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Fraud diamond and fraudulent financial reporting in the Nigerian banking industry

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ABSTRACT

The study investigated the relationship between fraud diamonds and fraudulent financial reporting (FFR) in the Nigerian banking industry. The study's three specific objectives are to determine the relationship between financial target and FFR, the relationship between external pressure and FFR, and the relationship between opportunity and FFR. The dimensions of fraud diamond are the financial target, external pressure, opportunity, rationalisation, and capability, with institutional ownership as a control variable. At the same time, the measures for FFR are Real earnings Management (REM) and Accrual Earning Management (AEM). The study used an ex-post facto research design, and the population consists of thirteen (13) Deposit Money Banks (DMBs) listed on the Nigeria Stock Exchange from 2018 to 2019. Multiple regression analysis and descriptive statistics were adopted to analyse the secondary data collected using E-VIEW version 12. The findings show from the empirical evidence that external pressure is significantly related to REM and AEM, but only financial target is significantly related to REM. External pressure, rationalisation, opportunity capability, and institutional ownership are insignificantly associated with REM and AEM, but only financial targets are insignificantly related to AEM. The study implies that it will help management detect and prevent fraud in the Nigerian banking industry. Therefore, the study recommends that management give their staff realistic financial targets that are achievable to reduce excessive pressure. The study concludes that the quest for a high level of financial performance management leads to pressure and has been proven to be a motivating force that has caused individuals to commit fraud in the bank.

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Fraud diamond, fraudulent financial reporting, fraud triangle, Accrual Earning Management, Real earnings Management, Nigeria

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1. INTRODUCTION

Over the years, fraudulent financial reporting has been happening at an increasing pace and with a growing magnitude (Chen, 2016; Jan 2018; Choi & Gipper, 2024; Surjaatmaja, 2018; Nizarudin, Nugroho, Agustina & Anggita, 2023). Fraudulent financial reporting impacts the life of any organisation, capital markets and individuals (Chen, 2016; Jan, 2018; Koolivand, Salehi, Arabzadeh & Ghodrati, 2023). Fraudulent financial reporting revealed real earnings management (REM) and accrual earnings management (AEM) made from an organisation's financial statements (Chen, Chiang & Voren, 2023). Managers are major perpetrators of fraudulent financial misrepresentation by deviating from normal financial activities to make their reports look good to stakeholders (Uygur & Napier, 2023). However, Wolfe and Hermanson (2004) and Imagbe Abiloro and Saheed (2019) believed that fraud diamonds such as pressure, opportunity, rationalisation and capability must be present for fraudulent financial reporting to occur in any organisation. Many studies have investigated REM using Discretionary Accruals (DACC) as a dimension of fraudulent financial reporting (Achmad & Pamungkas, 2018; Husmawati, Septriani, Rosita & Handayani, 2017; Manurung & Hardika, 2015; Puspitha & Yasa, 2018; Sunardi & Amin, 2018). Some other studies only compare two models, such as Beneish and Dechow models (Aghghaleh, Mohamed, & Rahmat, 2016), and Beneish and Altman Z Score Models (Bhavani & Amponsah, 2017). Lastly, this set of scholars used REM using Beneish m-score as measurement (Anichebe, Agbomah & Agbagbara, 2019; Arfiyadi, 2016; Irwandi, Ghozali, Faisal, & Pamungkas, 2019; Supri, Rura & Pontoh, 2018; Surjaatmajan, 2018). It is clear from the above that no known study has explored both REM and AEM together as a construct in Nigeria, creating a gap for this study. This study filled the gap observed after investigating the relationship between fraud diamonds and FFR in the Nigerian banking industry.

The failure of some banks due to FFR practices where bank executives deviate from financial transactions to gain the advantage of committing fraud in recent times calls for concern (Ashafoke & Aderin, 2023). This can be seen in the magnitude of fraudulent practices that have occurred in Oceanic Bank Plc, Intercontinental Banks Plc, Savannah Bank, Fin Bank Plc, Afri Bank Plc, Bank PHB, Spring Bank and Intercontinental Bank (Tsegba & Upaa, 2015). Several scholars carried out empirical studies on the relationship between fraud diamonds and REM (Achmad & Pamungkas, 2018; Amara, Amar & Jarboui, 2013; Arfiyadi, 2016; Indarto & Ghozali, 2016; Irwandi et al., 2019; Manurung & Hardika, 2015; Skousen, Smith & Wright, 2009; Supri et al., 2018; Sunardi & Amin, 2018; Surjaatmajan, 2018) but their studies show mixed findings. Against this backdrop, this study investigated the relationship between fraud diamonds and FFR in the Nigerian banking industry.

2. LITERATURE REVIEW

2.1 The Fraud Diamond

Wolfe and Hermanson (2004) extended fraud triangle framework by adding a capability element to make it four fraud elements and called it a fraud diamond. Wolfe and Hermanson (2004) and Imagbe et al. (2019) believed that these four elements of fraud diamond, such as pressure, opportunity, rationalisation and capability, must be present for fraud to occur. The following scholars, Abdullahi and Mansor (2015); Indarto and Ghozali (2016); Manurung and Harsika (2015); and Surjaatmaja (2018) supported the addition of the fourth factor (capability) to the three factors in the fraud triangle model and called it fraud diamond model. Jan (2018) supported his study of establishing a rigorous as well as effective model to detect firms' financial statements fraud for the sustainable development of enterprises and financial markets. Fraud diamond is a fraud model that helps management know the degree of fraud perpetrated in their organisation. These are elements that, if not well monitored, could lead to REM of fraudulent practice in an organisation (Tracey, 2023).

2.1.1 External Pressure

External pressure is a type of pressure to measure fraud (Lister, 2007; Pangaribuan & Santoso, 2023) and can occur when management plans to meet external expectations or obligations (Arfiyadi, 2016). These pressures can be financial or non-financial (Mangala & Soni, 2023). Financial in the sense that it threatens the financial stability, financial covenants, and expectations in the market, while non-financial relates to ego, social reassurance, and reputation (Kassem & Higson, 2012). If not well handled, external pressure could lead to a situation where management reports high profitability to make the financial records suitable for investors (Arfiyadi, 2016; Rahma & Sari, 2023). Skousen et al. (2009) stated that the ability to pay debts is one of the sources of company debt. Also, the pressure to acquire additional debt and remain competitive could be another key reason companies experience external pressure (Husmawati et al., 2017). External pressure is determined using the leverage ratio, dividing total debt by total assets.

2.1.2 Pressure (Financial Targets).

The pressure is a risky element of fraud that could prompt one to evade the procedure. Pressure is a variable factor in fraud diamonds, and in this study, it is represented by a financial target. A financial target is a threat resulting from excessive pressure placed on the staff to attain financial targets given by directors or top management. It also comprises the aims of collecting incentives from a turnover as well as profits when they meet the target (Supri et al., 2018). Managers in some firms are constantly required to attain specific targets by the users of accounting information, which may be the return on investment projected to be realised (Husmawati et al., 2017). Several times, Return on Assets (ROA) has been adopted to calculate asset efficiency and ability to generate returns (Skousen et al., 2009; Surjaatmaja, 2018; Okolie, Agorchukwu & Ezeamama, 2023) and also for comparison (Skousen et al., 2009).

2.1.3 Opportunity (Ineffective Monitoring)

Opportunity creates access to fraud, and over 80% of regular fraud could be solved if one can solve the opportunity to perpetrate fraud. Monitoring is one vital thing that can check fraudulent activities in an organisation (Tomer & Gandhi, 2023; Barzinji & Yusoff, 2023). In this study, ineffective monitoring has been selected as the dimension of opportunity and an element of the fraud diamond. According to SAS No. 99, ineffective monitoring is a situation that arises when the supervisor(s) is not effective and there are internal control systems lapses in the company (Husmawati et al., 2017). This allows the firm's managers to behave otherwise (Nauval & Gugus, 2015). Thus, cheating is greatly encouraged in the work environment. The board of directors (BOD) is responsible for ensuring the application of corporate strategy, overseeing management, and adopting accountability measures (O'Neal, 2023). In addition, the presence of independent directors is assumed to improve the usefulness of the oversight function within the company, primarily overseeing management function (Lafarre & Keijzer, 2023; Cucari, Simoni & Renzi, 2023) and activities, since the independent director stands alone and cannot be controlled by anyone ((Sihombing & Shiddiq, 2014 as cited in Husmawati et al., 2017).

2.1.4 Rationalisation (Auditor Rotation)

The third major element of fraud diamond is a rationalisation which is hard to measure (Skousen et al., 2009). Every publicly listed bank is required to yearly submit an annual report prepared by a public accountant in compliance with Financial Accounting Standards called generally accepted accounting principles (GAAP) and to the SEC, the foremost regulatory institution of the Nigerian capital market. Rationalisation is an actor's decision made consciously to see his interest beyond the need of others (Wihara, Suhariadi, Yulianti & Muhaimin, 2023). In this study, the auditor change is the proxy adopted for the rationalisation element (Supri et al., 2018; Wicaksari, Widia & Putri, 2023). Auditors' rotation utilised by firms is seen as a structure in place to eliminate any fraud (fraud trial) recognised by the past auditor (Puspitha & Yasa, 2018; Skousen et al., 2009).

2.1.5 Capability (Director's Change)

The fourth element of fraud diamond is capability, which improves the fraud triangle (Sunardi & Amin, 2018; Supri et al., 2018). Wolfe and Hermanson (2004) expressed that someone's capability creates the opportunity to commit fraud. The director's substitution may be an effort by the management to do away with any of them whom they considered to know more about the fraud committed by the company (Badawi, 2023). Therefore, changes in directors require adaptation time to make initial performance more optimal. Surjaatmaj (2018) expressed that the high turnover of the directors who leave the service will showcase the power of the CEO. This will explain how many opportunities are available for management to commit fraud because the entrance of new directors will not be able to comprehend the record of the rest of the management.

2.2 Institutional Ownership

According to Beiner et al. (2004), institutional ownership means the percentage of voting rights owned by any institution subscribing to company shares. Institutional investors will help inspire managers to put an order in place to decrease or checkmate opportunistic behaviour of management (Alabi, 2020; Cornett et al., 2007). According to Larson (2008), this set of investors are well-grounded users of accounting information and have overall information regarding fraudulent financial reporting. Several studies have revealed that institutional investors play a vital role in fraud monitoring and reducing fraudulent practices (Mirza, Majeed & Ahsan, 2020; Roychowdhury, 2006; Velte, 2023; Zang, 2012). Institutional ownership is adopted as the moderating variable for this study, which will theoretically impact the fraud diamond and fraudulent financial reporting.

2.3 Fraudulent Financial Reporting

Financial reporting is a process of formally reporting financial business activities. Financial reporting is a vital resource available for any market participant (Lu, Shin & Zhang, 2023). Financial reporting helps to decrease the mystery and the conflict resulting from the opinions of all stakeholders, such as managers, investors, regulatory agencies, society, media and other interested parties (Mwenda, 2023). Good financial reporting positively impacts the company's performance (Ahmed & Duellmand, 2011; Garcia-Lara et al., 2010). The integrity and reliability of data created by business information systems are essential for overall business success (Krishnan et al., 2015). In any case, when there is a goal to report unexpectedly, at that point, fraud is committed. Nonetheless, the intent must be proved beyond reasonable doubt for these accounting practices and conduct to be viewed as deceitful. It must be established in a court of law or by a regulatory body such as the SEC or any other body with such responsibility (Albizri et al., 2019).

2.4 Empirical Review

Imagbe et al. (2019) investigated fraud, diamond elements, and financial crimes in Nigerian banking industries. The study used primary data. Data were collected from fourteen quoted banks in Nigeria for 2018 year ended. In addition, the study adopted the ordinary least square regression model. The study revealed that increased pressure, opportunity, rationalisation and capacity variables can raise financial crimes in Nigeria's banking sector. The study recommends a rapid and significant devotion to these major determinants of financial crimes through forming a culture of honesty, openness, and assistance, removing chances to commit fraud and generating prospects that a fraudulent person will be punished (Imagbe et al., 2019). Rengganis, Sari, Budiasih, Wirajaya, and Suprasto (2019) study investigated the fraud diamond in detecting financial statement fraud. The entire financial sector registered in BEI 2013-2017 was used as the study population. A purposive sampling technique was adopted, and multiple linear regression analysis was employed to analyse the data. The study's results revealed that pressure is further proxied to financial targets, positively impacting financial statement fraud. In addition, the opportunity further proxied the number of audit committees' independent commissioners, and the number of meetings held by audit committees hurt fraud diamonds. Next is the rationalisation element, which is further proxied as the audit opinion shows that it does not affect fraud in financial statements (Akram et al., (2023). Lastly, the capability element proxied as a change of directors does not affect financial statement fraud (Rengganis et al., 2019).

Yendrawati, Aulia and Prabowo's (2019) study investigated the likelihood of fraudulent financial reporting and fraud diamond model. One of the dimensions of a fraud diamond is that the pressure is proxied by financial stability, external pressure, and financial targets. The second-dimension opportunity was proxied by the nature of the industry and the effective monitoring. The rationalisation and capability factors were proxied using the same name. These scholars used earnings management by the F-score indicator to discover the likelihood of financial statement fraud. The population is the manufacturing firms listed on the Indonesian Stock Exchange (IDX) from 2014-2016. A purposive sampling method as well as a sample size of 31 companies were applied for this study. The quantitative method adopted was multiple regression analysis and a T-test analysis. The research findings displayed that only the industrial nature is confirmed to impact the likelihood of fraudulent financial reporting detection. At the same time, other variables do not influence the detection of the likelihood of fraudulent financial reporting (Yendrawati et al., 2019)." Ibrani et al. (2019) examined the factors that explained why non-GAAP earnings management is conducted in line with fraud diamond theory (FDT) in 42 non-banks, as well as financial firms listed on the Indonesia Stock Exchange (IDX) for the 2010-2017 periods, were investigated in this study. The study's results revealed that opportunity and capability were the dominant factors that influence non-GAAP earnings management. Based on the findings, there is a need for the regulators to pay greater attention to the opportunity as well as capability factors to decrease or eliminate the presence of non-GAAP earnings management.

Anichebe et al. (2019) studied the nexus between financial statement fraud and corporate governance elements. The study used panel data from firms in the agricultural industry of the Nigeria stock exchange between the 2013 and 2017 financial years. Longitudinal design and binary logit regression technique were employed in analysing the data. The result reveals that about 52% of financial statement fraud likelihood can be attributable to corporate governance variables in quoted agricultural companies in the Nigeria Stock Exchange. The findings show that agricultural companies improve the effectiveness of their board of audit committee and increase the number of their corporate governance membership." Mawutor et al. (2019) investigated the impact of fraud on the Deposit Money Banks (DMBs) in Nigeria. The study adopted an ex-post-facto research design strategy. Secondary data were obtained from the database of Nigeria Deposit Insurance Corporation (NDIC) annual reports from 2006 to 2016. The study used the Ordinary Least Square (OLS) to envisage the effect of fraud on DMBs after achieving key regression assumptions. The finding was that the total amount of fraud was negative and insignificantly impacted the performance of DMBs. The number of reported cases substantially and

positively influences the DMB's performance. Lastly, the total number of staff involved significantly and positively influence the performance of DMBs in Nigeria. Therefore, the study concluded that fraud in the banking sector affects the performance of the DMB in Nigeria. The regulation and supervision of DMBs by CBN and NDIC should be tightened and stricter to reduce the increasing incidence of fraud (Mawutor et al., 2019).

Premanandaa et al. (2019) investigated fraudulent financial reporting with the help of the fraud diamond analysis. This study uses secondary data. The study population is the entire non-financial firms quoted on the Indonesia Stock Exchange(ISE) for the period of 2015-2017. Factor analysis as well as multiple linear regression analysis were the techniques adopted. The result shows that pressure, rationalisation and capability predict fraudulent financial reporting, while opportunity does not predict fraudulent financial reporting. Arfiyadi (2016) evaluated a fraudulent financial statement prediction from a fraud diamond perspective in Indonesia. The independent variables of this study were financial stability, external pressure, financial target, nature of the industry, ineffective monitoring, rationalisation and capability. The population of this study were 93 companies quotedon the ISE for 2010-2015. Samples were selected using the purposive sample method; samples were obtained from 18 companies with units of analysis from several 92 companies. This research was quantitative and used for this study, which was secondary data in the form of an annual report and analysed by logistic regression analysis techniques and descriptive statistics. The findings reveal that rationalisation and the nature of the industry positively affected fraudulent financial statements. In contrast, the external pressure, financial stability, ineffective monitoring, financial target and capability did not have a relationship effect on fraudulent financial statements (Arfiyadi, 2016).

Indarto and Ghozali (2016) investigated fraud diamond: detection analysis on fraudulent financial reporting in Indonesia. The recent accounting scandal has become one of the purposes for analysing financial statements to reduce fraud against financial reporting. Therefore, firms use public accountants to audit individual companies' financial statements, which are anticipated to reduce fraudulent practices that increase the public's confidence in the company's financial statements. This study aims to detect fraud using fraud diamond analysis. This study takes banking firms listed on the Indonesian Stock Exchange from 2009 to 2014, with a total sample of 149 banks. The data source was obtained from the Indonesia Capital Market Directory (ICMD), the Indonesia Stock Exchange (IDX), and each banking company's websites. Based on the results, it was evident that external pressure, financial stability and capability determine fraudulent financial reporting, while target financial, ineffective monitoring and rationalisation do not impact fraudulent financial reporting (Indarto & Ghozali, 2016).

2.5 Theoretical Framework

Maloku (2020) expressed that this theory is one of the most essential criminological theories in the past sixty years. These are the principles or tenets of differential association theory, namely, all criminal behaviour are learned; one learns criminal behaviour through interactions with others via a process of communication; people learn the techniques to carry out criminal behaviour and also the rationalisations that justify the criminal activity; when the number of favourable interpretations that support violating the law outweigh the unfavourable one, an individual will choose to become a criminal (Sutherland, 1947). The theory assumes that FFR practice is learned through contact with someone who is fraudulent (Lantz & Willis Shaw, 2023). A situation where the manager deviates from capturing financial transactions to a later date because of the motive to commit fraud calls for concern. A person becomes fraudulent because of frequent criminal patterns. For instance, if one is exposed to a duplicated criminal scenario, this scenario will eventually rub off on others nearby.

3. METHODOLOGY

3.1 Research Methodology

This study followed epistemology positivism philosophy because it is interesting how the adequate, valid and legitimate knowledge of fraudulent financial reporting can be communicated to others. The ex-post facto design embraces that the variables of interest are not prone to controls or doctored by the researcher since such information is already in the public domain and can be verified (Opudu & Ogoun, 2023; Emeka, 2023; Asiati, 2023). The study population consists of thirteen (13) listed Deposit Money Banks (DMB) in the Nigeria Stock Exchange from 2018 to 2019. The adoption of these banks is because they all met the sample criteria, which is equal to 26 observations, which have presented more reliable and accessible data in the preparation of financial statements (Manurung & Hardika, 2015). The choice of observations is in agreement with the following studies of Talab, Flayyih and Ali (2017), Sari, Kiswanto, Rahmadani, Khairunnisa and Pamungkas (2020) and Sunardi and Amin (2018).

Table 3.1: Measurement of Real Earnings Management: Beneish Model

S/N	Variable measure	Formula	Authorities
1	Days Sales in Receivable Index (DSRI)	$DSRI=\frac{Receivable_t/Sales_t}{Recveivable_{t-1}/Sales_{t-1}}$	Irwandi et.al. (2019); Supri et.al. 2018)
2	Asset Quality Index (AQI)	$AQI=\frac{(1-Current\ asset_t+PPE)/Total\ Assets_t}{(1-Current\ Asset_{t-1}+PPE/Total\ Assets_{t-1}}$	Irwandi et.al. (2019); Supri et.al. 2018)
3	Depreciation Index (DEPI)	$DEPI=\frac{Depreciation_{t-1}}{Depreciation_{t-1}+PPE_{t-1}}/\frac{Depreciation_t}{Depreciation_t+PPE_t}$	Irwandi et.al. (2019); Supri et.al. 2018)
4	Total Accruals to Total Assets (TATA)	$TATA=\frac{Income\ from\ continuing\ operation-cash\ flow\ from\ operations}{Total\ Assets_t}$	Irwandi et.al. (2019); Supri et.al. 2018)
5	Gross margin Index(GMI)	$GMI=\frac{Sales_{t-1}-Cost\ of\ goods\ sold_{t-1}}{Sales_{t-1}}/\frac{Sales_t-Cost\ of\ goods\ sold_t}{Sales_t}$	Irwandi et.al. (2019); Supri et.al. 2018)
6	Sales Growth Index (SGI)	$SGI=\frac{Sales_t}{Sales_{t-1}}$	Irwandi et.al. (2019); Supri et.al. 2018)
7	Sales General and Administrative Expenses Index (SGAI)	$SGAI=\frac{Sales,General\ \&\ Adm.Exp_t}{Sales_t}/\frac{Sales,General\ \&\ Adm\ Exp_{t-1}}{Sales_{t-1}}$	Irwandi et.al. (2019) ; Supri et.al. 2018)
8	Leverage Index (LVGI)	$LVGI=\frac{Long\ Term\ Debt_t+Current\ Liab_t}{Total\ Assets_t}/\frac{Long\ Term\ Debt_{t-1}+Current\ Liab_{t-1}}{Total\ Assets_{t-1}}$	Irwandi et.al. (2019); Supri et.al. 2018)

Table 3.2: Measurement of Accrual-Based Earnings Management

S/N	Variables	Measure	Authorities
1	Total assets	$A_{i,t-1}$ is company i" s total asset in year t – 1	Chen (2010); Dechow et.al. (1995);
2	Revenue	$\Delta REV_{i,t}$ is the difference of operating revenue	Chen (2010); Dechow et.al. (1995)
3	Property, plant, equipment	$PPE_{i,t}$ is company i" s fixed asset in year t.	Chen (2010); Dechow et.al. (1995)
4	Receivable	$\Delta REC_{i,t}$ is the difference of account receivable	Chen (2010); Dechow et.al. (1995);

Table 3.3: Measurements of Variables

S/N	Variables	Indicators	Formula	Authorities
1	Pressure	Financial target	$ROA=\frac{Profit\ After\ Tax_{t-1}}{Total\ Assets_t}$	Beneish (1999a); Handoko and Natasya (2019); Rengganis et.al.(2019); Supri, et.al.(2018)
2	Opportunity	Ineffective monitoring	$BDOUT=\frac{Board\ of\ Independent\ diretors}{Total\ Board\ of\ Directors}$	Handoko and Natasya (2019); Supri et.al.(2018)
3	Rationalization	Auditor's Rotation	AUDCHANGE=Dummy variable for auditor changes, where 1 = there is an auditor change during the period 2018-2019 and 0 = no change in auditor	Achmad and Pamungkas (2018); Handoko and Natasya (2019)
4	Capability	Directors Change's	(D CHANGE)=Dummy variable for change of directors during the period 2018-2019, where 1 = there is a change of directors and 0 = no change of directors.	Handoko and Natasya (2019); Rengganis et.al.(2019)
5	Institutional Ownership	Institutional Ownership present	(INSTO)=Dummy variable for the present of institutional ownership during the period 2018-2019, where 1 = there is institutional ownership and 0 = no institutional ownership.	Pamungka et.al. (2018)
6	REM	M-score Model	M - Score = -4.840 + (0.920 x DSRI) + (0.404 x AQI) + (0.528 x GMI) + (4.697 x TATA) + (0.892 x SGI) + (0.115 x DEPI) - (0.172 x SGAI) - (0.327 x LVGI)	Beneish et.al. (2012); Franceschetti and Koschtial (2012) Mahama (2015).

3.2 Model Framework and Estimation

The model represents the functional model as expressed below: The model for this study is drawn from Cressey (1953) and Wolfe & Hermanson (2004), as shown below. A mathematical model is shown below: Thus, an econometric model is formed by adding constant terms (ß0), slope (ß) and error term (ε) all in the model below:

$REM=f(\beta_0+\beta_1 FINT+\beta_2 LEV+\beta_3 OPPOR+\beta_4 RATION+\beta_5 CAPAB+\beta_6 INSTO+\varepsilon)$ -----1

$AEM=f(\beta_0+\beta_1 FINT+\beta_2 LEV+\beta_3 OPPOR+\beta_4 RATION+\beta_5 CAPAB+\beta_6 INSTO+\varepsilon)$ -----1

Where, REM=Real Earnings Management, AEM=Accrual Earnings Management, FINT=Financial Target, LEV.=External Pressure, OPPOR=Opportunity, RATION=Rationalization, CAPAB=Capability and INSTO=Institutional Ownership.

4. RESULTS

The REM in Table 4:1 above shows a higher negative when the company is not involved in earnings management (if the value of M < -2.22, which means a higher negative value than this), but it shows a positive value when the company is involved in earnings management (if the value of M > -2.22) (Beneish et al., 2012; Petrík,2016).

Table 4.1: Presentation of Data

S/N	BANKS	REM	AEM	LEV	FINT	OPPOR	RATION	CAPAB	INSTO
1	Access Bank	1.7418	10.31	0.91	0.0131	0.2778	0.0000	1.0000	1.000
2	FCMB	365.1688	50.87	11.84	0.0228	0.1667	0.0000	1.0000	1.000
3	Fidelity Bank	(0.8598)	7.83	0.89	0.0144	0.0714	1.0000	0.0000	0.000
4	First Bank Plc	(1.6651)	(39.81)	0.03	0.0502	0.0000	0.0000	0.0000	1.000
5	Gtbank	(1.2545)	3.90	0.80	0.0565	0.2143	1.0000	1.0000	1.000
6	Jaiz Bank	(1.0724)	1.31	0.56	0.0146	0.0000	0.0000	0.0000	1.000
7	Stanbic IBTC	1.3882	(4.28)	0.93	0.0239	0.0000	1.0000	0.0000	1.000
8	Sterling Bank	(1.9701)	0.98	0.88	0.0086	0.1429	0.0000	1.0000	1.000
9	UBA	(0.7437)	4.51	0.89	0.0169	0.0952	0.0000	0.0000	1.000
10	Union Bank	(1.5997)	2.68	1.00	0.0142	0.1538	0.0000	1.0000	1.000
11	Unity Bank	(12.6329)	1.03	0.25	0.0511	0.2308	1.0000	1.0000	1.000
12	Wema Bank	(1.5554)	1.89	0.92	0.0074	0.1818	1.0000	0.0000	1.000
13	Zenith Bank	(1.3018)	4.80	0.86	0.0328	0.2857	0.0000	1.0000	1.000

Meanwhile, AEM shows a negative value meaning the risk is low, which means that the company is not involved in the manipulation of financial statements but a positive value which shows the risk is high, meaning that the company is involved in the manipulation of financial statements (Drábková, 2014).

4.1 Univariate Analysis

Table 4.2: Descriptive Statistics

	FINT	LEV	OPPOR	RATION	CAPAB	INSTO
Mean	0.025115	1.596923	0.140031	0.384615	0.538462	0.923077
Median	0.016900	0.890000	0.153800	0.000000	1.000000	1.000000
Maximum	0.056500	11.84000	0.285700	1.000000	1.000000	1.000000
Minimum	0.007400	0.030000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.017074	3.091495	0.100894	0.506370	0.518875	0.277350
Skewness	0.847487	3.123986	-0.142965	0.474342	-0.154303	-3.175426
Kurtosis	2.191902	10.89254	1.822697	1.225000	1.023810	11.08333
Jarque-Bera	1.909896	54.88671	0.795057	2.194089	2.166974	57.23987
Probability	0.384832	0.000000	0.671979	0.333856	0.338413	0.000000
Sum	0.326500	20.76000	1.820400	5.000000	7.000000	12.00000
Sum Sq. Dev.	0.003498	114.6881	0.122154	3.076923	3.230769	0.923077
Observations	13	13	13	13	13	13

Based on the result calculated in Table 4.2, the descriptive statistic of the data is presented. The mean value of FINT, LEV, OPPOR, RATION and CAPAB are 0.025, 1.59, 0.14, 0.39, 0.54 and 0.92, respectively. The skewness coefficient shows that data of some variables are highly skewed since they fall within less than -1 and greater than 1. Also, the Kurtosis result measures the degree of peakedness or flatness of distribution in relative (Mathworld, 2023). Lastly, the p-value of Jarque-Bera statistics (JB) are within the normal distribution range since the results are all positive, meaning of p-value greater than 0.05(Thadewald & Büning,2007)

Table 4.3: Regression Model 1

REM=-27.2+396.3FINT+33.1LEV-7.85RATION-14.54OPPOR-6.73CAPAB-0.64INSTO + u

Dependent Variable: REM
Method: Least Squares
Date: 02/26/23 Time: 02:32
Sample: 1 13
Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FINT	396.2668	118.5294	3.343193	0.0156
LEV	33.13855	0.608624	54.44828	0.0000
RATION	-7.846233	4.294315	-1.827121	0.1175
OPPOR	-14.53971	29.96980	-0.485145	0.6448
CAPAB	-6.725807	6.389481	-1.052637	0.3330
INSTO	-0.636609	7.234035	-0.088002	0.9327
C	-27.17498	7.288170	-3.728642	0.0098

R-squared	0.998258	Mean dependent var	26.43411
Adjusted R-squared	0.996516	S.D. dependent var	101.8358
S.E. of regression	6.010708	Akaike info criterion	6.728695
Sum squared resid	216.7717	Schwarz criterion	7.032899
Log likelihood	-36.73652	Hannan-Quinn criter.	6.666168
F-statistic	573.0890	Durbin-Watson stat	2.266073
Prob(F-statistic)	0.000000		

Table 4:3 shows the least square outcome where the criterion variable REM is expressed as a function of FINT, LEV, RATION, OPPOR, CAPAB and INSTO. The R-squared shows that the regression explains 99% variation. The Durbin-Watson statistics of 2.3 shows negative autocorrelation because it is above 2.

The entire model shows that REM is positively related to FINT and LEV but statistically significant because the values are less than 5% of the significance level. Also, REM is negatively related to CAPAB, OPPOR, RATION and INSTO but are all statistically insignificant because the values are more than 5% of the significance level. The results are contrary to Artiyadi et al. (2019); Arfiyadi (2016), who found an insignificant relationship between financial target and external pressure but in agreement with capability, opportunity, and rationalization. Also, the results are contrary to Supri et al. (2018), who revealed a significant relationship between opportunity, rationalization and capability but in agreement with the results of the financial target, which shows a significant relationship. Moreover, the results are in agreement with the Surjaatmajan (2018) and Irwandi et al. (2019) study but contrary to Surjaatmajan (2018), which used capability as moderating variable.

Table 4.4: Regression Model 2

AEM=-1.5-393.2FINT+4.5LEV+7.6RATION+47.8OPPOR +6.1CAPAB-5.56INSTO + u

Dependent Variable: AEM
Method: Least Squares
Date: 02/26/23 Time: 03:06
Sample: 1 13
Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FINT	-393.1678	188.8692	-2.081694	0.0825
LEV	4.504787	0.969804	4.645048	0.0035
RATION	7.579747	6.842719	1.107710	0.3104
OPPOR	47.74910	47.75498	0.999877	0.3560
CAPAB	6.052703	10.18123	0.594496	0.5739
INSTO	-5.561118	11.52698	-0.482444	0.6466
C	-1.506677	11.61324	-0.129738	0.9010

R-squared	0.871063	Mean dependent var	3.540000
Adjusted R-squared	0.742126	S.D. dependent var	18.86065
S.E. of regression	9.577683	Akaike info criterion	7.660482
Sum squared resid	550.3920	Schwarz criterion	7.964685
Log likelihood	-42.79313	Hannan-Quinn criter.	7.597954
F-statistic	6.755722	Durbin-Watson stat	2.431991
Prob(F-statistic)	0.017504		

Table 4:4 shows the least square outcome where the criterion variable AEM is expressed as a function of FINT, LEV, PRESS, RATION, OPPOR, CAPAB and INSTO. The R-squared shows the regression explains 87% variation. The Durbin-Watson statistics of 2.43 shows negative autocorrelation because it is above 2. The model shows that AEM is negatively related to FINT and INSTO but statistically insignificant because the values are more than 5% of the significance level. Also, AEM is positively related to LEV, RATION, OPPOR, and CAPAB. However, only LEV among them is statistically significant because the value is less than 5% of the significance level, while others are insignificant. There is an agreement on financial target, capability, opportunity and rationalization Achmad and Pamungkas (2018). Also, the results agree with Sunardi and Amin (2018) on the variables of the financial target, opportunity and rationalization but disagree on the variables of external pressure. In addition, the results of external pressure and financial target are in agreement with Husmawati et a. (2017) but are in disagreement on the variables of opportunity and rationalization.

4.2 Summary of Findings

Table 4.5: Summary Computation of Hypotheses Results

Hypotheses	Model specifications	Coefficient	T-Stat	P-Value 0.05	Remark	Decision
Ho_1	REM= $\beta_0 + \beta_1$ Fint+U_{1--1}	396.3	3.34	0.0156	significant	Ho_1 Rejected
Ho_2	AEM= $\beta_2 + \beta_2$ Fint +U_{2--2}	(393.2)	(2.08)	0.083	Insignificant	Ho_2 Accepted
Ho_3	REM= $\beta_3 + \beta_3$ Lev +U_{3--3}	33.12	54.5	0.000	significant	Ho_3 Rejected
Ho_4	AEM= $\beta_3 + \beta_4$ Lev +U_{4--4}	4.5	4.65	0.004	significant	Ho_4 Rejected
Ho_5	REM= $\beta_5 + \beta_5$Ration +U_{5--5}	(7.85)	(1.83)	0.118	Insignificant	Ho_5 Accepted
Ho_6	AEM= $\beta_6 + \beta_6$Ration +U_{6--6}	7.6	1.11	0.31	Insignificant	Ho_6 Accepted
Ho_7	REM= $\beta_7 + \beta_7$ Oppor +U_{7--7}	(14.5)	(4.85)	0.64	Insignificant	Ho_7 Accepted
Ho_8	AEM= $\beta_8 + \beta_8$ Oppor +U_{8--8}	47.8	0.999	0.36	Insignificant	Ho_8 Accepted
Ho_9	REM= $\beta_9 + \beta_9$ Capab +U_{9--9}	(6.73)	(1.053)	0.333	Insignificant	Ho_9Accepted
Ho_{10}	AEM= $\beta_{10} + \beta_{10}$ Capab +U_{10--10}	6.05	0.59	0.57	Insignificant	Ho_{10}Accepted
Ho_{11}	REM= $\beta_{11} + \beta_{11}$ Insto +U_{11--11}	(0.64)	(0.09)	0.93	Insignificant	Ho_{11}Accepted
Ho_{12}	AEM= $\beta_{12} + \beta_{12}$ Capab +U_{12--12}	(5.56)	(0.13)	0.9	Insignificant	Ho_{12} Accepted

5. CONCLUSIONS

This study investigated the relationship between fraud diamonds and FFR in the Nigerian Banking Industry. The study used an expo facto research design with a population of the study that consisted of thirteen (13) DMBs in NSE from 2018 to 2019.

Based on our conclusions, the study recommends as follows:

1. That management should stop giving unachievable financial targets to their staff, which will put more excessive pressure that can lead to fraudulent financial practices.
2. The CBN should introduce a regulatory policy that will ensure unrealistic financial targets given to bank staff are stepped down.
3. Management to checkmate the excess of their debts will put more pressure on staff to get customers for the banks.

1. Management must institute effective monitoring through an oversight function to eliminate and block every opportunity that could lead to fraudulent financial practices.
2. Ideally, auditors are replaced regularly since it will keep them from deviating from normal auditing activities and manipulating financial reports.
3. Change of directors should not be done with the expectation to detect any fraudulent financial reporting but because of reorganisation and innovation, the director is about to introduce.
4. Installation of institutional ownership should only be for transparency with the involvement of all stakeholders, not with the motives to curb fraud.

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