the Pearson Product Moment correlation (See Table 6) showed that the association between the variables are below the threshold of 0.80, suggesting that multicollinearity is not a problem in the series. This was further tested using the variance inflation factor test. From the results as presented in table 7, it was observed that none of the variables tested indicates the presence of multicollinearity as the centered VIF of the variables were all less than 10 (Studenmund, 2000). Using the Breusch-Godfrey serial correlation (LM) test, the null hypothesis of no serial correlation was accepted, $F(2,5) = 0.9165$, p > .005 also the Durbin-Watson statistic (*DW*) of (1.83) in Table 3 indicates the absence of serial correlation since the *DW* statistic is substantially close to (2.00) (Studenmund, 2000). The Breusch-Pagan-Godfrey test of heteroskecdacity was conducted to test the serial correlation of the error term. The result of the analysis revealed the absence of heteroskedasticity, $F(3,7) = 0.4193$, p > .005 (Studenmund, 2000). This implies that the residual error is constant in the series.

**Table 3: Ordinary Least Square Regression Summary**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -381936.1 | 2858361. | -0.133621 | 0.8975 |
| Total Fraud Amount | -31.21723 | 58.79847 | -0.530919 | 0.6119 |
| Number of Reported Cases | 886.1597 | 152.5197 | 5.810135 | 0.0007 |
| Total Staff Involved | 17132.06 | 5580.581 | 3.069943 | 0.0181 |
| Summary Statistics | | | | |
| R-squared | 0.844863 | | | |
| Adjusted R-squared | 0.778376 | | | |
| F-statistic | 12.70713 | | | |
| Prob(F-statistic) | 0.003210 | | | |
| Durbin-Watson stat | 1.828170 | | | |

**Source: Author's Computation, 2018 using E-views 8**

The results of the Ordinary Least Square as presented in Table 3 shows that there exist a statistically insignificant negative relationship between fraud amount and performance of DMBs T(-0.53, -31.21) = 0.61,p > .005. This implies that a unit increase in fraud amount will cause a reduction in the total deposit of DMBs. Nevertheless, the extent of this reduction will be insignificant compared to the total amount of deposit. The result therefore accepts the null hypothesis of no significant impact of fraud amount on performance of DMBs. In contrast, the Number of Cases Reported and Total Staff Involved was found to be positive and statistically significant, *T*(5.81, 886.15) = 0.001,p < .005; *T*(3.06, 17132.06) = 0.61,p < .005 respectively. This implies that both variables will encourage greater Total deposit in banks. This is due to the fact that the disclosures on fraud in banks as per number of reported cases and staff involved is

adequate and accepted by the customers and the various banking regulatory bodies in Nigeria. The study therefore fails to accept the null hypothesis of the number of reported fraud cases does not affect the performance of DMBs and no significant relationship between the numbers of staff involved in fraud cases and performance of DMBs.

The summary statistics also shows a coefficient of determination (R-squared) of 0.844, implying that over 84.4% of the systematic variations in the dependent variable (total deposit) is explained by the independent variables used in the model, while about 15.6 % were caused by variables not depicted in the model. Similarly, the Adjusted coefficient of determination (Adjusted R-squared) which stood at 0.778, suggests that over 77.8% of the systematic variations in dependent variable is explained by the independent variables, while about 22.2% is caused by variables not included in the model but captured by the standard error of the regression, *S.E* = 2451994.  The overall F-statistics (goodness-of-fit test) capable of prediction stood at $F(12.71) = 0.003$, $p < .005$, this implies that all of the slope coefficients (excluding the constant, or intercept) in the regression are zero and statistically significant at 5%. Also the Durbin-Watson statistic of (1.83) indicates the absence of serial correlation since the DW statistic is substantially close to (2.00)

## Discussion of Findings

The objective of this study was to examine the impact of fraud on the performance of DMBs.  Fraud triangle theory was adopted in the study, culminating to model specification, where proxies was used to measure fraud (independent variable) and performance of DMBs in Nigeria (dependent variable). Our result gave mixed evidences on the subject matter and deviate a little from our model expectations (a priori expectations). Moreover, our study validates the fraud triangle theory to an extent as proxies such number of reported cases (opportunity) and total staff involved (pressure) adequately explained the nature of fraud in DMBs while total fraud amount (rationalisation) do not explain the nature of fraud in DMBs in Nigeria.

Similar to the findings of Ogbeide (2018), Total Fraud Amount was negative though insignificantly affect performance of DMBs in Nigeria.  This implies that total fraud amount is more likely to discourage total deposit but not to a very large extent. In reality, if the fraud amount is increasing geometrically in banks, the customers will be sceptical, and may not want to deposit all of their monies in the bank. Although, the portion of deposit left outside the banking system is insignificant, its inclusion will further enhance the performance of banks as the deposit will be channelled into other productive activities that may likely yield greater returns. Our findings slightly deviate from the works of (Kalapo & Olaniyan, 2018; Muritala et al., 2017; Taiwo et al., 2016), that reported a statistically significant and negative impact of fraud amount on the Performance of DMBs. They opined that as total amount involved in bank fraud increases, a significant decrease in the performance of banks will be expected. However, our findings could be as a result of the number of years studied and our proxy for performance. This is to say that the significant effect of fraud amount on the total deposit of DMBs will not be felt at a shorter period.

Additionally, it was discovered the Number of Reported Cases significantly and positively affects performance of DMBs in Nigeria. This is due to the fact that the disclosures of fraud in banks as per number of cases reported is quite adequate and accepted by the

customers and the NDIC. The fear of the banking public in losing their funds as a result of fraud which may ultimately lead to the distress or collapse of banks is submerged with the functions of NDIC which provide a reasonable assurance for the safety and security of depositor's fund despite the number of reported fraud cases. This implies that reported cases are handled accordingly, and the recovery of funds lost to fraud is appreciable. Our position is in tandem with the works of (Offiong et al., 2016; Taiwo et al., 2016) but sharply deviates from the works of (Kanu & Idume, 2016; Muritala et al., 2017; Ogbeide, 2018) that revealed a negative impact of the number of reported cases on the performance of banks.

Lastly, it was found that Total Staff Involved was positive and significantly related to the performance of DMBs in Nigeria. This finding was in consonance Ashamu (2014); Muritala et al (2017) but sharply deviates from the findings of Offiong et al., (2016). Also, in contrast with our findings was a negative significant relationship between total staff involved in fraud cases and the performance of DMBs as reported by Kalapo & Olaniyan, (2018); Taiwo et al., (2016). They posit that the more staff in banks engages in fraudulent activities, lesser performance will be attained by banks. However, the significant positive relationship revealed by our study implies that higher deposit incites the perpetration of fraud by staff of banks. Notwithstanding, the confidence of the banking public in term of deposited funds is not eroded by the number of staff involved in fraudulent activities in banks. Although, the increase in the number of staff involved may expose the weakness of control measures in banks, the form of punishment employed by the banks may be adequate for the violation of DMBs code of conducts. Hence, customers are not threatened by the number of staff involved in fraud cases and will continue to deposit their funds in banks.

## Conclusion and Recommendations

The impact of fraud on the banking and financial sector cannot be overemphasized, especially with the pervasiveness of fraud incidences in contemporary times. Based on the findings of this study it was concluded that Fraud affects the performance of Deposit Money Banks in Nigeria in terms of deposits from customers. If not properly managed, the recurring nature of fraud may lead to bank runs in the future. Although, fraud in modern context is unavoidable, a reduction of it to the barest minimum will do greater good to the wellbeing of banking system and their performance in Nigeria. On this note, the study therefore recommends that:

The regulation and supervision of DMBs should be stricter, that is, the CBN and NDIC should tighten their grip in regulating and supervising so as reduce the increasing fraud incidence. This in turn will keep the bank management alert on the control measures to put in place to prevent and deter fraud. Also, the CBN and the NDIC should encourage DMBs to always report cases of fraud. This can be done by incentivizing them with appropriate rewards that will incite more compliance. Ethical committee should be set up in DMBs and staff should be constantly trained on ethics so as to imbibe ethical culture on the staff in order to reduce their involvement in fraudulent activities. An expectation of punishment should also be well communicated and followed accordingly irrespective of the level of staff involved in fraudulent activities. Finally, Further studies should be done to cover longer periods above ten years, to ascertain the long run effect of fraud on the performance of DMBs in Nigeria as regards deposit.

## References

Ademoye, K. A. (2012). Frauds in Nigerian banks: Nature, deep-seated causes, aftermaths and probable remedies. *Management Journal of Social Sciences, 1*(23), 59-73. Doi:10.5901/mjss.2012.v3n2.279.

Adetiloye, A. K., Olokoyo, F. O., & Taiwo, J. N. (2016). Fraud Prevention and Internal Control in the Nigerian Banking System. *International Journal of Economics and Financial Issues*, *6*(3), 1172-1179

Akindele, R. I., (2011). Fraud as a negative catalyst in Nigeria banking industry. *Journal of Emerging Trends in Economics & Management Science, 2*(5), 357-363.

Akinyomi, O. J. (2012). Examination of fraud in the Nigerian banking sector and its prevention. *Asian Journal of Management Research*, *3*(1), 182-194.

Albretch, S.W., Albretch, C.C, Albretch, C.O., & Zimbelman, M.F. (2009). *Fraud examination* (3$^{rd}$ ed). Mason, USA: Southwestern Cengage.

Ashamu, S. O. (2014). Fraud management in the Nigerian banking industry: Evidence from Nigeria. *Journal of Technology, Entrepreneurship & Rural Development,4*(1), 125-137.

Central Bank of Nigeria (CBN, 2013). Banks intermediation in Nigeria: Growth, competition and performance of the banking industry, 1990-2010. *Occasional Paper No. 48.*

Dorminey, J., Fleming, A. S., Kranacher, M. J., & Riley, A. R. (2012). The evolution of fraud theory. *Issues in Accounting Education, 27*(2), 555-579.

Egbo, P. O. (2012). Universal basis of bank failure – The Nigeria case. *Developing Countries Studies, 2*(10), 119-131. Retrieved from http://www.iste.org

Enuorah, S. & Ebimobowei, D. (2012). Fraudulent activities and forensic accounting services of banks in Port Harcourt, Nigeria. *Asian Journal of Business Management, 4*(2), 132- 140.

Idowu, I. (2009). An assessment of fraud and its management in Nigeria commercial banks. *European Journal of Social Science, 10*(4), 628-640.

Ifionu, P. E., & Keremah, C. S. (2016). Bank reforms and deposit banks performance: Evidence from Nigeria. *European Journal of Business and Management, 8*(7), 136- 152.

Ikpefan, O. A. (2006). Growth of banks frauds and the impact on the Nigerian banking industry. Retrieved from eprint.covenantuniversity.edu.ng/1316/1/FRAUD.pdf

Kalapo, T. F., & Olaniyan, O. T. (2018). The impact of fraud on performance of deposit money banks in Nigeria. *International Journal of Innovative Finance and Economics Research, 6*(1), 40-49. Retrieved from http://www.seahipaj.org.

Ilaboya, J. O., & Lodikero, O. (2017). Board independence and financial statement fraud: A moderating effect of female gender diversity. *Accounting and Taxation Review, 1*(1), 196-221.

Kanu, C. & Idume, G. I. (2016). Security challange, bank fraud and commercial bank performance in Nigeria: An evaluation. *Journal of Business Management, 5*(2), 1-21.

Kanu, S. I., & Okorafor, E. O. (2013). The Nature, Extent and Economic Impact of Fraud on Bank Deposits in Nigeria. Interdisciplinary Journal of Contemporary Research in Business, *4*(9), 253-265.

Masud, K. A., & Haq, M. (2016). Financial soundness measurement and trend analysis of commercial banks in Bangladesh: An Observation of selected banks. *European Journal of Business and Management, 4*(10), 159-184.

Munir, S., Ramzan, M., Igbal, Q. R., Admad, M., & Raza, A. (2012). Financial performance assessment of banks: A case of Pakistani public sector. *International Journal of Business and Social Sciences, 3*(14), 276-283.

Muritala. A. T., Ijaiya, A. M., & Adeniran, S. A. (2017). Fraud and bank performance nexus: Evidence from Nigeria using vector error correlation model. *Journal of Business Finance, 3*(1), 21-29.

Nigeria Deposit Insurance Corporation Act, 2006.

NDIC.(2006-2016), Nigeria Deposit Insurance Corporation. Annual Reports and Statement of Accounts for various years.

Nwankwo, O. (2013). Implication of fraud on commercial banks performance in Nigeria. *International Journal of Business and Management 8*(15), 144-150. doi: 10.5539/ijbm.v8n15p144.

Offiong, I. A., Udoka, O. C., Ibor, I. B. (2016). Fraud in the Nigerian Banking Sector: A factor analysis investigation. *International Journal of Empirical Finance, 5*(1), 55-68.

Ogbeide, S. O (2018). Empirical assessment of frauds on the financial performance of banking sector in Nigeria. *International Journal of Research Studies in Management, 7*(1), 75-84.

Oluwakayode, M. A., (2017). Causes and effect of Banking distress in Nigeria Industry. *International Academic Journal of Accounting and Financial Management, 4*(1), 100-105. Retrieved from https;//www.iaiest.com

Okpara, G. C. (2009). Bank failure and persistent distress in Nigeria: A discriminant analysis. *Nigerian Journal of Economic and Financial Research, 2*(1).

Owolabi, S. A. (2010). Fraud and Fraudulent Practices in Nigeria Banking Industry. *International Multi-Disciplinary Journal, Ethiopia, 4*(3b): 240-256.

Peck, R., Oslen, C., & Devore, J. (2008). *Introduction to statistics and data analysis*. Brooks: Cole Cengage Learning.

Studenmund, A. H. (2000). *Using econometrics: a practical guide* (sixth edition). University of San Diego: Addison Wesley.

Taiwo, J. N., Agwu, M. E., Babajide, A. A., Okafor, T. C., & Isibor, A. A. (2016). Growth of bank frauds and the impact on the Nigerian banking industry. *Journal of Business Management and Economics, 4*(1), 1-10.

**Appendices**

**Table 4: Data for Analysis**

| Year | TD | TFA | NRC | TSI |
|------|-----|-----|-----|-----|
| 2006 | 3,412,273 | 4,832 | 1,193 | 331 |
| 2007 | 5,363,174 | 10,006 | 1,553 | 273 |
| 2008 | 8,702,996 | 53,523 | 2,007 | 313 |
| 2009 | 9,989,800 | 41,266 | 1,764 | 656 |
| 2010 | 10,837,144 | 21,291 | 1,532 | 357 |
| 2011 | 12,330,263 | 28,400 | 2,352 | 498 |
| 2012 | 14,386,480 | 18,045 | 3,380 | 531 |
| 2013 | 16,771,590 | 21,975 | 3,756 | 682 |
| 2014 | 18,020,000 | 25,608 | 10,621 | 465 |
| 2015 | 17,511,640 | 18,021 | 12,279 | 425 |
| 2016 | 18,589,750 | 8,683 | 16,751 | 231 |

**Source: NDIC Annual Reports**

**Table 5: Augmented Dickey Fuller Test**

| Variables | ADF | UNIT ROOT @ 5% | $1^{st}$ Difference |
|-----------|-----|----------------|---------------------|
| TD | -3.564 | -3.320 | Stationary |
| TFA | -6.831 | -3.320 | Stationary |
| NRC | -4.129 | -4.107 | Stationary |
| NSI | -4.062 | -3.257 | Stationary |

**Source: E-views 8 Output**

**Table 6: Correlation Matrix**

| | Total Deposit | Total Fraud Amount | Number of Cases Reported | Total Staff Involved |
|---|---|---|---|---|
| **Total Deposit** | 1.000000 | | | |
| **Total Fraud Amount** | -0.018260 | 1.000000 | | |
| **Number of Cases Reported** | 0.768143 | -0.290771 | 1.000000 | |
| **Total Staff Involved** | 0.286924 | 0.330838 | -0.254208 | 1.000000 |

**Source: E-views 8 Output**

**Table 7: Variance Inflation Factors**

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| C | 8.17E+12 | 14.94817 | NA |
| Total Fraud Amount | 3457.261 | 4.494102 | 1.183596 |
| Number of Cases Reported | 23262.24 | 2.277216 | 1.126867 |
| Total Staff Involved | 31142880 | 11.83678 | 1.158382 |

**Source: E-views 8 Output**

**Table 8: Serial Correlation Test**

| Breusch-Godfrey Serial Correlation LM Test: | | | |
|---|---|---|---|
| F-statistic | 0.088761 | Prob. F(2,5) | 0.9165 |
| Obs*R-squared | 0.377157 | Prob. Chi-Square(2) | 0.8281 |

**Source: E-views 8 Output**

**Table 9: Constant Residual Error Test**

| Heteroskedasticity Test: Breusch-Pagan-Godfrey | | | |
|---|---|---|---|
| F-statistic | 1.075159 | Prob. F(3,7) | 0.4193 |
| Obs*R-squared | 3.469788 | Prob. Chi-Square(3) | 0.3247 |
| Scaled explained SS | 1.038030 | Prob. Chi-Square(3) | 0.7921 |

**Source: E-views 8 Output**

**Table 10: Ordinary Least Square Regression Summary**

Dependent Variable: Total Deposit (₦)
Method: Least Squares
Date: 09/19/18 Time:08:16
Sample: 2006 2016
Included observations:11

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -381936.1 | 2858361. | -0.133621 | 0.8975 |
| Total Fraud Amount | -31.21723 | 58.79847 | -0.530919 | 0.6119 |
| Number of Cases Reported | 886.1597 | 152.5197 | 5.810135 | 0.0007 |
| Total Staff Involved | 17132.06 | 5580.581 | 3.069943 | 0.0181 |

| | | | |
|---|---|---|---|
| R-squared | 0.844863 | Mean dependent var | 12355919 |
| Adjusted R-squared | 0.778376 | S.D. dependent var | 5208476. |
| S.E. of regression | 2451994. | Akaike info criterion | 32.53799 |
| Sum squared resid | 4.21E+13 | Schwarz criterion | 32.68268 |
| Log likelihood | -174.9589 | Hannan-Quinn criter. | 32.44678 |
| F-statistic | 12.70713 | Durbin-Watson stat | 1.828170 |
| Prob(F-statistic) | 0.003210 | | |

**Source: E-views 8 Output**