



CHIEF EXECUTIVE OFFICER'S CHARACTERISTICS AND FINANCIAL DISTRESS LIKELIHOOD OF LISTED DEPOSIT MONEY BANKS IN NIGERIA: MODERATED BY BOARD SIZE

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Abstract

This study examines the influence of chief executive officer (CEO) characteristics on the financial distress of listed deposit money banks in Nigeria. A correlational research design was adopted, with a population of 14 banks listed on the Nigerian Exchange Group covering the period 2007–2022. Given the population, a census sampling technique was employed, resulting in a sample size of 14 banks. The study relied on secondary data and utilized the Panel Corrected Standard Errors (PCSE) regression model, supported by relevant diagnostic tests to ensure the reliability and robustness of the results. The findings from the direct model reveal that CEO gender has no significant relationship with financial distress. However, CEO tenure shows a positive and significant relationship with financial distress. CEO experience exhibits a negative but statistically insignificant relationship. In the moderated model, the interaction between CEO tenure and board size is statistically significant, highlighting the important role of board size in influencing the tenure–financial distress relationship. Based on these findings, the study recommends that regulatory bodies such as the Financial Reporting Council of Nigeria (FRCN) and the Securities and Exchange Commission (SEC) should enforce strict compliance with corporate governance codes among deposit money banks. Emphasis should be placed on balanced CEO appointments, including gender diversity, to enhance decision-making. Additionally, while CEO tenure and experience should be encouraged, effective monitoring mechanisms should be implemented to prevent managerial entrenchment. Appointing non-executive directors with relevant banking expertise should be prioritized to strengthen oversight and mitigate financial distress.

Keywords: financial distress, chief executive officer characteristics, chief executive officer tenure, board size, Nigeria

1. Introduction

It is imperative to note that the survival and growth of an organization will certainly be considered as part of the major concern of organizations' stakeholders. In this regard, the management deemed it necessary to protect their organization against financial distress through coherent and integrated management policy for effective decision making. Therefore, financial distress can be attributed to various issues associated to some micro and macro-economic factors in an ordinary business operation (Egbo, 2012).

Rono (2018) simply attributed corporate financial distress to the corporate governance mechanism failure to achieve the targeted objective of the business long and short-term objective on part of chief executive officer (CEO). Enyew et al. (2019) defines financial distress as a circumstance that an entity cannot settle its creditor's debt obligations which in turn leading to

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bankruptcy or restructuring. Sunday and Innocent (2021) considered failed bank as a situation where the bank becomes insolvent that it cannot be able to meet its obligations to its customers due to illiquidity. Kaufman (1996) expressed that banks fails when its assets market value drops below that of its liabilities where the capital net worth becomes negative.

Nevertheless, some classical studies such as Altman (1983), Andrade (1998), Asquith (1994), Chen (1997), Opler and Pinkowitz (1999) among others, came up with some relevant model in an attempt to determine banks distress. Accordingly, wide range of scholars from various context such as Brigham and Gapenski (1994), Outecheva (2007), Kazemian et al. (2017), Khan et al. (2020), Sunday and Innocent (2021) examined the determinants of financial distress.

The attributes of CEOs were often seen as vital elements of an organization that have implication on growth and survival of the banks. The CEOs age attributes guarantee the survival of bank (Rono, 2018). Shah and Raza (2022) termed CEOs attributes as important determinants of financial distress in bank.

Gender diversity has become one of the major issues of concern from businesses and political perspectives are concern. This study reviews its relevance on basis of business operation. For example, García and Herrero (2021) argued that women are mostly risk averse, meanwhile, such gender behavioral differences found in the women has an implication on risk management of business which also have a link to financial distress of an organization. Although, scholars such as Mittal (2018), Kristanti and Herwany (2017) and Darrat et al. (2014) considered the CEO gender diversity in relation to financial distress likely as controversial issues as among various researchers.

Over decades the relationship between CEOs tenure and financial distress has been reviewed across different sectors and environment. Cheng and Leung (2012) opined that CEOs tenure influences their capability and confidence in delivering their service which could also affect the survival and growth of their organization. Ali and Zhang (2015), Ali and Zhang (2014) revealed that the tenure ship of CEOs of organizations have influence on the reliability of information they provided for decision making and ultimately reflect on the financial distress and survival of the organization.

According to Hu et al. (2015), CEOs tenure has a relationship with their attitude in managing the financial earnings of their organization which also linked to the organization growth financially. CEOs tenure Zahra et al. (2018) opined that CEOs tenure is a good determining factor of financial distress in organization. The tenure of CEOs contributes to the power of the CEOs based on Agency theory which direct support the influence of the CEO on the financial risk level of banks.

Also, Chowdhury and Doukas (2022) posited that CEO experience has the tendency to improve the performance of an organization during the financial distress situation based on experience. However, Leverty and Grace (2012) opposed that there is no clear link between CEO experience and firm's financial distress as shown in their study conducted. But, Schoar and Zuo (2016) believe that the CEO experience is useful towards improving deterioration financial situation of an organisation due to his experience which comprises of his skill and ability.

It is evidential that the ability of CEO is critical in determining the strength and weakness of firms based on experience (Bertrand & Schoar, 2003). CEO experience and background have an adverse effect on corporate failure of an organisation (Miglani, 2014). But, Noor and Iskandar (2012) postulated that CEO experience and expertise cannot in any way guarantee success and failure of an organisation.

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At the aftermath of economic meltdown, the Central Bank of Nigeria (CBN) and Nigeria Deposit Insurance Corporation (NDIC) in June 2009 initiated an exercise towards accessing the financial well-being of 24 banks. 9 nine out of the 25 banks could not meet up with the 10% minimum capital adequacy ratio, and 25% liquidity ratio beside the higher non- performing which led to the dismissal of their CEOs of the banks (Vanguard, 2009).

In an effort to comply with the requirement of the financial policy and operational reforms, some of the banks resorted to merger and acquisition. For example, Plantinum Habib bank Plc, Africa Bank, and Spring Banks Plc were merged to form Tier 2 capital banks and thereafter some were licensed as national banks. Also, in recent times, Caleb (2018) and Moses (2018) reported how Skye bank of Nigeria Plc was taken over by Polaris as initiated by the CBN, and subsequently, Diamond Bank of Nigeria Plc was merged with Access bank of Nigeria Plc in 2018. Recently, Union bank was reported to be taken over by Titan trust (Segun, 2022).

This study is motivated by the inconsistencies in existing literature regarding the relationship between CEO attributes and the likelihood of financial distress. For instance, Muijen et al. (2022) and Rono (2018) found a positive and significant relationship between CEO age and financial distress. However, when examining CEO gender, Rono (2018) reported a positive but insignificant effect on financial distress, whereas Lawrence et al. (2021) established that CEO gender diversity has a significant negative influence on the likelihood of financial distress among manufacturing firms in Nigeria.

Similarly, research on CEO experience presents mixed findings. Yao (2020) concluded that CEO experience has a statistically positive and significant relationship with financial distress, while Rono (2018) reported an insignificant positive association. These conflicting outcomes highlight the need for further investigation into how CEO characteristics shape financial distress outcomes, particularly within the Nigerian banking context.

The inclusion of the moderator board size will enable the researcher fill the existing gap as explained, where the changes in the straight and direction of the relation between the independent variable (CEOs attributes) and dependent variable (financial distress likelihood) will contribute to the existing knowledge and literature of accounting and finance. It is against this backdrop that the main objective of this study shall be to examine how moderate the effect of CEOs attributes on financial distress likelihood of listed deposit money banks in Nigeria.

2. Literature Review

Review of Empirical Literatures

This focuses on the review of the empirical studies in order to identify and to bridge the existing gaps in the literatures. It is essential to note that the review is categorized in to general and specific. The general review broadly focused on all literatures related to the subject matter i.e CEOs attributes as construct representing the independent variable and financial distress representing the dependent variable of the study, without separating the proxies of the studies. Whereas, the specific review only focused on the specific variables being the proxies of the independent variable (CEOs age, CEOs gender, CEOs tenure and CEOs experience) in relation to dependent variable of the study financial distress likelihood. On the other hand, board size is reviewed in relation to financial distress likelihood.

CEOs Gender and Financial Distress

Naafs (2019) in his study conducted to access the relationship between CEOs characteristics and firm performance during financial crisis of non-financial firms trading in S &

P 1500 Index, during the financial crisis of 2004 – 2009. It was shown that CEOs gender has a negative effect on a firm's survival in the financial crisis. As CEOs gender was termed as independent variable of the study and firm's survival was seen as dependents variable of the study. The study employed multiple regression analysis in analyzing the data obtained.

In another regional study conducted by Gerasimova (2021) on the relationship between CEOs characteristics and bank risk-taking of listed commercial banks amongst 28 different counties of the world between 2014 to 2018. CEOs gender has no significant connection with the banks financial risk-taking. The outcome was generated through the analysis of secondary data obtained from the annual financial statement of 121 sampled commercial banks across different regions namely: North America, Europe and Asia- Pacific region respectively. The analysis was done based on the Ordinary Least Square OLS panel multiple regression techniques of analysis. Also, the study considered CEOs gender as one of the independent variable and bank financial risk-taking as dependent variables of the study

On the other hand, another study conducted in Nigeria by Lawrence et al (2021) concluded that CEOs gender has a negative effect on financial distress likelihood of 59 listed manufacturing firms. The study was titled CEOs attributes and financial distress likelihood of listed manufacturing firms in Nigeria for the period between 2010 and 2019, considering CEOs gender among the proxies of CEOs attributes as independent variable and financial distress likelihood represented dependent variable. And logistic regression technique was suitable used to enable the researcher analyzed the secondary panel data.

CEOs Tenure and Financial distress

Dewandono (2018) emphasized that CEOs tenure linked with a firm's financial default risk negatively on significant basis, in a study conducted on impact of top management team characteristics on firm's default risk of some SMEs in UK during the period between (2013-2016). CEOs tenure was considered as independent variable and the financial default risk was seen as dependent variable of the study. The study also, considered the sample of 3,692 SMEs in UK. Multivariate discriminants and regression were employed to enable the research analyse the secondary data obtained based on the measurement of the variables used from Altman Z Score model and regression model of the study. Then, if different model is employed to analyze the variables of the study, the outcome of the research would have change.

Gerasimova (2021) affirmed that CEOs tenure has no relationship with financial risk failure tendency of banks, following his study on the relationship between CEOs characteristics and bank risk-taking of listed commercial banks of 28 countries 2014-2018. The study sampled 121 banks from different regions, (North America, Europe and Asia- Pacific region). And OLS panel multiple regression techniques were used to analyze secondary data obtained from the study. Meanwhile, it was concluded that the outcome of the study has no policy implication since the CEOs tenure has no significant effect on the risk failure tendency of banks. Although, the findings of the research may not be the same if similar work is done in Africa particularly in Nigeria.

In another study by Bulten (2022) where CEOs tenure and board co-option on the level of risk taking of banks between the periods of 2000-2019 were investigated, the study used 1060 banks out of the population of 1275 banks from different part of the world. Where CEOs tenure was considered as independent variable and board co-option ratio on risk taking was considered as dependent variable. it was revealed that CEO tenure has no significant effect on the financial reinstatement is measured as financial distress based on multivariate discriminants analyses of Altman Z Score model approach with aid the panel data collected from the sampled banks. Another different approach of analysis may be employed to generate different outcome.

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CEOs Experience and Financial distress

Rono (2018) investigated the relationship between CEO attributes and financial distress in commercial banks in Kenya for the period of 2016, using descriptive and cross-sectional research design. The independent variable of the study constitutes of CEOs experience among other proxies and the dependent variable of the study is financial distress of commercial banks of Kenya. Furthermore, secondary data was employed to analyzed the data collected from the financial statements of the banks. The study adopts Altman Z score model in predicting the financial distress of the commercial banks in Kenya based on multivariate discriminants analysis as a linear combination of the independent variables that will differentiate best between the groups in the dependent variable of the study. It was found that there is insignificant positive link between CEOs experience and financial distress.

Yao (2020) studied the effect of CEO characteristics successors in relation to financial distress recovery with the mediating role of government subsidiaries between guanxi resources and recovery from financial distress, among 316 non-financial firms in China between 2002- 2018. Independent variable comprises of CEO experience and financial distress as dependent variable. Multiple regression technique was employed to analyse the panel data sourced from the annual financial statement of the sampled firms. It was concluded that CEO experience has a positive connection with financial distress significantly.

Conversely, Rezaee et al. (2021) studied the relationship between CEOs experience and financial expertise associated with financial distress for the period of 2008 to 2017. CEO experience was considered as independent variables of the study and financial distress was seen as dependent variable. Multivariate discriminants analyses were used to measure and predict the distress likelihood from the variables in Altman Z Score model. It was finally concluded that there is a negative and significant effect between CEO experience and financial distress.

Chowdhury and Doukas (2022) investigated whether CEOs are to be blamed on any corporate failures, using sample of 990 US firms for the periods of 1980 to 2016, and using regression analysis. The study considered CEOs experience among other variables as independent variables and firm distress as dependent variable. The result of the study revealed that CEO with low ability has a positive and significant relationship with firms' failure likely hood.

Board Size and Financial Distress

Badu and Appiah (2017) discover a positive significant relationship between board size and firm performance, while investigated the impact of corporate board size on firm performance for a sample of 137 listed firms in Ghana and Nigeria from 2008 to 2014 using regression model. In addition, Kajola et al. (2017) examine the relationship between board size and financial performance of 35 non-financial firms listed on Nigerian Stock Exchange for the period of 2003-2014. The result reveals that there is a positive and significant relationship between board size and the two financial performance proxies (return on assets and return on equity). Also, Okoye et al. (2017) discovered a significant positive relationship between board size and financial sustainability among Microfinance Institutions in Nigeria during the period, 2011 to 2015.

Ssekiziyivu et al. (2018) in their effort to identify the corporate governance practices of Micro-finance institutions and to suggest strategies for improving corporate governance in micro-finance institutions, using SPSS technique of analysis, it discovers that the strategies for improving corporate governance such as having a board in place with financial expertise is necessary. While, in an effort to investigate effect of board size, board composition and board Meetings on the financial performance strength of listed consumer goods in Nigeria over the period of ten years

from 2006 to 2015, El-Maude et al (2018) discover that board size is negatively significant performance growth of listed consumer goods companies in Nigeria. Conversely, Scholtz and Kieviet (2018) discover negative and insignificant effect between board size and firm performance among 80 of the Top 100 listed South African companies for the period of 2013 to 2015.

Considering the existing link between board size and financial distress tendency from the previous literatures, this study employs board size in order to moderate the relationship between CEO attributes and financial distress likelihood of listed DMBs in Nigeria.

Theoretical Review

Organisational Life Cycle Theory

The Organisational Life Cycle Theory is basically seen as one of essential tool and core aspect of the organization's analysis (Goodman & Pennings, 1997). According to Gup and Agrawal (1996) organizational life cycle is a dynamic and realistic mechanism used in measuring the effectiveness of the financial policies of an organisation. It is natural that every business is born, grow and decline, renew and reappear or distress and windup (Kimberly, et al., 1980). Hence, every business passes through different development process based on distinct changes (Scott & Bruce, 1987).

Although, Rehman et al. (2016) came up with five stages life cycle model comprise of growth, mature and stagnant) for univariate process with to other stages growth and mature or mature and stagnant used in multivariate process. However, other scholars criticized the model for being difficult in performing time series analysis. Other scholars like Dickinson (2015) later postulated another model with five stages identified in the life of every business which include birth, growth, maturity, decline and survival.

One of the main reasons for considering the life cycle theory as the under-pinning theory is to be able explain the link between the life cycle of the organization and the effectiveness of the organization in managing the situation. At this point, the life cycle of the organization is represented by the current situation of the organisations while, the organization's effectiveness centered on the management which is represented by the CEOs attributes (Quinn & Cameron, 1983).

Meanwhile, it is pertinent to attribute any changes in an organization to its CEOs attributes. Likewise, whatever situation organisation found itself the CEOs are directly responsible. Certainly, CEOs attributes cannot be exonerated from any serious financial difficulty or distress. Therefore, CEOs personal attributes such as CEOs gender, CEOs tenure and CEOs experience will certainly be considered while accessing or analyzing the any situation in a business operation. Similarly, the effectiveness of the CEOs which is tight down to his personal attribute has a connection with the success or failure of his organization as evident in various studies (Yao, 2020; Chowdhury & Doukas, 2022; Muijen, et al., 2022 & Gerasimova, 2021).

Agency Theory

The agency theory emphasized on a contractual relationship that exist between the principal (owner/shareholders) and agent (managers) to manage the affairs of the organization on behalf of the owners (Jensen & Meckling, 1976). Therefore, the agency theory matters arise between the principals and their agents from varying problems which include asymmetric information as well as changes in based on sensitivity to firm-specific danger, which is in line with the problem of risk sharing that emanated from different risk preferences of the principal and agent. The managers who are seen to be risk takers often take decision that may directly affect the business financial performance out of the desire to increase their allowances.

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The size of the board is expected to moderate any problem arises from the agent and principal relation in running the affairs of business being part of corporate governance mechanism (Harrison & Harrell, 1993). Generally, from the viewpoint of agency theory, board size serves on behalf of the shareholders in order to manage risk exposure in an ordinary business operation.

The major responsibility of board is to provide basis for effective decision to the management on general risk management and control in the business in order to protect and to ensure the survival and growth of the business. Therefore, a good board should be able to take advantage of its size towards aligning the conflicting interest principal and agent in order to enhancing the performance of an organization rather than causing drawn back to the performance which will lead to financial distress of the organization (Jiraporn, et al., 2009). Meanwhile, the theory shall explain the independent variables of this study which is board size in relation to financial distress likelihood, as far as listed DMBs in Nigeria are concern.

3. Research Methodology

A correlational research design was considered suitable for this study. Since, the research aimed at examining the role of a moderating variable on the relationship between explanatory variable and explained variable. The populations of the study will consist of all the fourteen (14) listed DMBs in Nigeria as at 2022. And census sampling technique will be considered suitable for the study where all the 14 listed DMBs will be selected.

Table 1

Population and Sample Size of the Study

S/N	Study Population	Date of Listing
1	Access Bank Nig Plc.	1998
2	Eco Bank of Nig Plc.	2006
3	Firt City Monument Bank Nigeria Plc	2004
4	Fiderlity Bank Nig Plc.	2005
5	First Bank Nig Plc.	1971
6	Guarantee Trust Bank Plc.	1996
7	Stambic IBTC.	2012
8	Sterling Bank Nig Plc.	1993
9	Union Bank of Nig Plc.	1971
10	Unity Bank of Nigeria Plc.	1971
11	United Bank for Africa Plc.	1970
12	Wema Bank Nig Plc.	1990
13	Zenith Bank Nig Plc.	2004
14	Jaiz Bank Nig Plc.	2012

Source: Generated by the Author, 2026

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Variable Measurement

Table 2

Variables Measurement

Variables	Definitions	Measurement	Source
Dependent Variable			
Financial Distress (FD)	The inability of a firm to finance its debt obligation as at when due	Absolute residuals of the model.	Ohlson (1980a)
Independent Variables			
CEOs Gender (CGN)	The category of the CEOs' sex	Value of 1 if CEO is male and 0 if female.	Alqatamin (2017)
CEOs Tenure (CTN)	Number of years spend by an individual in capacity of CEO	Number of years in the work as CEO	Herri et al. (2017)
CEOs Experience (CEX)	The years of CEO's relevant skill, and job experience from within and outside the organization	Number of years working experience	Kariuki et al. (2015)
Moderating Variable			
Board Size (BSZ)	Number of directors that constitute the board	Total number of directors in Board	Juma (2010); Javeed & Yaqub (2017)
Control Variable			
Firm Size (FSZ)	The measure of firm capacity based on its total assets	Natural Logarithm of Total Assets	Opoku et al. (2013) Raihana and Pope (2014)

Source: Generated by the Author, 2026

This study adapted a modified Althman Z score binary logit regression model of (Ohlson, 1980a), which encapsulated the dependent variable of the study that predicted the financial well-being of the banks (healthy or distressed) based on multi discriminant analysis MDA approach. The study used the following assumptions in order to measurement the dependent variable of the study: "Z" serves as the measurement of dependent variable of the logistic regression model.

Since the logistic model essentially deals with binary numbers "0" and "1", it is further assumed that "1" signifies distress and "0" signifies none- distress. Meanwhile, the criteria hold that the "0" and "1" can be determined through the prediction of the residual in the model. Hence, the prediction simply refers to the outcome of the risk or probability drawn from the model as; (1-estimated total value of the independent variables).

Where the predicted value of the probability is > 0.5 then this study classifies the observation as distressed which also signifies high risk of distressed, but if the predicted value of the probability is < 0.5 the observation will be classified as non-distressed which signifies low risk

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of distressed. It is imperative to note that absolute residual value of this model would ultimately translate to the dependent variable of parsimonious model of the study. Although, several studies adopted these techniques and examples include Shumway (2001), Hillegeist et al. (2004), Dechow et al. (1995), Soon et al. (2012), and Collins et al. (2017).

The modified model (Agresti, 2018) is given below as: $P(Y = 1 | X_{1i}, X_{2i}, X_{3i}) = \frac{1}{1 + e^{-Z_i}}$

Where: $P(Y=1 | X_{1i}, X_{2i}, X_{3i})$ represents the probability that the outcome equals 1, given the explanatory variables; the denominator $1 + e^{-Z_i}$ ensures the probability lies between 0 and 1; Z_i is the linear combination of the predictors.

$$Z_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} \dots \dots \dots (i)$$

Where: β_0 = Constant, β_1 - β_3 = Coefficients of parameters, X_1 = Retained earnings/total assets, X_2 = Earnings before interest and taxes/total assets, X_3 = Equity value/ total debt, μ = error term.
 $FD_{it} = \beta_0 + \beta_1 CGN_{it} + \beta_2 CTN_{it} + \beta_3 CEX_{it} + \beta_4 BSZ_{it} + (\beta_5 CGN * BSZ_{it}) + (\beta_6 CTN * BSZ_{it}) + (\beta_7 CEX * BSZ_{it}) + \beta_8 FSZ_{it} + \mu_{it} \dots \dots \dots (ii)$

Where: FD = Financial distress, β_0 = Constant, β_1 – β_5 = Coefficient of the parameters, CGN = CEO Gender, CTN = CEO Tenure, CEX = CEO Experience, FSZ = Firm Size, μ = error term, i = firm, t = time, $CGN * BSZ$ = CEO Gender as moderated by Board Size, $CTN * BSZ$ = CEO Tenure as moderated by Board Size, $CEX * BSZ$ = CEO Experience as moderated by Board Size.

4. Results and Discussion

Descriptive Statistics

This section presents and describes the nature of the study's variables using descriptive statistics. The descriptive statistics is presented in Table 3 displaying the minimum, maximum, mean as well as the standard deviation of the data in respect of all the study's variables.

Table 3

Descriptive Statistics

Variables	Observation	Mean	Standard Deviation	Minimum	Maximum
FD	224	0.970	2.214	-12.922	5.173
CGN	224	0.826	0.380	0	1
CTN	224	4.960	1.778	1	10
CEX	224	13.741	1.258	7	16
BSZ	224	8.455	1.248	6	13
FSZ	224	0.017	0.020	0.013	0.136

Source: Extracted from STATA 17 Output, 2026

Table 3 summarizes the descriptive statistics of the study variables for listed Nigerian deposit money banks. Financial distress (FD) records a mean value of 0.970, indicating a relatively high level of distress over the period, with a standard deviation of 2.214 showing considerable variability. The values range from a minimum of -12.922 to a maximum of 5.173, suggesting wide fluctuations in distress levels across banks.

CEO gender is measured as a dummy variable (0 = female, 1 = male), with a mean of 0.826 and standard deviation of 0.380, indicating that approximately 83% of CEOs are male during the period. CEO tenure has an average of 4.960 years with a standard deviation of 1.778, reflecting moderate dispersion, and ranges from 1 to 10 years. CEO experience shows a mean of 13.741

years and a standard deviation of 1.258, indicating relatively consistent experience levels among CEOs, with values spanning from 7 to 16 years.

Normality Test

Normal distribution is a vital condition in regression analysis. Nevertheless, it is equally vital to note that the OLS estimator is reliable and asymptotically normal whether or not the normality assumption is achieved (Wooldridge, 2013). Furthermore, normally distributed data when employing financial facts is almost impossible since the distribution is indiscriminately randomly distributed amongst and within firms (Wooldridge, 2013).

The non-normality does not have a significant impact on the results of the OLS regression in a moderately large sample study (Wooldridge, 2013). In spite of these theoretical justifications, an additional test of normality was conducted. First, a histogram kdensity test for normality was performed. Figure 1 provides the result of the histogram kdensity test for normality of residuals. The results of the histogram kdensity test for normality indicate that the data was relatively normally distributed.

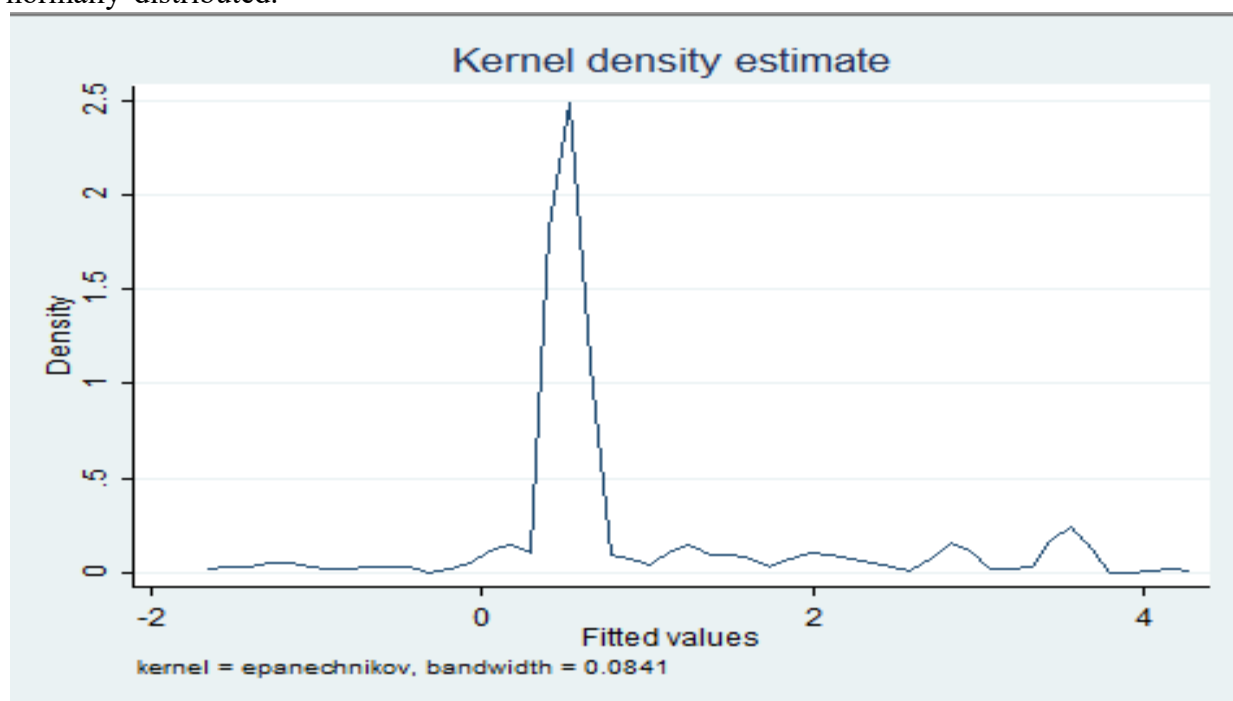


Figure 1: Residual Distribution

Correlation Matrix

Table 4 presents correlation matrix of the study where the degree of association between the dependent variable and independent variables is determined as well as the association among the repressors themselves.

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Table 4

Correlation Matrix

Variables	FD	CGN	CTN	CEX	BSZ	FSZ
FD	1.000					
CGN	0.075	1.000				
CTN	0.303	0.116	1.000			
CEX	0.054	-0.076	0.088	1.000		
BSZ	0.295	-0.021	-0.103	0.204	1.000	
FSZ	0.025	-0.145	-0.169	-0.089	0.281	1.000

Source: Extracted from STATA 17 Output, 2026

Table 4 presents the correlation results between financial distress and CEO characteristics of listed Nigerian deposit money banks. The findings reveal that financial distress is positively associated with CEO gender, CEO tenure, and CEO experience, with correlation coefficients of 0.075, 0.303, and 0.054 respectively. However, these correlation results only indicate the degree of association and cannot be used to infer causality. Thus, regression analysis is required to establish the actual relationships. Furthermore, the absence of multicollinearity among the independent variables is confirmed by acceptable tolerance values (greater than 0.1) and variance inflation factor (VIF) values (less than 10), indicating that the variables are sufficiently independent for reliable regression estimation.

Multicollinearity Test

This section presents and discusses the diagnostic test conducted so as to determine by comparison to the gold standard (that is the best alternative) for reliability and validity of the inferential statistics from the regression model. The test consists of Multicollinearity test (that is tolerance value and variance inflation factor VIF).

Table 5

Multicollinearity Test

Variables	VIF	Tolerance
CTN	1.16	0.860
CEX	1.16	0.864
FSZ	1.09	0.917
CGN	1.05	0.950
BSZ	1.04	0.959
Mean VIF		1.10

Source: Extracted from STATA 17 Output, 2026

The multicollinearity test results indicate that board size has the lowest VIF value of 1.04 with a corresponding tolerance value of 0.959, while CEO tenure records the highest VIF value of 1.16 with a tolerance value of 0.860. These values fall within the acceptable thresholds, confirming that multicollinearity is not a concern in the model.

Modified Wald Test for Groupwise Heteroskedasticity

Table 6

Modified Wald Test for Groupwise Heteroskedasticity

Test	Chi ²	Prob.
Hettest	1.40	0.000

Source: Extracted from STATA 17 Output, 2026

The Wald test checks whether the variance of the residuals is constant across groups (homoskedasticity) or differs from group to group (groupwise heteroskedasticity).

Null hypothesis (H₀): No groupwise heteroskedasticity (equal residual variance across all groups).

Alternative hypothesis (H₁): Presence of groupwise heteroskedasticity (variance differs across groups).

From the result, Chi-square (or Wald) statistic for unmoderated model is 1.40 with *p*-value 0.000. This implies that the *p*-values is far below the 5% significance level, we reject the null hypothesis. This means there is strong evidence of groupwise heteroskedasticity in the model. By implication, the presence of groupwise heteroskedasticity violates the classical OLS assumption of constant variance, making the standard errors from regular OLS invalid and potentially leading to misleading significance tests. Thus, this is another confirmation for reporting Panel Corrected Standard Errors (PCSE) in other to correct the heteroscedasticity in the model.

Analyses of the Model

Table 7

Regression Results Panel Corrected Standard Errors (Moderated)

Variables	Coefficient	P-value	Model Summary
CGN	-4.838	0.057	
CTN	-1.830	0.112	
CEX	-1.184	0.412	
BSZ	-3.077	0.254	
FSZ	5.631	0.301	
CGN*BSZ	0.581	0.065	
CTN*BSZ	0.268	0.041	
CEX*BSZ	1.153	0.406	
R-square			0.255
Wald Chi ²			79.92
Prob. Chi ²			0.000

Source: Extracted from STATA 17 Output, 2026

Chief Executive Officer Gender and Financial Distress

CEO gender has a coefficient of -4.838 with a *p*-value of 0.057, indicating a negative and marginally significant relationship at the 10% level. Thus, the null hypothesis of no significant relationship is rejected at 10%, suggesting that CEO gender influences financial distress, with male CEOs associated with lower distress. This finding aligns with Okika et al. (2024) who reported that male CEOs tend to adopt conservative financial strategies that reduce distress. However, it contradicts Ogunmefun et al. (2026) who found that CEO gender has no significant effect on firm financial outcomes.

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Chief Executive Officer Tenure and Financial Distress

CEO tenure shows a coefficient of -1.830 with a p-value of 0.112, indicating a negative but statistically insignificant relationship. Therefore, the null hypothesis is not rejected, implying that CEO tenure does not significantly affect financial distress. This result is consistent with Lawal et al. (2024) who found no significant relationship between CEO tenure and firm performance. Conversely, it disagrees with Ali and Zhang (2015) who documented that longer CEO tenure significantly influences firm outcomes due to experience and strategic continuity.

Chief Executive Officer Experience, Board Size and Financial Distress

CEO experience has a coefficient of -1.184 with a p-value of 0.412, indicating a negative but insignificant relationship. Hence, the null hypothesis is failed to be rejected, suggesting that CEO experience does not significantly impact financial distress. This supports Ashafoke et al. (2021) who found that CEO experience alone does not significantly determine firm financial health. However, it contradicts Custódio and Metzger (2014) who reported that experienced CEOs significantly improve firm financial decisions and outcomes.

Board Size and Financial Distress

Board size records a coefficient of -3.077 with a p-value of 0.254, showing a negative but insignificant relationship with financial distress. The null hypothesis is therefore failed to be rejected, indicating that board size does not significantly influence financial distress. This is in line with Yermack (1996) who found no consistent evidence that larger boards improve firm outcomes. In contrast, Dalton et al. (1999) found that board size significantly affects firm performance, suggesting governance benefits from larger boards.

Chief Executive Officer Gender, Board Size and Financial Distress

The interaction term has a coefficient of 0.581 with a p-value of 0.065, indicating a positive and marginally significant moderating effect at the 10% level. The null hypothesis is rejected at 10%, suggesting that board size significantly moderates the relationship between CEO gender and financial distress, weakening the negative effect. This supports Musa et al. (2023) who found that board characteristics influence leadership outcomes. However, it contradicts Adams (2019) who found limited moderating influence of board structure on executive characteristics.

Chief Executive Officer Tenure, Board Size and Financial Distress

The coefficient of 0.268 with a p-value of 0.041 indicates a positive and statistically significant moderating effect at the 5% level. Thus, the null hypothesis is rejected, implying that board size significantly moderates the relationship between CEO tenure and financial distress. Specifically, larger boards weaken the negative effect of tenure. This is consistent with Moses (2021) who emphasized the role of board structures in monitoring management. However, it contrasts with Hermalin (2023) who found that board characteristics may not significantly alter managerial effects.

Chief Executive Officer Experience, Board Size and Financial Distress

The interaction term shows a coefficient of 1.153 with a p-value of 0.406, indicating a positive but insignificant moderating effect. Therefore, the null hypothesis is failed to be rejected, suggesting that board size does not significantly moderate the relationship between CEO experience and financial distress. This agrees with Moses (2024) who suggested that managerial characteristics do not always translate into firm outcomes when governance structures are considered. However, it contradicts Stephen (2019) who found that governance mechanisms can significantly shape the impact of executive experience.

Comprehensively, the overall effect of all the regressors (chief executive officer tenure, chief executive officer gender, and board size) on financial distress of listed deposit money banks in Nigeria, the model summary reveals the results of the regression. The Wald Chi² of 79.92 which is at 5% level of significant (0.000) divulge that the model is well fitted, the variables are properly sorted out and combined hence the findings of the study can be relied upon.

The percentage or proportion of total variation in the regressed variable as elucidated by the regressors jointly is given by R-square which is the multiple coefficients of determination. Table 7 proposes that the explanatory variables are able to elucidate the total variation of the regress and (financial distress) to the extent of 26%, the remaining 74% is believed to be accounted for by the random error term.

5. Conclusion and Recommendations

This study examined the effect of CEO characteristics (gender, tenure, and experience) on financial distress of listed deposit money banks in Nigeria, with board size as a moderating variable. The findings reveal that CEO gender has a negative and marginally significant effect on financial distress, suggesting that leadership structure matters in shaping financial stability. However, CEO tenure and CEO experience, although negatively related to financial distress, do not exert significant influence.

Board size and firm size were also found to be insignificant in directly explaining financial distress. Importantly, the moderating analysis shows that board size significantly moderates the relationship between CEO tenure and financial distress, while it weakly moderates the effect of CEO gender and does not significantly influence the relationship between CEO experience and financial distress. Overall, the model demonstrates that CEO characteristics and governance structure jointly explain variations in financial distress, though their individual effects are largely weak.

Based on the findings, it is recommended that deposit money banks in Nigeria place greater emphasis on effective corporate governance structures, particularly in optimizing board size to enhance oversight functions. While CEO characteristics alone may not strongly determine financial distress, their interaction with governance mechanisms—especially board size—should be carefully managed. Regulators and stakeholders should encourage balanced board compositions that can effectively monitor long-tenured CEOs and prevent potential entrenchment effects.

Additionally, banks should adopt holistic leadership selection criteria that go beyond experience and tenure to include strategic competence and adaptability. Finally, policymakers should strengthen corporate governance frameworks to ensure that board dynamics effectively complement executive leadership in mitigating financial distress.

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