Corporate Governance and Financial Performance of Listed Firms in Nigeria; Z-Score Approach

Ime Boniface Philip
Department of Accounting, Faculty of Management sciences
Akwa Ibom State University, Obio Akpa Campus
Imeekwere20@mail.com

Prof. Nkanikpo Ibok
Department of Marketing, Faculty of Management Sciences
Akwa Ibom State University Obio Akpa Campus
nkanikpo@yahoo.com

Essien Amos Ukpe
Department of Accounting, Faculty of Management Sciences
Akwa Ibom State University, Obio Akpa Campus
essienubongukpe1975@gmail.com

Eno Gregory Ukpong
Department of Accounting, Faculty of Management Sciences
Akwa Ibom State University, Obio Akpa Campus
enoukpong@aaksu.edu.ng

Corresponding author email: dorathyakpan@aksu.edu.ng

DOI: 10.56201/jafm.v9.no9.2023.pg42.61

Abstract

This study investigated the effect of corporate governance on financial performance in Nigeria by employing samples from non-finance firms that are listed the floor of the Nigerian Exchange Group for the period 2012-2021. In this study, board size (BODS), board independence (BODI), and board diligence (BODD) were the corporate governance proxies employed in this study. Similarly, corporate financial performance was measured in terms of Altman Z-Score (ZSCO). The population of the study consisted of all the listed non-finance firms and purposive sampling technique was employed to select 70 out of 109 companies. The panel fixed and random effect regression analyses were employed to test the hypotheses of the study. The results obtained from the regression model revealed that board size, board diligence, significantly affect the financial performance of listed firms in Nigeria. However, board independence seemed not to have any significant effect on the financial performance of listed firms in Nigeria during the period under study. It concluded that corporate governance mechanism significantly affects financial performance likelihood of listed non-finance firms in Nigeria. Hence, it was recommended among others that managers of non- finance firms should always validate the financial health of their

company from time to time. It was also recommended that board size should not be less than 10 members as a large board size comprises mix of experience and proficiency.

Keywords: *corporate governance, financial performance, financial distress, Altman-Z score, board size.*

1.0 Introduction

The growing number of corporate scandals, financial performance, and failure of companies in recent years have attracted more attention to corporate governance than ever before. Consequently, studies on corporate financial distress have become topical within finance and governance literature all over the world. Particularly, financial performance detection has become more relevant because of the 2007 financial crisis in which many firms became financially distressed and filed for bankruptcy (Li, Crook, Andreeva & Tang, 2021). Financial performance has become a global problem that requires high-quality monitoring and certain mechanisms to prevent it from affecting various stakeholders such as shareholders and creditors. Hence, the failure of global companies has resulted in search for ways to eliminate these failures and as a result the need for good corporate governance has arisen.

Corporate distress is a broad term used to describe situations in which businesses are experiencing financial distress. Failure, default, insolvency, and bankruptcy are the most commonly used interchangeable terms for financial performance. However, because bankruptcy is the extreme and irreversible result of financial performance, many financially buoyant firms avoid bankruptcy through early reconstruction of operations. Because different countries have different accounting procedures and rules, there are numerous definitions of financial performance. It is widely assumed that it is a situation in which operating cash flow does not exceed negative net assets (Ebun & Emmanuel, 2019). In order to predict financial distress, a variety of models have been used, starting with different statistical techniques like Altman's (1968) multiple discriminant analysis and Ohlson's (1980) logistic regression. Intelligent models like neural network models, support vector machines, genetic algorithms, genetic programming, and others have also been used. These approaches were all centered on the explanatory potential of financial, accounting, and market variables (Manzaneque, Priego & Merino, 2016).

Corporate governance is a mechanism that is used to protect the rights of different stakeholders. It outlines how these rights and obligations are to be shared among the various corporate actors, including the shareholders, board, managers, and others. It outlines the policies and steps for making decisions in corporate affairs. The board of directors (BODs), audit committee, shareholders, top management, and auditors are participants in corporate governance (Adigwe, Nwanna & John 2016). If management acted in the best interests of shareholders and if the board members successfully carried out their fiduciary duties and professional responsibilities, corporate governance would not be required. Corporate governance is necessary to prevent the concentration of power in the hands of management and to establish an effective system of checks and balances to fairly distribute power among shareholders, the board, management, and, to a lesser extent, other stakeholders. In order to serve and safeguard the interests of investors, it is a monitoring

mechanism for evaluating corporate accountability and responsibility through the board, audit committee, management, and auditors (Adigwe, Nwanna & John, 2016).

This study focuses on the board of director dimension of corporate governance in relation to financial performance. According to Shukeri, Shin, and Shaari (2012), as well as Fama and Jensen (1983), the board is the internal corporate governance system that matches shareholders' interests with those of management. Jensen (1993) contends that the board of directors is critical for an effective internal control system and that problems with corporate internal control systems begin with the board of directors. According to Manzaneque Manzaneque, Priego and Merino (2016), poor corporate governance raises the possibility of opportunistic management behavior, which increases the chance of corporate distress. Furthermore, agency theorists believe that weak corporate governance stems from management acting in self-interest at the expense of shareholders, which can lead to a company's financial distress. According to the Organization for Economic Cooperation and Development (OECD), when a corporation is in a financial crisis, it demonstrates a serious lack of corporate governance (Kosmidis & Stavropoulos, 2014).

As a result, Shahwan (2015) observed that the link between board composition (such as board size, board independence, and board diligence) and financial distress is not because financial distress is a discrete event, but rather, to some extent, it is a late stage of a long process of decline and a downward spiral in performance. Early decline in corporate performance, severe strategic moves, and abrupt environmental decline are all significant characteristics of the negative cycle of financial performance. In the light of the foregoing, Hambrick and D'Aveni (1992) proposed that the deterioration of the senior management team is a key component of the downward spiral of significant company failures. As a result, it may be claimed that if the board of directors is effective, the risk of financial distress can be averted. Corporate board governance measures, according to Poletti-Hughes and Ozkan (2014), are vital in both reducing the possibility of financial performance in the first place and preventing firms from going insolvent when they are in difficulties. In a similar vein, Salloum and Azoury (2012) suggested that the most major causes of the financial crisis are agency difficulties produced by weak corporate governance in firms worldwide. As a result, if a firm's corporate board structure is related to its likelihood of financial performance, incorporating corporate board processes into a financial performance prediction model may produce better results.

In terms of the linkage between proxies of board mechanisms, the impact of board size as a corporate control mechanism on firms' financial performance is however not clear, but the strongest arguments indicate that smaller board would result in closer alignment with shareholder interest which would reduce risk taking (Geng, Bose & Chen 2015) and increase firm value. Meanwhile, increased board independence has advantages from both the agency and the resource dependence theories especially for distressed firms. They can challenge the CEO and top management whenever there is a disagreement over the correct direction to take in times of performance (Dowell *et al.* 2011). In addition, independent directors are more likely to have the resources that are urgently needed by firms, such as access to capital (Kumar & Singh 2013). Similarly, the stakeholder theory also presumes that when firms' hold board meetings frequently, they address the interest and concerns of all the stakeholder groups. Finally, gender diversity fosters a firm's competitive advantage by creating a positive reputation for the firm as well as by creating a positive impact on customers (Miller & del Carmen Triana, 2009). Thus on the basis of

this background, this study was undertaken to assess the effect of corporate governance on corporate performance.

1.2 Statement of the problem

The goal of governance mechanisms is to protect shareholders' interests such that having good corporate governance can lead to improved economic development of a country. Nevertheless, with the occurrence of an increasing number of cases of corporate scandals and company failures, there is doubt as to whether the current corporate governance mechanisms have been effective in preventing corporate failures. This situation if left unchecked negatively impacts many stakeholders such as employees, managers, creditors, investors, and the government by eroding their earnings leading to job losses, non-payment of taxes and a reduction on the Gross Domestic Product (GDP) (Altman et al. 2017). The investors and lenders (especially in the consumer goods sector) returns on their investment suffers uncertainty which demoralizes them from investing hence negatively affecting the economy because without investment the GDP suffers stagnation (Bhabra, & Eissa, 2017). The aim of this study was to examine the effect of corporate governance on financial performance of listed non-finance firms in Nigeria. A review of several empirical studies from continents in the world showed different results of the effect of corporate governance on financial performance. Most past studies were done in Asia especially in Pakistan, Indonesia, and India while in Africa the few studies were in Ghana, Kenya, Egypt, and Nigeria but all the studies in Africa and Nigeria in particular ignore the consumer goods firms and focused on other sectors such as the banking sector. The study observed also that most of the studies (Ebun & Emmanuel, 2019; Simoneti & Gregoric, 2014) were done using OLS estimation method which is not capable of capturing heterogeneity effects of the sampled firms.

In addition to the above, it was also found out that none of the studies reviewed used all the variables of corporate governance to ascertain their effect on corporate governance. Worst still most of the studies used a shorter research period (Yameen et al., 2019; Amoateng *et al* 2017; Ebun & Emmanuel, 2019; Simoneti & Gregoric, (2014) and small firm observations. Based on this gap in the literature, this study was undertaken to ascertain the effect of corporate governance attributes on financial performance of non-finance firms in Nigeria using the Z-score approach.

1.3 Objectives of the study

The main objective of this study was to examine the effect of corporate governance on the financial performance of listed non-finance firms in Nigeria. Specifically, the specific objectives of the study were to:

1. examine the effect of board size on the financial performance of non-finance firms in Nigeria.
2. investigate the effect of board independence on the financial performance of non-finance firms in Nigeria.

3. ascertain the effect of board diligence on the financial performance of non-finance firms in Nigeria.

2.0 Review of Related Literature

Corporate governance

Corporate governance corresponds to the mechanisms that ensure that the business finance providers will get a return on their investment (Shleifer & Vishny, 1997). Following an encompassing definition as put forward by OCED (1999), corporate governance "relates to the internal means by which corporations are operated and controlled". The distribution of rights and responsibilities among different stakeholders in the corporation such as: the board, managers, shareholders, customers, employees, among others, is specified by governance structures which also spell out the rules and procedures for making decisions on corporate affairs. However, Ghoniyah and Hartono (2014) noted that the basic principle of good corporate governance as a management tool covers fairness, transparency, accountability and responsibility.

It is worthy to know that corporate governance mechanism is predicted on the agency theory, whose origin, according to Hassan (2011) dates back to 1930s following the exploration of corporate revolution by Berle and Means in 1932. A company's corporate board is the highest executive body of a company saddled with the responsibility of guiding and monitoring business activities as well as the affairs of the corporation on behalf of the shareholders who elected them, and to whom they are accountable. According to the agency theory, shareholders appoint directors to boards to safeguard their interests (Jensen & Meckling, 1976). This is believed to minimize agency problem which arises due to conflict of interests between shareholders and managers. Therefore, the board of directors is expected to put in place governance structures that enhance value and specifically, reduce the probability of financial distress. (Tornyeva & Wereko, 2012).

Board size

Board size is the total number of people chosen by the shareholders of the company through an election to run the company and are bound by certain duties such as the duty to act within the scope of their authority and to exercise due care in the performance of their corporate tasks (Peasnell, Pope & Young 2015). Board Size is total number of internal and external directors on the board of directors, (Doğan & Yildiz 2013). Closely associated to the above definition of board size, Dalton *et al.,* (1998) describes corporate board size as the sum total of directors on the board. Board size of an organization is the number of directors on board of the organisation which includes executive and non-executive directors (Gambo, Bello & Rimamshung 2018).

From the agency problem perspective, large boards are not recommended while small boards are preferred to improve performance (Lipton & Lorsch, 1992) which ultimately reduces the probability of financial distress. Similarly, Parkinson, (2018) argue that small boards are better than large ones as they avoid the free-rider problem that might appear among board members, meaning that each board member may feel inclined to exert more effort than he/she would have otherwise. The contrary view to the agency and resource-based perspective is that larger boards are associated with diversity in skills, business contacts and experience (Haniffa & Haudaib,

2006). Specifically, larger boards secure access to critical resources such as finance and raw materials (Li, Crook, Andreeva & Tang 2020).

2.1.3 Board independence

The concept of board independence is an export of United States corporate governance (Hopt, 2011). The theoretical concept of having outside, disinterested members joining corporate boards is an innovation of 'good governance' in post-war US board practice, which has gradually increased over time (Gordon, 2009). In most Western legal systems, independent or outside directors were seen as an essential corporate governance tool to improve the monitoring role of the board (Armour *et al.,* 2009). Board independence refers to a corporate board that has a majority of outside directors who are not affiliated with the top executives of the firm and have minimal or no business dealings with the company to avoid potential conflicts of interests The term independent directors have been used interchangeably with the term non-executive directors and outside directors.

Independence is a tool for solving a specific problem and represents a procedural instrument to protect weak groups within the company while mitigating agency costs. However, it might be beneficial for shareholders in general (dispersed shareholder environment) or minority shareholders, as opposed to controlling shareholders (concentrated shareholder environment). Traditionally, the principle of director independence has been justified by the proper role of boards: to provide effective and unbiased monitoring. As one of the key roles of the board is to monitor the executive management, this task can be carried out best if those who are the monitors are independent of those who are supervised. Fundamentally, there is a conflict of interest dimension: independence is seen as a primitive precondition for ensuring ex ante that board decisions are not tainted by arbitrary considerations.

2.1.4 Board diligence

Board diligence has been represented as the number of all formal meetings of the board of directors of an organization held usually at definite intervals to consider policy issues and major problems. Presided over by a chairperson (chairman or chairwoman) of the organization or his or her appointee, it must meet the quorum requirements and its deliberations must be recorded in the minutes. Under the doctrine of collective responsibility, all directors (even if absent) are bound by its resolutions. One way to carry out the task is to have meetings. Increased meetings / meetings of the board of directors indicate that oversight of management is high; this is because during such meetings deliberations on company's growth are carried out. Good corporate governance implementation guidelines require the company to provide reports on the number of meetings conducted by the board of directors and the attendance of each member of the board is recorded.

Financial performance

Financial performance is a subjective measure of how well firms can use assets from its primary mode of business and generate revenue. It can be expressed in terms of income generated from its operation, after offsetting expenses to arrive at profit. It is used as a general measure of firms' overall financial health over a given period of time.it can be used to compare similar firms across

the same industry or to compare industry or sectors in aggregation. Company's performance indicators include the financial and non-financial indicators. Financial indicators have been widely adopted because a company's long term goal is almost always purely financial in nature (Acaravci, 2020). Financial performance evaluation indicators directly link up the company's financial study. And the measure of financial performance adopted for this study is profitability measured in terms of return on asset.

Financial distress

Financial distress is a condition in which a company experiences a stage of decline in financial conditions before bankruptcy. Cybinski, (2001) proposed the financial performance continuum theory during which companies experience various stages of distress before failure or a recovery and, thus, should be placed on a success-failure continuum (Sewpersadh, 2017). Financial distress can be temporary, whereby recovery depends on early distress detection and the success of turnaround strategies, the failure of which pushes the company into a severely declined state, in which it becomes insolvent and not viable, leading to a corporate failure (Sewpersadh, 2017). Financial distress represents the decline of a company's earning power, increasing the probability that it may not settle its obligatory payments of interest and debt capital, consequently affecting its credit risk profile (Gordon 1971).

Financial distress continues to gain considerable attention amongst academics, analysts and stakeholders of the firm. In an attempt to explain financial distress, Sewpersadh, 2017) points that financial distress may be associated with declined performance, failure, liquidation, and defaulting. Outecheva, (2007) further adds that deterioration and failure affect level of profitability. While indebtedness and default are rooted in liquidity. Outecheva, (2007) posits that financial distress is characterized by abrupt decline in overall firm performance. Deterioration in firm performance commence with momentous drop in profitability, sales, income, and adverse stock returns, operating losses, dividend reduction, branch closure, increased trend of NPLs, volatility of ROA and ROE. Outecheva, (2007) asserts that the extent of financial distress and its consequence depends on roots of financial distress, gravity of the adverse development, effectiveness of counter actions and complexity of the management response.

Theoretical framework

Agency Theory (Berle and Means, 1932)

The agency theory was first propounded by Berles and Means in 1932 but later advanced by Jensen and Meckling in 1976. According to Eisenhardt (1989), the agency theory refers to the universal agency relationship, in which the principal assigns duty to the agent. Jensen and Meckling (1976), posit that in terms of corporate organizations, agency theory involves a contract under which the shareholders engage the managers to perform some service on their behalf, which includes delegating some decision-making authority to the managers. Agency theory assumes that managers are opportunists who will satisfy self rather than maximize profit on behalf of the shareholders yet their specialized knowledge to generate wealth are highly in demand by shareholders. From the agency theory perspective, managers are responsible for conducting business in the interest of the firm, and that a manager's own self-interests will never align

completely with the interests of the firm. Managers of a firm will sometimes experience conflicts of interest when conducting business on behalf of the firm (Bryant & Davis 2012).

This gives the central argument of agency theory which provides that managers acting as agents are likely to pursue private objectives that deviate and even conflict with the goals of the shareholders if they are not monitored. Hence, due to possible conflicts between the shareholders and management interest, agency theory is deemed to align both interests. (Jensen & Meckling 1976; Fama 1980; Fama & Jensen 1983) Consequently, firms must either increase the incentive structures that align the interests of shareholders and managers (Fama & Jensen 1983) or increase the monitoring, control, and oversight of managers by owner principal delegates such as the board of directors (Bryant & Davis 2012). Increasing the incentive alignment which is regarded as an internal governance mechanism involves financial alignment created with outcome-based contracts, share options, and alignment of preferences and actions, whereby the management's preferences become more aligned with those of the shareholders (Nyberg et al. 2010). Jensen and Meckling (1976) are of the view that when incentives are aligned with the interest of the shareholders, the board of directors becomes more effective monitors of management, which then leads to an improved firm' performance and consequently avoiding financial performance.

In terms of monitoring and control, it is assumed that the board of directors monitor and control the opportunistic behaviours of managers. According to Fama and Jensen (1983), the board of directors are the main control mechanism of the organisation and are authorised for the control of organisational decisions. Thus, shareholders may use a different range of corporate governance mechanisms, including monitoring by boards of directors and mutual monitoring by managers (Fama & Jensen 1983), as well as monitoring by large outside shareholders to control management opportunistic behaviour. The assumption here is that by managing the principal-agency problem between shareholders and managers, firms will operate more efficiently and perform better (Filatotchev 2007) to avoid the likelihood of financial distress. If the firm is to survive and avoid financial distress, the shareholder-management relationship should reflect an efficient form of organisation of information and risk-bearing cost (Jensen & Meckling 1976; Fama, 1980).

This study anchors on this theory because agency theory provides the theoretical foundation of the monitoring function, which refers to the responsibility of directors to monitor management, on shareholders' behalf and ensure that the shareholders do not lose the investment through financial performance and eventual liquidation.

Empirical review

Akpan and Nkanga (2023) examined the effect of corporate governance attributes on segment reporting of listed conglomerates firms in Nigeria. Ex post facto research design was adopted for the study and five listed conglomerate firms were purposively selected. Secondary data were extracted from these companies' annual reports and the Nigeria Exchange Group fact book. The data for the study was analyzed using OLS regression technique and the findings revealed that board size, board diligence and board gender diversity have significant positive effect on segment reporting measured by the number of reportable segments. Thus, it was concluded that corporate governance attributes have a significant effect on segment reporting and performance of the studied firms. Based on the above, it was recommended that the size of the board of directors

should be large and balanced enough to accommodate members with cognate experience, expertise and equity in the representation of female.

Etuk and Akpan (2023) examined the effect of corporate governance mechanism on annual report readability by drawing samples from oil and gas firms that were listed on the floor of the Nigerian Exchange Group (NGX) from 2012-2021. In this study, board size, audit firm type, and ownership structure were the corporate governance mechanism employed. The dependent variable of annual report readability was proxied in terms of annual report page length in line with related extant literature. Specifically, to examine the cause-effect relationships between the dependent variables and independent variables as well as to test the formulated hypotheses, the study used a panel regression analysis. The result showed that board effectiveness has a significant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. However, audit quality had an insignificant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. Furthermore, ownership concentration had an insignificant effect on annual report readability when proxied in terms of annual report page length of listed oil and gas firms in Nigeria. Specifically, it was concluded that a large board size will increase annual report readability of listed oil and gas firms in Nigeria. It was also recommended that the size of the board should be considerably increased in order to increase annual report readability.

Yousa, Jebran, and Wang (2021) explored whether different board diversity attributes (corporate governance aspect) can be used to predict financial performance. This study used Chinese A-listed companies during 2007–2016. Board diversity dimensions of gender, age, education, expertise and independence are categorized into three broad categories; relation-oriented diversity (age and gender), task-oriented diversity (expertise and education) and structural diversity (independence). The data is divided into test and validation sets. Six statistical and machine learning models that included logistic regression, dynamic hazard, K-nearest neighbour, random forest (RF), bagging and boosting were compared on Type I errors, Type II errors, accuracy and area under the curve. The results indicated that board diversity attributes can significantly predict the financial performance of firms. Overall, the machine learning models perform better and the best model in terms of Type I error and accuracy is RF.

Kholisoh and Dwiarti (2020) aimed to identify and explain the influence of the fundamental variables and macroeconomic variables in predicting the probability of financial performance. Based on the eight variables used, current ratio, debt to assets ratio, return on equity and total asset turnover ratio is a fundamental variable. While the sensitivity of inflation, exchange rate sensitivity and interest rate sensitivity included in macroeconomic variables. The population in this study were all property and real estate company listed on the Stock Exchange in 2014-2018. The sample selection using purposive sampling technique, acquired 23 companies in the sample with the five companies in the category of financial distress and 18 companies in the category of non-financial distress. The analytical method used is Logistic regression and sensitivity analysis. The results showed that the variable current ratio, debt to assets ratio, total asset turnover ratio, inflation sensitivity, exchange rate sensitivity and interest rate sensitivity did not significantly affect the probability of financial performance. While return on equity significantly negative influence on the company's financial performance.

Cardoso, Peixoto, and Barboza (2019) studied board structure and financial performance in Brazilian firms. The sample comprises of data set from 2010 to 2016 of the non-financial Brazilian firms listed in the Brazilian Stock Exchange. To measure this relationship, a Conditional Logistic Regression was performed. The explanatory variables used in the study are related to the composition of the board of directors with the managers and shareholders, these included non-CEO duality, independent directors, outside directors and professionals. The dependent variable was a dichotomous variable that measures whether the firms are financially distress or not. Furthermore, the study was controlled by firm size, board size, profitability, financial expenses and retained earnings. The results indicate that the board of directors may be unable to avoid or dismiss the financial performance in the firms when other factors are neglected, or the corporate governance practices are implemented too late when the firm is on the verge of bankruptcy. Furthermore, the significant results are related to the board size and they follow the idea of an optimal size of six members during periods of financial distress. In conclusion, Cardoso, Peixoto, and Barboza (2019) submitted that the results do not reject the null hypothesis of the study, which shed light on the lack of influence of the board of directors in the firm's managerial decisions in environments with highly ownership concentration.

Pernamasari, Purwaningsih, Tanjung and Rahayu, (2019) studied Good Corporate Governance and Prediction of Financial Performance to Stock Prices in Indonesia. The stock price used in this study was the stock price one week after the publication date of the 2013-2017 financial statements. This study uses the Altman Z-Score model as a prediction of financial performance as the dependent variable and Good Corporate Governance reforms that are proxied through the board of commissioners, the number of independent commissioners, the number of business commissioners, and the number of audit accountants. Logistic regression was used to analyze the strength of the relationship. The results of the study indicate that good corporate governance and prediction of financial performance have a significant positive effect on stock prices on agricultural sector companies involved in the Exchange Indonesian effect. The study concluded that the results of the research prove that corporate governance rules consider how to regulate accountability to shareholders who support the stock price, while bankruptcy predictions can provide results for investors in choosing companies that need through stock prices.

Ashraf, Félix, and Serrasqueiro, (2019) aimed to compare the prediction accuracy of traditional performance prediction models for the firms which are at an early and advanced stage of performance in an emerging market, Pakistan, during 2001–2015. The methodology involves constructing model scores for financially performance and stable firms and then comparing the prediction accuracy of the models with the original position. The explanatory variable of the study included profitability measure by sales growth, liquidity ratio, leverage ratio measured by the ratio of total liabilities to total assets. Financial performance was the dependent variable. Similarly, the study was controlled by firm size. The results indicate that the three-variable probit model has the highest overall prediction accuracy for the study sample, while the Z-score model more accurately predicts insolvency for both types of firms, i.e., those that are at an early stage as well as those that are at an advanced stage of financial performance. Furthermore, the study concludes that the predictive ability of all the traditional financial performance prediction models declines during the period of the financial crisis.

Luqman, Hassan, Tabasum, Khakwani and Irshad, (2018) examined the role of voluntary adoption of corporate governance mechanisms in mitigating the financial performance status of firms. Using the sample of 52 firms from non-financial sector listed at Karachi Stock Exchange and selecting time period of 10 years from 2006 to 2015, the study adopted financial performance as the dependent variable is used as both continuous and dichotomous representations, and it is coded as 1 or 0 on the basis of its operating performance. Outside directors, Non-director, CEO-chair duality, and Audit committee were the independent variables. Furthermore, the study was controlled by audit opinion, leverage, size of a firm and management efficiency. To check the relationship between corporate governance practices and probability of financial performance, logistic regression is used. The results of the study show that there is a negative significant relationship of block holder ownership, director ownership and audit committee with the probability to financial performance. The study concluded that voluntary adoption of corporate governance structures leads towards lower level of financial performance.

2.0 Methodology

This study adopted quantitative research design. This design was suitable for this study because it produces objective data that can be clearly communicated through statistics and numbers. The population of the study consisted of all the listed non-finance firms with representation from the following sectors; Agriculture, Consumer goods, industrial goods, oil and gas, healthcare, services, natural resources, technology, and conglomerate. As at 2021, there were 109 non-finance firms listed on the floor of the Nigerian Exchange Group (NGX). The study employed purposive sampling technique to select 76 firms since firms were included in the sample based on certain selection criteria. These criteria were firms must be listed on the Nigerian Exchange Group market for 2012-2021 and there was access to their annual financial reports within the period. Secondary data source was employed to generate data for analysis and these data were obtained from the studied firms annual report and Nigeria Exchange Group Fact book. The data employed in this study were analyzed using panel least square regression analysis. The model for this study is as specified below:

$$\mathbf{FV_{it} = \beta_0 + \beta_1 BODS_{it} + \beta_2 BODI_{it} + \beta_3 BODD_{it} + \beta_4 RETA_{it} + \mu_{it}} \quad \textbf{(i)}$$

Where:

FDIS	=	Financial Distress
BODS	=	Board Size
BODI	=	Board Independence
BODD	=	Board Diligence
RETA	=	Firm Size (Control Variable)
β_0	=	Constant
β_1- β_6	=	Slope Coefficient
μ	=	Stochastic disturbance
i	=	i^{th} firm
t	=	time period

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive statistics analysis

In this section, the study provided some basic information for both the explanatory and dependent variables of interest. Each variable was described based on the mean, standard deviation, maximum and minimum. Table 4.1 displays the descriptive statistics for the study.

Table 4.1: Descriptive statistics of the effect of corporate governance on financial performance

Variable	Obs	Mean	Std.Dev	Min.	Max.
Zsco	700	1.138886	1.398906	-9.6	8.41
Bods	697	8.885222	2.706638	3	19
Bodi	695	69.80812	13.62934	16.67	100
Bodd	688	4.640988	1.257481	1	11
reta	700	1.9005	17.23243	-179.92	176.27

Source: Author's computation (2023)

Table 4.1 shows that the mean of financial distress when measured in terms of Altman Z-score (ZSCO) was 1.14 with a standard deviation of 1.40. The table shows that the minimum value of corporate financial performance was -9.6 and a maximum 8.41. This indicates that on the average, the non-finance firms under study had the likelihood of having financial performance during the period under investigation since the mean value of financial performance is within the performance zone (1.9) as provided by Altman 1965. In the case of the independent variables, the study shows that the mean of board size (BODS) was 9 members with a standard deviation of 3 members. The lowest board of the firms under study was 3 members and a maximum of 19 members. The result shows that on the average, the board of directors of the non-finance firms under study constituted of 9 members. Table 4.1 shows that board independence (BODI) was 69.81 with a standard deviation of 13.63. The result implies that on the average, about 69.81% of the board of directors of the firms under study were independent non-executive directors. In the same vein, board diligence (BODD) had a mean of 5 times with a standard deviation of 1 time. On the minimum, the board of directors of the non-finance firms under study met 1 time and 11 on the maximum during the period under study. The result shows that on the average, the board of directors met at least 5 times a year during the period under study. In the case of the control variable, the study shows that the mean of profitability as measured using return on total assets (RETA) was 1.90 with a standard deviation of 17.23.

Table 4.2 Normality of Residua test

Variable	Obs	W	V	Z	Prob> z
Zsco	700	0.87164	58.535	9.929	0.0000
Bods	697	0.97178	12.819	6.222	0.0000
Bodi	695	0.97644	10.675	5.775	0.0000
Bodd	688	0.94403	25.126	7.859	0.0000

reta	700	0.63802	165.070	12.458	0.0000

Source: Author's computation (2023)

From table 4.2, it was revealed that corporate financial distress when measured using Altman Z-score (prob>z = 0.00000) is not normally distributed since the probability of the z-statistic as reveal by the Shapiro-Wilk test is statistically significant at 1% significant level. The same can be said for the independent variables of board size (prob>z = 0.00000), board independence (prob>z = 0.00000), board diligence (prob>z = 0.00000), as well as the control variable of return on asset (prob>z = 0.00000) who all appear to follow a non-normal distribution since the probabilities of the z-statistics as reveal by the Shapiro-Wilk test are statistically significant at 1% significant level. However, we proceed with the Least square regression analysis but depending on the probability statistics against the t-statistics for interpretation and policy recommendation as suggested by Gujarati (2004) as well as Greene (2009).

Table 4.3: Regression results of the effect of corporate governance on financial performance

	ZSCO Model (Pool OLS)	**ZSCO Model (Fixed Effect)**	**ZSCO Model (Random Effect)**
CONS.	**0.816 {0.001} ****	**0.946 {0.000} *****	**0.908 {0.000} *****
BODS	**-0.015 {0.268}**	**0.022 {0.000} *****	**0.018 {0.245}**
BODI	**0.003 {0.317}**	**-0.000 {0.862}**	**0.000 {0.995}**
BODD	**0.021 {0.492}**	**0.001 {0.000} *****	**0.004 {0.867}**
RETA	**0.061 {0.000} *****	**0.051 {0.000} *****	**0.052 {0.000} *****
F-Stat/W-Stat	**148.11 {0.0000}**	**201.87 (0.0000)**	**1246.53(0.0000)**
R- Squared	**0.5662**	**0.6643**	**0.6638**
VIF Test	**1.07**		
Hettero. Test	**21.50 {0.0000}**		
FE/RE		**YES {16.38 (0.0000)}**	**YES {939.17 (0.0000)}**
Hausman		**939.17 {0.0000}**	

Table 4.3 represents the results obtained from the regression results for this study. The result indicates that the pool OLS regression had an R-squared value of 0.5662. This implies that the independent and control variables of the study could explain about 57% of the systematic changes in the dependent variable of financial performance when proxied using Altman Z-score during the

period under study. However, the unexplained part of financial performance has been captured in the error term. The result of the F-statistics (148.11) of the pool OLS regression model for the sample firms with an associated p-value of 0.0000 indicates that the pool OLS regression model on the overall is statistically fit at 1% level of significance and can be employed for statistical inferences. However, to further validate the estimates of the pool OLS results, this study also tests multicollinearity and heteroscedasticity.

4.2.2.1 Test for multicollinearity

To test the degree of multicollinearity, the study can use a variety of statistical tools. The variance inflation factor (VIF) was employed to investigate this. If the variance inflation result is more than 10, this is cause for alarm. The result from the VIF test shows a mean value of 1.07. Specifically, the result shows that the mean VIF is within the benchmark of 10 which is in line with the position of Gujurati (2004) indicating the absence of multicollinearity and further show that none of the independent variables should be dropped from the models respectively.

4.2.2.2 Test for homoscedasticity

The test of the assumption of homoscedasticity of the pool OLS is conducted using the Breusch Pagan module in Stata 14. The result shows a chi2 value of 21.50 with a p-value of 0.0000. The result shows a significant p-values at 1% level indicating that the assumption of homoscedasticity of the pool OLS regression results have been violated. Hence, the study re- specifies the model to control for this violation by employing the twin panel regression of fixed and random effects as recommended by (Greene, 2003).

4.2.3 Panel fixed and random effect regression

The result from the panel fixed effect as presented in table 4.3 shows an F-statistics value of 201.87 and a probability value of 0.0000 indicating that on the overall the fixed effect regression model is fit for statistical inference. The result also indicates that the fixed effect regression had an R-squared value of 0.6643. This implies that the independent and control variables of the study could explain about 66% of the systematic changes in the dependent variable of financial distress when proxied using Altman Z-score during the period under study. However, the unexplained part of financial distress has been captured in the error term. Similarly, the results from the panel random effect shows a Wald statistics value of 1243.53 with a probability value of 0.0000 indicating that on the overall, the random effect regression model is fit for statistical inference. The result also indicates that the random effect regression had an R-squared value of 0.6638. This implies that the independent and control variables of the study could explain 66% of the systematic changes in the dependent variable of financial performance during the period under study. However, the unexplained part of financial performance has been captured in the error term. However, to decide on which regression technique to rely on for interpretation and policy recommendation between the fixed and the random effect regression, the Hausman Specification test is employed.

4.2.4 Hausman specification test

The Hausman test is based on the null hypothesis that the random effect model is preferred to the fixed effect model. Specifically, a look at the p-value of the Hausman test {939.17 [0.0000]} implies a significance at 1% level of significance. This shows that the study should adopt the fixed effect panel regression results in drawing the conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect.

4.3 Test of hypotheses

In this study, the researchers test the hypotheses using the result of the fixed effect regression in table 4.

Hypothesis 1

H_0: Board size has no significant effect on the financial distress of listed non-finance firms in Nigeria.

The results obtained from the fixed effect regression model in table 4.3 revealed that board size [coef. = 0.022 (0.000)] has a significant positive effect on the financial distress of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the number of directors of the firms under study would significantly increase the Altman Z-score of the firms in the sample. Hence, the null hypotheses that board size has no significant effect on the financial distress of listed non-finance firms in Nigeria is rejected. Therefore, board size significantly decreases the financial distress likelihood of listed non-finance firms during the period under investigation. That is when Altman Z-score increases, financial distress reduces.

Hypothesis 2

H_0: Board independence has no significant effect on the financial performance of listed non-finance firms in Nigeria.

The results obtained from the fixed effect regression model in table 4.3 revealed that board independence [coef. -0.000 (0.862)] has an insignificant negative effect on the financial performance of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the independence of the board through the number of independent directors of the firms under study would insignificantly decrease the Altman Z-score of the firms in the sample. Hence, the null hypotheses that board gender diversity has no significant effect on the financial performance of listed non-finance firms in Nigeria was accepted. Therefore, board independence insignificantly increases the financial performance likelihood of listed non-finance firms during the period under investigation.

Hypothesis 3

H_0: Board diligence has no significant effect on the financial performance of listed non-finance firms in Nigeria.

The results obtained fixed effect regression model in table 4.3 revealed that board diligence [coef. 0.001 (0.000)] has a significant positive effect on the financial performance of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the number of meetings by the directors of the firms under study would significantly increase the Altman Z-score of the firms in the sample. Hence, the null hypotheses that board diligence has no significant effect on the financial performance of listed non-finance firms in Nigeria was rejected. Therefore, board diligence significantly decreases the financial performance likelihood of listed non-finance firms during the period under investigation.

4.4 Discussion of findings

4.4.1 Board size and financial distress

In this study, it was documented that board size has a significant positive effect on the financial distress of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the number of directors of the firms under study would significantly increase the Altman Z-score of the firms in the sample. Therefore, board size significantly decreases the financial distress likelihood of listed non-finance firms during the period under investigation. Specifically, the result shows that the addition of 1 more board member significantly increases the Altman Z-score as a measure of financial performance. An increase in the Z-score implies a decrease in financial distress likelihood since Z-score and financial distress have an inverse relationship. This finding is consistent with the results of Akpan and Nkanga (2023), and Ciampi (2015) who establish that board size to have a direct influence on firms' financial performance.

4.4.2 Board independence and financial distress

The results obtained from the fixed effect regression model revealed that board independence has an insignificant negative effect on the financial distress of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the independence of the board through the number of independent directors of the firms under study would insignificantly decrease the Altman Z-score of the firms in the sample. Therefore, board independence insignificantly increases the financial distress of listed non-finance firms during the period under investigation. However, the findings negate those of Dowell et al. (2011), who noted that independent boards are generally considered advantageous since they are harder for top management to dominate, and they may be more likely to encourage changes even in the face of management reluctance. The study also found a fallout with the views of the agency theory which recommends the independence of the board as a way of ensuring adequate control over the management (Manzaneque et al. 2016). Since independent directors do not have any relationship with the firm other than being part of the board, they are in a better position to monitor and control potential opportunism and avoid selfish behaviours of management to ensure that their decisions are consistent with the interests of the shareholders.

4.4.3 Board diligence and financial distress

Furthermore, the result shows that board diligence has a significant positive effect on the financial distress of listed non-finance firms in Nigeria when measured using the Altman Z-score during the period under study. The result implies that an increase in the number of meetings by the directors

of the firms under study would significantly increase the Altman Z-score of the firms in the sample. Therefore, board diligence significantly reduces the financial distress likelihood of listed non-finance firms during the period under investigation. Specifically, the result shows that an increase in the number of meetings significantly increased the Altman Z-score as a measure of financial distress. An increase in the Z-score implies a decrease in financial distress since Z-score and financial performance have an inverse relationship. The results agree with the position of Ahraf *et al.,* (2019) who admitted that frequent meeting of the board of directors is the right avenue for issues bothering on the going concern of the entities to be resolved. However, the study negates the empirical findings of

Pernamasari *et al.,* (2019) who documented an inverse relationship between board meeting and prior performance.

Conclusion and recommendations

Corporate organizations are intermittently faced with governance quality which is being tackled daily in order to ascertain the organizations wellbeing. Owing to corporate governance crisis rocking the corporate world which often metamorphose into financial crisis and if not carefully handled creates room for financial distress, the need to undertake this study became very pertinent. Particularly, the study concluded that the findings offered from this study using the Nigerian environment depicts mixed and salient situations where governance mechanism strives. The study strongly perceives that the outcome from this study would help all stakeholders keep track of firm business activities, minimize the risk of failure, and make effective decision. Hence in line with the significant outcomes which were obtained from the empiriacl analysis, the study recommended that the board size of non-finance firms should not be less than ten (10) members as an enlarged board comes with diversification of experience, knowledge and international affiliations. Also, the board of directors should be majorly outside directors who are not affiliated with the top executives of the firm and have minimal or no business dealings with the company. Even though this seemed to be insignificant in this study, but in a long run can mitigate financial distress. Directors of the companies sould meet as at least once in every two months so that signals of financial performance could be detected early and resolved to avoid total collapse of the entity.

References

Akpan, D. C., & Nkanga, E. N. (2023). Corporate governance attributes and segment reporting of selected conglomerates in Nigeria. *Journal of Accounting and Financial Management, 9(5),* 46-64

Acaravci, S. K. (2020). The determinants of capital structure: Evidence from the Turkish manufacturing sector. *International Journal of Economics and Financial Issues*, 5(1), 158.

Altman, EI, and E. Hotchkiss. 2010. *Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt*. 3rd ed. Hoboken, NJ: Wiley Finance.

Amoateng, A. K., Osei, K. T., Ofori, A., & Gyabaa, E. N. (2017). Empirical study on the impact of corporate governance practices on performance: Evidence from SMEs in an emerging economy. *European Journal of Accounting Auditing and Finance Research*, *5*(8), 50-61.

Ashraf, S., GS Félix, E., & Serrasqueiro, Z. (2019). Do traditional financial distress prediction models predict the early warning signs of financial distress?. *Journal of Risk and Financial Management*, *12*(2), 55.

Armour, J., Deakin, S., Sarkar, P., Siems, M., & Singh, A. (2009). Shareholder protection and stock market development: an empirical test of the legal origins hypothesis. *Journal of Empirical Legal Studies*, *6*(2), 343-380.

Bhabra, H. S., & Eissa, A. H. (2017). Corporate financial distress and CEO networks. *Montreal: Concordia University*.

Bryant, P., & Davis, C. (2012). Regulated change effects on boards of directors: A look at agency theory and resource dependency theory. *Academy of Strategic Management Journal*, *11*(2), 1.

Cardoso, G. F., Peixoto, F. M., & Barboza, F. (2019). Board structure and financial distress in Brazilian firms. *International Journal of Managerial Finance*. *7*(9), 1-16

Ciampi, F. (2015). Corporate governance characteristics and default prediction modeling for small enterprises. An empirical analysis of Italian firms. *Journal of Business Research*, *68*(5), 1012-1025.

Cybinski, Patti. (2001). Description, Explanation, Prediction - the Evolution of Bankruptcy Studies?" *Managerial Finance* 27(4):29–44. doi: 10.1108/03074350110767123/FULL/HTML.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, *19*(3), 269-290.

Dogan, M., & Yildiz, F. (2013). The impact of the board of directors' size on the bank's performance: Evidence from Turkey. *European Journal of Business and Management*,*5*(6), 130-140.

Dowell, G. W., Shackell, M. B., & Stuart, N. V. (2011). Boards, CEOs, and surviving a financial crisis: Evidence from the internet shakeout. *Strategic Management Journal*, *32*(10), 1025-1045.

Ebun, A. F., & Emmanuel, O. T. (2019). Meeting of board and financial performance of insurance companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, *7*(9), 1-16.

Etuk, M. U., & Akpan, D. C. (2023). Corporate governance mechanisms and annual report readability of listed oil and gas firms in Nigeria**.** *Research Journal of Management Practice, 3(1),* 91-106

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of political economy*, *88*(2), 288-307.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, *26*(2), 301-325.

Gambo, E. M. J., Bello, B. A., & Rimamshung, S. A. (2018). Effect of board size, board composition and board meetings on financial performance of listed consumer goods in Nigeria. *International Business Research*, *11*(6), 1-10.

Geng, R., Bose, I., & Chen, X. (2015). Prediction of financial distress: An empirical study of listed Chinese companies using data mining. *European Journal of Operational Research*, *241*(1), 236-247.

Ghoniyah, N., & Hartono, S. (2014). The Role of Islamic Corporate Governance in SMEs to Improve the Welfare of Society. *International Journal of Economic Research*, *11*(3).

Gordon, L. A.(2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of accounting and public policy*, *28*(4), 301-327.

Gordon, M. J. (1971). Towards a Theory of Financial Distress. *The Journal of Finance* 26(2):347. doi: 10.2307/2326050.

Hambrick, D. C., & D'Aveni, R. A. (1992). Top Team Deterioration as Part of the Downward Spiral of Large Corporate Bankruptcies. *Management Science*, 38(10), 1445–1466

Haniffa, R., & Hudaib, M. (2016). Corporate governance structure and performance of Malaysian listed companies. *Journal of business finance & accounting*, *33*(7-8), 1034-1062.

Hassan, M. K. (2011). Financial development and economic growth: New evidence from panel data. *The Quarterly Review of economics and finance*, *51*(1), 88-104.

Hopt, K. J. (2011). Comparative corporate governance: The state of the art and international regulation. *The American Journal of Comparative Law*, *59*(1), 1-73.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *the Journal of Finance*, *48*(3), 831-880.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate Governance* (pp. 77-132). Gower.

Kholisoh, S. N., & Dwiarti, R. (2020). The analysis of fundamental variables and macro economic variables in predicting financial distress. *Management Analysis Journal*, *9*(1), 81-90.

Kosmidis, K., & Stavropoulos, A. (2014). Corporate failure diagnosis in SMEs: A longitudinal analysis based on alternative prediction models. *International Journal of Accounting and Information Management*. *22*(1), 49-67

Li, Z., Crook, J., Andreeva, G., & Tang, Y. (2021). Predicting the risk of financial distress using corporate governance measures. *Pacific-Basin Finance Journal*, *68*, 101334.

Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance. *The business lawyer*, 59-77.

Luqman, R., Ul Hassan, M., Tabasum, S., Khakwani, M. S., & Irshad, S. (2018). Probability of financial distress and proposed adoption of corporate governance structures: Evidence from Pakistan. *Cogent Business & Management*, *5*(1), 1492869.

Manzaneque, M., Priego, A. M., & Merino, E. (2016). Corporate governance effect on financial distress likelihood: Evidence from Spain. *Revista de Contabilidad*, *19*(1), 111-121.

Miller, T., & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship. *Journal of Management studies*, *46*(5), 755-786.

OECD (1999). Principle of Corporate Government. Meeting of the OECD Council at the Ministerial Level.

Outecheva, N. (2007). Corporate Financial Distress: An Empirical Analysis of Distress Risk.

Parkinson, M. M. (2018). *Corporate Governance in Transition: Dealing with Financial Distress and Insolvency in UK Companies*. Springer.

Peasnell, K. V., Pope, P. F., & Young, S. (2005). Detecting earnings management using cross-sectional abnormal accruals models. *Accounting and Business research*, *30*(4), 313-326.

Pernamasari, R., Purwaningsih, S., Tanjung, J., & Rahayu, D. P. (2019). Good corporate governance and prediction of financial distress to stock prices: Atman Z score approach. *International Journal of Economics and Management Studies*, *6*(11), 56-62.

Poletti-Hughes, J., & Ozkan, A. (2014). Ultimate controllers, ownership and the probability of insolvency in financially distressed firms. *Managerial and Decision Economics*, *35*(1), 36-50.

Salloum, C., & Azoury, N. (2012). Corporate governance and firms in financial distress: evidence from a Middle Eastern country. *International Journal of Business Governance and Ethics*, *7*(1), 1-17.

Sewpersadh, N. S. 2017. “K-Score Categorisation of JSE Listed Sectors under the Financial Distress Continuum Theory: A Quantitative Approach.” *Cogent Economics & Finance* 8(1):1748969. doi: 10.1080/23322039.2020.1748969.

Shahwan, T. M., & Habib, A. M. (2020). Does the efficiency of corporate governance and intellectual capital affect a firm's financial distress? Evidence from Egypt. *Journal of Intellectual Capital*

Shleifer, A., & Vishny, R. W. (1997). A survey of Corporate Governance. *The Journal of Finance*, 52(2), 737–783

Shukeri, S. N., Shin, O. W., & Shaari, M. S. (2012). Does board of director's characteristics affect firm performance? Evidence from Malaysian public listed companies. *International Business Research*, *5*(9), 120.

Simoneti, M., Damijan, J. P., & Gregoric, A. (2001). Does ownership pay? The efficiency of managerial ownership in Slovenian post-privatization period. *Economics Letters*, *165*, 44-47

Tornyeva, K., & Wereko, T. (2012). Corporate governance and firm performance: Evidence from the insurance sector of Ghana. *European Journal of Business and Management*, *95*-109

Yameen, M., Farhan, N. H., & Tabash, M. I. (2019). The impact of corporate governance practices on firm's performance: An empirical evidence from Indian tourism sector. *Journal of International Studies*, *12*(1).

Yousaf, U. B., Jebran, K., & Wang, M. (2021). Can board diversity predict the risk of financial distress?. *Corporate Governance: The International Journal of Business in Society*.