FEMINIZATION OF CORPORATE GOVERNANCE STRUCTURE AND FINANCIAL STATEMENT FRAUD REDUCTION IN NIGERIA'S LISTED INSURANCE COMPANIES

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Abstract

This study examines the effect of corporate governance structure on financial statement fraud likelihood of listed insurance companies in Nigeria for the period 2014 to 2019. Corporate governance structure was proxied with board size, board gender diversity, audit committee meeting frequency and audit committee independence. While financial statement fraud likelihood was measured with Beneish M-Score. The study employed ex post facto and causal research design, while secondary data were extracted from financial reports and accounts of the listed insurance companies. The study employed binary logistic panel regression as the technique of data analysis and it found that board gender diversity, audit committee meeting frequency and audit committee independence have significant negative effect on financial statement fraud likelihood while board size has no significant effect on financial statement fraud likelihood. The study concludes that the size of a board does not reduce financial statement fraud. However, the board gender diversity, audit committee meeting frequency and audit committee independence have significant impact in reducing financial statement fraud in Nigeria's listed insurance companies. Consequently, for board gender diversity to significantly improve fraud reduction in Nigeria's

listed insurance companies, the focus of board size should be on the quality of the board. Thus, insurance firms in Nigeria should increase the number of female members in the board as this will increase the capacity of the board of directors to checkmate fraud. Also, audit committee should meets frequently and the number of independent members in the audit committee should be statutorily increased.

Keywords: Audit Committee, Beneish M-Score, Gender Diversity, Corporate Governance, Fraud

Introduction

The intentional manipulation of accounting numbers used to be a subject of interest in accounting and finance literature in the past, but it has gained much attention in recent years because of the revelations about financial fraud at many successful firms (Ajayi & Zahiruddin, 2016). The collapse of many companies, starting with Enron in 2001 up to Lehman Brothers in 2009, damaged seriously the confidence in accounting numbers and the ability of financial markets to price financial assets correctly (Ajayi & Zahiruddin, 2016).

The negative consequence of fraud in accounting numbers was not limited to developed markets, but touched emerging markets like Nigeria where the Cadbury (Nig) Plc 2006 scandal has remained a reference point for fraudulent financial reporting (Ajayi & Zahiruddin, 2016). Investors in Cadbury (Nig) Plc also lost heavily as the share price of the company took a downward turn. Other incidences of fraudulent financial reporting in Nigeria include the fraud at Afri-bank Plc and Lever Brothers (Nig) Plc (Ajayi & Zahiruddin, 2016). In Nigeria, the growing incidence of corporate fraud has meant that investors' confidence in the capital market has waned. In fact, the current down turn in the market has been blamed partly on the fraud at the Nigerian Stock Exchange (Osaze 2011).

Fraudulent financial reporting is one type of fraud with substantial negative impacts, loss of investor confidence, reputational damage, potential fines and criminal actions. These corporate failures have created doubts in the minds of various stakeholders on the financial report's credibility and reliability (Uadiale, 2012). Fraudulent financial reporting has dire consequences for the economy of any Nation and the victim organisations. Its effects include financial loss

and dent on the reputation of the victim organization (Burnaby, Howe & Muchlmann, 2011).

In ensuring the success of organizations, Alzoubi and Selamat (2012) argued that adherence to sound corporate governance is an important catalyst. They argued that board members and audit committee are responsible in setting organizational goals and strategies as well as aligning them with the shareholders' interest. In the context of financial information, they are responsible for the transparency and credibility of the financial statement (Alzoubi & Selamat, 2012).

Audit committee is really important in every organization (Beasley, 2000). The Securities and Exchange Commission code of corporate governance requires public companies to establish independent audit committees in order to help organizations in enhancing the independence and integrity of the financial reporting (Beasley, 2000).. In addition to independence, the committee should ideally meet frequently and exercise professional care in their work (Beasley, 2000).

There are limited studies carried out on corporate governance structure on financial statement fraud likelihood of listed insurance companies in Nigeria. Out of these studies are the studies of Laith (2015); Ilaboya and Lodikero (2017); Eneh (2018); Anichebe (2019); Ibadin and Ehigie (2019); Uwuigbe, Olorunshe, Uwuigbe, Ozordi, Asiriuwa, Asaolu and Erin (2019). Most of these prior studies were carried out in listed conglomerate firms, oil and gas firms, non-financial firms, and the periods covered stopped at 2015. Also, prior studies did not focus on how Beneish model can provide insights for detecting financial statement fraud in insurance companies listed on the Nigerian Exchange Group in Nigeria. More so, previous studies have fallen short in addressing the gender diversity of corporate governance structures in Nigeria's listed insurance company. This is the gap this study filled. The study covered a period of six (6) years, that is, 2014 to 2019. This study is distinct from other related studies in that, the data analysis was done in such a way that the uniqueness of any company used in this study does not interfere with the findings of the study. Consequently, the broad aim of this study is to examine the effects of corporate governance structure on financial statement fraud likelihood of listed insurance companies in Nigeria. Therefore, this paper is structured into five sections. Following this introduction,

section two is concerned with literature review. Section three discussed the methodology adopted for the study; section four discussed the results, while section five provides the conclusion and recommendations.

Conceptualizing Corporate Governance in Nigeria's Organizational Context

Corporate governance means the manner in which organizations are not only regulated but governed. The governance structures clearly indicate how rights and responsibilities within the organization are shared among the diverse stakeholders having a stake in the organizational operations of an entity (Zvavahera & Ndoda, 2014).

Corporate governance can as well be conceptualized as the manner in which power is exercised in the management of economic and social resources for sustainable human development. It addresses the leadership role in the institutional framework. According to Kwakwa and Nzekwu (2003), corporate governance is a vital ingredient in the maintenance of the dynamic balance between the need for order and equality in society; promoting the efficient production and delivery of goods and services, ensuring accountability in the house of power and the protection of human rights and freedom. Board size refers to the number of Directors on board, and it is an important variable in the study of relationship between corporate governance and financial statement fraud likelihood. Another important characteristic that can affect the monitoring ability of the board is board size (Eisenberg, Sundgren & Wells, 1998).

Board gender diversity is simply defined as the proportion of women on the board. Board gender diversity is a significant aspect of the board; it is defined as the presence of female directors on the board of directors of corporations. The concept of board diversity suggests that companies' boards should be designed in a way to reflect the structure of the society with an appropriate representation of gender (Daily & Dalton, 2003). The number of audit committee meetings has been used frequently as proxy for diligence and activeness of audit committee in corporate governance literature (Al-Lehaidan, 2006). Raghunandan, Rama & Read (2001) document that companies with less audit committee meetings are often found to have problems of financial reporting. It is argued that, the ability of the audit committee to uncover any financial irregularity and resolve problems in the

financial reporting process will depend largely on the frequency with which the committee meets to consider issues affecting the company. However, the various corporate governance codes (both the US and Nigeria), have not made any categorical statement on the frequency of audit committee meetings.

The independence of members of a supervisory governance structure from executive management has been widely regarded as a necessary precondition for its effectiveness and supervisory quality (Lee & Chen, 2011). The UK Code of Best Practice, issued by the Cadbury Commission (1992) defined independent audit committee member as one who is independent of management and free from any business or other relationship which could materially interfere with the exercise of their independent judgment, apart from their fees and shareholding.

History and Origins of Financial Statement Fraud in Nigeria

Association of Certified Fraud Examiners (2008) claims that financial statement fraud is the deliberate misrepresentation of the financial condition of an enterprise accomplished through the intentional misstatement or omission of amounts or disclosures in the financial statements to deceive financial statement users. Financial statement fraud has been defined as a deliberate attempt by companies to deceive or mislead users of published financial statements by preparing and disseminating materially misstated financial statements. Financial statement fraud has also been defined as the deliberate fraud committed by management that hurts investors and creditors through materially misleading financial statements (Rezaee, 2008). Financial statement fraud differs from other frauds in that it is committed usually by management, to deceive financial statement users while misappropriation of assets is committed against an entity most often of by employees (Niamh & Mary, 2007).

Asyiqin, Razali and Arshad (2014) examined the relationships between corporate governance structure and the likelihood of fraudulent financial reporting. Likelihood of fraudulent financial reporting is based on Beneish M-score model and Altman's Z-score model. Content analysis of annual reports of 227 public listed companies in Malaysia for the periods of 2010-2011 were examined. It found that board size has an insignificant effect on fraudulent financial reporting. The study also revealed that independent non-

executive directors' effectiveness has negative significant influence on likelihood of fraudulent financial reporting. Akhmetova and Batomunkueva (2014) examined the relationship between characteristics of board and probability of financial distress, measured by Altman's Z-score models in Sweden and Denmark. The study employed multiple binary regression analyses and found that board independence, board ownership and employee representatives and market capitalization have significant relationship with probability of financial distress.

Laith (2015) examined the effects of board characteristics on financial manipulation. The study used non-financial companies' annual reports for 5 years (2010-2014) to extract the needed information. The Logistic regression results revealed that there is a positive relationship between board composition, board leadership structure and manipulation in financial statements, while no significant relationship between board size, and manipulation in financial statements.

Manzaneque, Priego and Merino (2016) explored the impact of corporate governance in Spanish listed companies on the likelihood of financial distress between 2007 and 2012 using a matched-pairs research design with 308 observations. It employed logistic models and found a negative relationship between board size and the likelihood of financial distress. The study also found that board independence has a negative influence on financial distress likelihood.

Hasnan, Razali and Hussain (2020) examined the impact of board's characteristics on the incidence of financial restatement in Malaysian Public Listed Companies. The study constructed a matched-pair sample of 76 restatement firms and 152 non-restatement firms for the period between 2006 and 2013. It found that board size, multiple directorship, political connections and founder on board have significant relationship with the likelihood of financial restatement, while other board characteristics do not associate with financial restatement. Eneh (2018) examined the effect of board attributes on corporate fraud likelihood of quoted manufacturing firms in Nigeria. This study utilized a longitudinal research design. The sample covered 15 manufacturing companies in Nigeria as at 2017. The binary regression was employed as the method of data analysis and it revealed that the odd ratio of board size and board gender diversity is nevertheless not significant.

Anichebe (2019) examined the nexus between financial statement fraud and corporate governance elements using panel data collected from firms under the agricultural sector of the Nigeria stock exchange between 2013 and 2017 financial year. Longitudinal design and binary logistic regression technique were employed in analyzing the data. The findings revealed that board size has no significant impact on financial statement fraud likelihood.

Board Gender Diversity and Financial Statement Fraud Likelihood

Ilaboya and Lodikero (2017) investigated the relation between board independence and financial statement fraud using female gender diversity as moderating variable. The data were sourced from a sample of seventy-five companies listed on the Nigerian Stock Exchange as at 31st December 2016. The regression analysis reveals a significant negative relationship between the explanatory variables of board independence, female gender diversity and financial statement fraud. However, the joint effect of board independence and financial statement fraud did not produce the desired result.

Ibadin and Ehigie (2019) examined corporate governance and financial statements manipulation in Nigeria. The study used logistic regression analysis. The data used were extracted from 65 quoted companies in the Nigeria Stock Exchange for a 6-year period of 2009-2014. Results revealed that an increase in the board composition and the proportion of female gender in the entire board will increase the likelihood of detecting fraud. It was revealed that an increase in the effectiveness and efficiency of the composition of the audit committee may reduce the likelihood of financial statements manipulation in Nigeria companies. Lastly, it was discovered that a decrease in board dominance will increase the likelihood of detecting, preventing and investigating misstatements in the annual financial statements of Nigeria companies.

Audit Committee Meetings and Independence in Financial Statement Fraud Likelihood

Huang and Thiruvadi (2003) examined the relationship between audit committee characteristics and fraud, a proxy for potential fraudulent financial reporting. It used a final sample of 218 firms from S&P SmallCap600 with a December 31, 2003 fiscal year-end and

audit committee characteristics data collected from the SEC database. It employed panel regression technique of analysis and it found that the meeting frequency of the audit committee is not associated with fraud prevention.

Giuseppe and Lamboglia (2012) investigated effect of governance on accounting irregularities regarding Italian listed companies during the period 2001- 2011. The analysis identifies 26 listed companies involved in alleged instances of accounting frauds during the ten-year period and the firm's representatives who are more frequently charged for the accounting frauds are the CEO and the Chairman. The logistic regression analysis showed that the existence of an audit committee reduces the likelihood of frauds. Moreover, the likelihood of financial statements frauds decreases when the number of the audit committee meeting increases.

Huang and Thiruvadi (2010) examined how various characteristics of the board of directors and other governance features affected the occurrence of U.S. corporate fraud in the 1978–2001 periods. It found that board composition and the structure of a board's oversight committees are significantly correlated with the incidence of corporate fraud. In the sample, as the number of independent outside directors increased on a board and in the board's audit and compensation committees, the likelihood of corporate wrongdoing decreased.

Uwuigbe, Olorunshe, Uwuigbe, Ozordi, Asiriuwa, Asaolu and Erin (2019) assessed the association which exists between financial statement fraud and governance among business organizations in Nigeria. A population of 122 non-financial companies registered on Nigeria stock exchange was limited to 20 firms employing the rule of thumb based on stratified and simple random technique for a period of 2012-2016. The method of data analysis is panel regression. Findings showed that an insignificant association exists among audit committee independence, the composition of the board and financial statement fraud.

Theoretical Framework: Agency Theory

Agency theory is one of the theoretical principles underlining the concept of corporate governance. It has its roots in economic theory exposited by Alchian and Demstz (1972) and further developed by Jensen and Meckling (1976). The principle emerges out of separation

of ownership and control. It focuses on the relationship between the principals and the agents. According to this theory, shareholders hire agents to perform work; while, the principals delegate the running of the business to directors or managers who are the shareholder's agents (Clarke, 2004). The agency theory focuses on problems that can arise when one party, the principal, contracts another party the agent to make decisions on behalf of the principals. Agency problems may occur because agents can hide information and manage firms for their own interest; example, as in the cases of Adelphia, Enron, WorldCom and Parmalat (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 2000). According to Jensen and Meckling (1976), agency problem is concerned with the consumption of perquisites by managers and other types of empire building (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 2000).

Ideally, shareholders expect the agent to act and make decisions in the principal's interest. However, the agent may not necessarily act and make decisions in the best interests of the principals (Padilla, 2002). The loss arising from misappropriated interest of opportunistic and self-interested managers is referred to as agency loss. Agency loss represents the extent to which returns to the residual claimants, the owners, fall below what they would be if the owners exercise direct control over the company. Agency theory provides a natural background on the effect of corporate governance on financial statement fraud likelihood because financial statement fraud likelihood concerns arise when there is a conflict of interests between managers and owners coupled with information asymmetries. The model underlying agency theory is that of a rational actor who seeks to maximize his individual utility. Both agents and principals seek to receive as much possible utility with the least possible expenditure (Davis, Schoorman & Donaldson, 1997). Owners become principals when they contract with executives to manage their firms for them. The managers agree to be agents because they perceive opportunities to increase their own wealth (Davis et al, 1997). However, agency costs are incurred when the interests of both diverge. In that case, several studies were led to know the various sources of conflict of interests and try to encircle them.

Materials and Methods

Ex post facto and causal research design are adopted for this study. The population of this study is made up of the twenty-eight (28) listed insurance companies on the floor of the Nigerian Exchange Group from year 2014 to 2019. In this study, statistical sampling is not used due to the small size of the population; however, all the listed 28 insurance companies are census as the sample size. The data used in this study are secondary data derived from annual reports of the listed insurance companies that are listed on the Nigerian Exchange Group. Logistic Panel regression technique is used to analyze this study. Logistic regression is the linear regression analysis to conduct when the dependent variable is dichotomous (binary).

The M-Score modeled by Messod Beneish is applied to measure financial statement fraud likelihood which serves as the dependent variable. In the Beneish model, a score greater than -2.22 (i.e., less of a negative) is an indication that the company's financial statements may have been manipulated (Warshavsky, 2012). The score of "1" was given if the companies had a score greater than -2.22 which means there was a possibility of fraudulent financial statement and "0" if otherwise. 0 and 1 are assigned to the two outcomes of a binary variable. Often, the 0 represents a negative response and the 1 represents a positive response. The M-Score is composed of eight ratios that capture either financial statement fraud that can result from earnings manipulation or indicate a predisposition to engage in earnings manipulation.

The Beneish (1999) model is presented mathematically as follows:

$$\text{M-Score} = -4.84 + 0.92 \times \text{DSRI} + 0.528 \times \text{GMI} + 0.404 \times \text{AQI} + 0.892 \times \text{SGI} + 0.115 \times \text{DEPI} - 0.172 \times \text{SGAI} + 4.679 \times \text{TATA} - 0.327 \times \text{LVGI}$$

Variables (Financial Ratios)

Days Sales in Receivables Index (DSRI) = $(\text{Net Receivables}_t / \text{Sales}_t) / (\text{Net Receivables}_{t-1} / \text{Sales}_{t-1})$

Gross Margin Index (GMI) = $[(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$

Asset Quality Index (AQI) = $[1 - (\text{Current Assets}_t + \text{PP\&E}_t + \text{Securities}_t) / \text{Total Assets}_t] / [1 - (\text{Current Assets}_{t-1} + \text{PP\&E}_{t-1} + \text{Securities}_{t-1}) / \text{Total Assets}_{t-1})]$

Sales Growth Index (SGI) = $\text{Sales}_t / \text{Sales}_{t-1}$

Depreciation Index (DEPI) = ($Depreciation_{t-1}$/ ($PP\&E_{t-1}$ + $Depreciation_{t-1}$)) / ($Depreciation_t$ / ($PP \& E_t$ + $Depreciation_t$))
Sales General and Administrative Expenses Index (SGAI) = (SG&A $Expense_t$ / $Sales_t$) / (SG&A $Expense_{t-1}$ / $Sales_{t-1}$)
Leverage Index (LVGI) = [(Current $Liabilities_t$ + Total Long Term $Debt_t$) / Total $Assets_t$] / [(Current $Liabilities_{t-1}$ + Total Long Term $Debt_{t-1}$) / Total $Assets_{t-1}$]
Total Accruals to Total Assets (TATA) = (Income from Continuing $Operations_t$ - Cash Flows from $Operations_t$) / Total $Assets_t$
In order to estimate the relationship between corporate governance structure and financial statement fraud likelihood, financial statement fraud likelihood which is the dependent variable is modeled as a function of board size, board gender diversity, audit committee meetings and audit committee independence. Econometrically, this is specified as:

$$\frac{FSFL_{it}}{1-FSFL_{it}}=\beta_0 + \beta_1 BSIZ_{it} + \beta_2 BGDR_{it} + \beta_3 ACME_{it} + \beta_4 ACIN_{it} + \varepsilon_{it}$$

Where;
FSFL = Financial statement fraud likelihood
BSIZ = Board size
BGDR = Board gender diversity
ACME= Audit Committee meeting frequency
ACIN= Audit committee independence
ε = error term
β_0 = Intercept of the regression line
B_1-β_4= Coefficient of the independent variables

Table 1: Variables Measurements

Variable	Acronym	Measurements
Financial statement fraud likelihood	FSFL	Integration of Beneish M-score for detection of fraudulent financial reporting (1999). The score of "1" will be given if the companies had a score greater than -2.22 and "0" if otherwise (Anichebe et al., 2019).
Board size	BSIZ	Total number of directors on the board (Uwalomwa et al., 2014).
Board gender diversity	BGDR	is measured as the proportion of female executives in the board to the total number of board members (Ilaboya & Lodikero, 2017).

Audit committee meetings	ACME	The number of times the audit committee meet in a year (Guseppe & Lamboglia, 2012).
Audit committee independence	ACIN	The proportion of non-executive directors in the audit committee to the total number of audit committee members (Hatice, Samuel & Varma, 2004).

Source: Compiled by the Authors, 2022.

Data Analysis and Results

Descriptive Statistics of the Variables

Table 2: Descriptive Statistics

	FSFL	BSIZ	BGDR	ACME	ACIN
Mean	0.726190	9.273810	0.154286	3.857143	0.430179
Std. Dev.	0.447245	2.575105	0. 131379	0.849697	0.117124
Skewness	-1.014506	0.423081	0.559836	-0.252945	-1.386861
Kurtosis	2.029223	2.990195	2.545330	4.280497	5.154031
J-Bera	35.41510	5.012607	10.22274	13.26917	86.33366
Probability	0.000000	0.081569	0.006028	0.001314	0.000000
Observations	168	168	168	168	168

Source: Eview 10 Output, 2022.

The dependent variable of financial statement fraud likelihood (FSFL) reported a mean value of 0.726190, which is approximately 1, it indicates that on the average, sampled insurance firms may likely experience fraudulent financial reporting during the period under consideration, it also show that an average of the sample firms may likely manipulates their financial statements.

The descriptive statistics also reports the mean value of BSIZ is 9.27381 indicates the average number of board members in listed insurance companies in Nigeria is approximately 9. The standard deviation value of BSIZ is 2.575105. The Board Gender Diversity (BGDR) mean value is 0.154286 which suggest that on the average 15% of the board members of quoted insurance firms are females.

It is ascertained in the descriptive statistics that Audit Committee Meetings (ACME) have a mean value of 3.857143, this shows that insurance firms' audit committee meets an average of 4 times annually approximately. The descriptive statistics shows the mean value of audit committee independence (ACIN) to be 0.430179, it indicates

that at least 43% of the audit committee are independent directors and they are present in the audit committee of listed insurance firms in Nigeria.

Correlation Matrix

Table 3: Correlation Matrix

Correlation Probability	FSFL	BSIZ	BGDR	ACME	ACIN
FSFL	1.000000				

BSIZ	0.029091	1.000000			
	0.7082	-----			
BGDR	-0.070608	0.024299	1.000000		
	0.3631	0.7546	-----		
ACME	0.132809	0.198605	0.020537	1.000000	
	0.0861	0.0099	0.7916	-----	
ACIN	0.021515	0.118761	-0.068345	0.041173	1.000000
	0.7819	0.1252	0.3787	0.5962	-----

Source: Eview 10 Output, 2022.

The use of correlation matrix is to check for multi-collinearity and to explore the relationship between each explanatory variable and the dependent variable. The correlation analysis show that there exists positive relationship among financial statement fraud likelihood and board size, audit committee meetings and audit committee independence while but negatively related with board gender diversity. Finally, no two explanatory variables were perfectly correlated thus the highest correlation value is 0.198 while the lowest is 0.020, there is no correlation coefficient greater than 0.70 which indicates that multi-collinearity among the variables does not exist.

Andrews and Hosmer-Lemeshow Goodness of Fit Test
Table 4: Goodness of Fit Test

	Quantile of Risk Low	High	Dep=0 Actual	Expect	Dep=1 Actual	Expect	Total Obs	H-L Value
1	0.3669	0.5560	9	8.42818	7	7.57182	16	0.08198
2	0.5571	0.6521	6	6.85765	11	10.1424	17	0.17978
3	0.6524	0.6882	5	5.55696	12	11.4430	17	0.08293
4	0.6920	0.7141	6	5.03509	11	11.9649	17	0.26273
5	0.7142	0.7402	5	4.61601	12	12.3840	17	0.04385
6	0.7430	0.7597	4	3.98158	12	12.0184	16	0.00011
7	0.7598	0.7850	3	3.85184	14	13.1482	17	0.24357
8	0.7868	0.8266	4	3.34130	13	13.6587	17	0.16162
9	0.8280	0.8583	1	2.63333	16	14.3667	17	1.19877
10	0.8624	0.9784	3	1.69807	14	15.3019	17	1.10897
		Total	46	46.0000	122	122.000	168	3.36433

H-L Statistic	3.3643	Prob. Chi-Sq(8)	0.9095
Andrews Statistic	5.2137	Prob. Chi-Sq(10)	0.8765

Source: Eview 10 Output, 2022.

Table 4 above presents the result of the Hosmer-Lemeshow test of goodness of fit with the null hypothesis of the model fit the regression data and the alternate hypothesis of the model does not fit the data. The test is a Chi-square estimation of the goodness of fit test, and the result of the analysis reported H-L Statistic of 3.3643, and a probability value of 0.9095 indicating there is no evidence of poor fit which means the regression model is correctly specified.

Variance Inflation Factor Test
Table 5: Variance Inflation Factor Test

	Coefficient	Uncentered	Centered

Variable	Variance	VIF	VIF
BSIZ	0.000187	5.100903	1.068467
BGDR	6.66E-06	2.338915	1.019323
ACME	0.001736	2.349384	1.081178
ACIN	0.002514	5.176387	1.070959
C	0.175109	1.519351	NA

Source: Eview 10 Output, 2022.

The variance inflation factor (VIF) explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. Essentially, VIFs above 10 are seen as a cause of concern as observed, none of the variables have VIF's values more than 10 and hence none gave serious indication of multicollinearity.

Test of Hypotheses

The Probability (LR statistic) of 0.0003 indicates that the model is well specified and fitted as the probability value of the LR statistics is less than the significance value at 5% level of significance. Therefore, the model is fit and can be relied upon.

Table 6: Random Effect Logistic Regression

Variable	**Coefficient**	**Standard Error**	**Z-Statistics**	**Probability Value**
C	-1.028179	2.638189	-0.39	0.697
BSIZ	0.033587	0.081418	0.41	0.680
BGDR	-1.184699	0.512695	-2.31	0.024
ACME	-1.321879	0.241619	-5.47	0.000
ACIN	-3.205427	1.101483	-2.91	0.004
Adjusted R^2	0.684			
Hausman Prob. Value	0.7555			
The Probability Value of LR statistic	0.0003			

Source: Eview 10 Output, 2022.

The results of the binary logistic regression reveal that board size has positive coefficient value of 0.033587and corresponding p-value of 0.680, the probability value is greater than 0.05 significance level. The result indicates that a unit increase in board size may likely increase financial statement fraud likelihood by 0.033587 units. Based on the fact that the probability value of 0.680 is greater than the level of significance at 0.05, this study therefore accepts the null hypotheses that board size has no significant effect on financial statement fraud likelihood of quoted insurance companies in Nigeria.

Board gender diversity, Audit committee meetings frequency and Audit committee independence have negative coefficient value of -1.184699; -1.321879 and -3.205427 respectively with corresponding probability value of 0.024, 0.000 and 0.004 respectively. These probability values are less than the significance value at 0.05. Since the probability values are less than 0.05 level of significance, this study therefore accepts the alternative hypotheses that board gender diversity, audit committee frequency of meeting and audit committee independence have significant negative effect on financial statement fraud likelihood of quoted insurance companies in Nigeria.

The Hausman Specification Test result indicates that Random Effect logistic regression is most appropriate to Fixed Effect logistic regression given the P-value of 0.7555 which is more than the critical value of 0.05. Therefore, Random Effect logistic regression is most desirable.

Discussion of Findings

The result of the logistic regression showed that board size has no significant effect on financial statement fraud likelihood of listed insurance companies in Nigeria. This indicates that board size does not influence financial statement fraud likelihood because their function contributes little in monitoring the activities of the management due to threat on independence, time constraints, and adequate information. The finding is in tandem with the findings in the previous works of Asyiqin et al., (2014); Laith (2015); Eneh (2018); Anichebe et al., (2019), but contrary to the study of Manzaneque et al., (2015); Hasnan et al., (2016).

The study found that board gender diversity has a significant negative effect on financial statement fraud of listed insurance companies in Nigeria. The result signifies that the presence of a female

on the board will reduce financial statement fraud because women are known to take calculated risks, innovative, better at networking and less aggressive in decision making. This finding is in consonance with the empirical studies of Ilaboya and Lodikero (2017); Ibadin and Ehigie (2019), but contradicts the studies of Hasnan et al., (2016); Eneh (2018).

The study revealed that audit committee meeting frequency has a significant negative effect on financial statement fraud of listed insurance companies in Nigeria. This suggests that an increase in the number of times the audit committee meets will reduce fraudulent financial statement because an audit committee that meets frequently tends to be effective and efficient in carrying out their oversight functions on the financial statement and reports. This finding is in line with the previous study of Giuseppe and Lamboglia (2012) and contradicts the study of Huang and Thiruvadi (2013).

The result of the logistic regression indicates that audit committee independence has a negative significant effect on financial statement fraud of listed insurance companies in Nigeria. It means that audit committee independence reduces financial statement fraud because an independent audit committee will not be bias and be free to conduct its functions without fear or favour. The finding agrees with the studies of Hatice et al., (2004); Giuseppe and Lamboglia (2012) and Ibadin and Ehigie (2019). But contradict the study of Uwuigbe et al., (2019).

Conclusions and Recommendations

Based on the result that board size has no significant effect on financial statement fraud likelihood of listed insurance companies in Nigeria, the study concludes that board size does not reduce financial statement fraud. It shows that the size of a board whether large or small board, it does not reduce financial statement fraud of listed insurance in Nigeria. In the case of significant negative effect of board gender diversity on financial statement fraud of listed insurance companies in Nigeria, the study concludes that board gender diversity reduces financial statement fraud of listed insurance companies in Nigeria. Based on the significant negative relationship between audit committee meeting frequency and financial statement fraud as it has been reported in the logistic regression, the study concludes that the

frequency of audit committee meetings reduces the occurrence of financial statement fraud of listed insurance companies in Nigeria, the frequent meetings of audit committee serves as checks on the opportunistic tendency of management.

Lastly, the study concludes that audit committee independence also reduces the likely occurrence of financial statement fraud in listed insurance companies in Nigeria because an independent audit committee is free from the control of the management and it conducts its activities without fear and favour. The study recommends that managers should focus more on the experience and other demographic characteristics of the board members to improve the quality of financial reporting. Insurance firms in Nigeria should increase the number of female members in the board of directors as this will increase the capacity of the board of directors to checkmate fraud. Audit committee should meets frequently, based on the descriptive statistics, it was discovered that audit committee meetings frequency reduces financial statement fraud likelihood, therefore, audit committee should meet more than 4 times in a year to increases their efficiency and the rate at which they reduce financial statement fraud. Also, the number of independent members in the audit committee should be statutorily increased. In addition, it is important to ensure that independent members appointed into the audit committee are individuals with good reputation and character who will be willing to expose fraudulent financial statements.

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