



## CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED INSURANCE FIRMS IN NIGERIA: MODERATING ROLE OF SUSTAINABILITY REPORTING

By

UMAR BULAMA DANJUMA<sup>1</sup>, DR. ISUWA DAUDA<sup>2</sup><sup>1,2</sup> *Kaduna State University, Kaduna, Kaduna State, Nigeria,**Corresponding authors' email and mobile: [umarbulama@gmail.com](mailto:umarbulama@gmail.com)/08036001030<sup>1</sup>,**[isuwa.dauda@kasu.edu.ng](mailto:isuwa.dauda@kasu.edu.ng)/08034500729<sup>2</sup>*

### Abstract

This study examined the impact of capital structure on financial performance of listed insurance firms in Nigeria with the moderating role of sustainability reporting and audit quality services as a control variable from 2012 to 2021. The population of this study consist of twenty-one (21) listed insurance firms listed in the Nigeria Exchange Group as at December, 2021. The sample size of the study consists of 20 listed insurance firms within the period of study. The study employed the panel corrected standard errors (PCSE) regression model to analyse the data sourced secondarily. The findings of this study revealed that equity financing is significantly positive relationship with financial performance while debt financing is insignificantly positive on financial performance of listed insurance firms in Nigeria under the direct model. However, the moderated model revealed an insignificant positive correlation between equity financing, debt financing, and financial performance of listed insurance firms in Nigeria. Therefore, the study recommended that insurance firms in Nigeria Insurance firms in Nigeria should increase their level of debt in funding as their operations as well as increase their equity funding in order to increase return on assets.

**Keywords:** audit quality, capital structure, financial performance, insurance firms, sustainability reporting

### 1. Introduction

Financial performance is a concern of every investor, stakeholders as well as the economy at large because of the expected returns to be received from entities. The survival of every firm can be traced to financial performance. Therefore, financial managers employ the necessary policies that will enable the firm attend an optimum capital structure and enhance their performance. Firms' financial performance has become an issue of interest to shareholders because it shows how well the financial resources are harnessed in order to create wealth for investors and generates income from investments (Baker et al., 2011). Shareholders invest their resources in firms in order to make profit and not influence their investment decisions (Kadivar, 2016). Financial performance serves as a means through which the managers' performance and their self-serving interest can be judged (Hillman et al. 2011).

Firms with a well-structured ownership spread plays an important role in improving financial performance of firms (Dandago et al., 2015). Abeyrathna and Ishari (2016) in their study, argued that the continuous existence of firms depends on their financial performance. According to Andow and David (2016), one of the reasons for poor financial performance of a company is as a result of poor management. Alhaji and Sani (2018) pointed out that firms need to make good returns in order to continue to exist and attract investors and other stakeholders. This is because no rational investors would like to invest funds in any business that has no impressive track record of financial performance. Abdullah et al. (2019) have maintained that financial performance is fundamental to the perpetual



existence of a firm. Therefore, a firm needs to adequately utilise available capital resources in order to sustain a positive financial performance.

Capital structure refers to a combination of debt and equity to finance its operations and acquire assets (Brigham, & Ehrhardt, 2013). Firms often encounter decision dilemma on the proportion of debt and equity to adopt in financing their operations. According to Macan et al. (2011), small firms prefer equity funding to debt because of the associated risks. However, the inadequacy of equity funds to finance business expansion by firms may necessitate them to source for debt funding. Therefore, the firm is faced with the decision to determine the optimal capital structure that will maximize its value (Abor & Biekpe, 2009).

Debt financing entails borrowing funds from potential investors in order to finance the operations of a firm. Debt financing could be obtained in different forms which include bonds, debentures, commercial papers, loans, and treasury bills. The use of debt by firms to finance operations is significant to the survival of the firm. The acquisition of debts by firms are driven by the inadequacy of equity to finance their operations at a particular capacity and these debts are associated with paying of interest to the debt holder and ensuring that the debt value is obliged as and when due. Equity capital relates to the resources contributed by the owner(s) and /or invested in a company without a definite repayment date where the provider of the capital is considered to be investing in the business (Abdulsaleh & Worthington, 2013). Equity capital is measured by the ratio of total equity (owners' funds) to total assets, and shows the proportion of the assets financed by the resources of the owners of the business organization (Muhammad et al. 2014).

Insurance firms are financial intermediaries that offer direct insurance or re-insurance services to the policy holder or insured over possible losses that may arise from specific circumstances while the insured pays a regular amount as premium to the insurance firm. According to Fodio et al. (2013), insurance firms have experienced liquidity shortfall and thereby making it difficult for these firms to underwrite a large percentage of their risks. One notable challenge among insurance firms in Nigeria was the delay in payment of claims to their insured and consequently, the sector has experienced decline in the purchase of insurance policies and financial performance (Usman, 2019). The challenges faced by Insurance firms in Nigeria have necessitated the National Insurance Commission (NAICOM) to review the capital base in 2019 from N2 billion to N8 billion and N3 billion to N10 billion for life insurance and general insurance firms respectively. The composite insurers had their capital base increased from N5 billion to N18 billion (Olalekan, 2019).

Various studies have been conducted to examine the correlation between capital structure and financial performance in the operations of businesses ; . These studies provided mixed results and this has necessitated the conduct of this research to provide a result that may or not align with existing outcomes. Nevertheless, this study introduced a moderating variable of sustainability reporting in order to ascertain if it will strengthen or weaken the relationship between capital structure and financial performance (Baron & Kenny, 1986).

The objective of the study examined the relationship between capital structure and financial performance of insurance firms while moderating for sustainability reporting and controlling for audit service quality. In as much as this study aims to provide answers to the basic question of the effect of



equity financing and debt financing on the financial performance of insurance firms in Nigeria while moderating for sustainability reporting and controlling for audit service quality, the following hypotheses were formulated as follows:

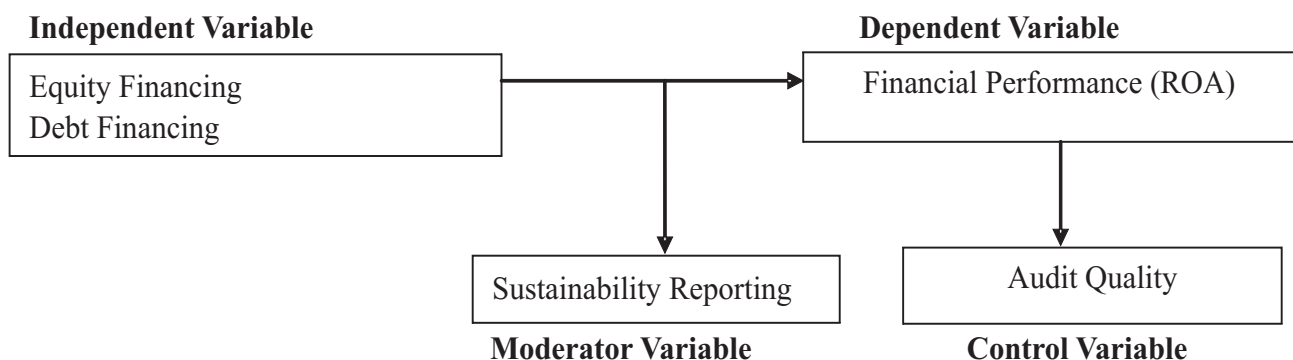
- H<sub>1</sub>: Equity financing have no significant impact on financial performance of listed insurance firms in Nigeria.
- H<sub>2</sub>: **Debt financing** has no significant influence on financial performance of listed insurance firms in Nigeria.
- H<sub>3</sub>: **Sustainability reporting** has no significant influence on financial performance of listed insurance firms in Nigeria.
- H<sub>4</sub>: **Sustainability Reporting** has no significant influence on the nexus between equity financing and financial performance of listed insurance firms in Nigeria.
- H<sub>5</sub>: **Sustainability Reporting** has no significant influence on the nexus between debt financing and financial performance of listed insurance firms in Nigeria.

This study covered a period of 10 years (2012-2021). The main reason for selecting this time frame is as a result of the number of financial irregularities and illiquidity challenges encountered and which consequently led NAICOM to review the capital base of insurance firms in Nigeria. Therefore, the essence of carrying out this study would assist managers of insurance firms to effectively plan and make some informed decision. Nevertheless, this study will boost the confidence of stakeholders towards their investment and ensure that regulators formulate the right policy that will improve the financial performance of insurance firms. This study will also add to the existing knowledge on capital structure and financial performance to the academia.

## 2. Literature Review

### Conceptual Framework

The conceptual framework highlighted the independent variables, dependent variable, moderating variable, and control variable that characterized the study. Figure 1 below represents the conceptual framework of the study.



**Source:** Generated by the Researcher, 2023.

Figure 1. Conceptual Framework.



## **Conceptualisation**

### **Financial Performance**

Financial performance entails the mechanism put in place by a firm to ascertain the extent to which assets have been effectively utilised in order to generate returns. Baker and Powell (2001) defined firm performance as how better a firm makes the best use of its investor's wealth and generating earnings from the investment. Financial performance refers to the measurement of total financial health of business. Alkurdi et al. (2021) have defined financial performance as an available instrument used to maximize organizational profits. Financial performance has been a significant metric to determining the solvency of a firm. A growth in financial performance ensures the going concern of the firm. Studies have measured financial performance with parameters such as return on assets, return on equity, return on capital employed (Matsoso & Benedict, 2016). All these parameters compare the returns or earnings of the firm with the capital employed or the sources of finance. The use of return on assets (ROA) captured the entire assets employed by the firm in generating the return. The return on assets is measured as profit before interest and tax to total assets.

### **Capital Structure**

Firms use different financing patterns to meet their financial needs (Badar & Saeed, 2013). As Barbosa and Lourie, (2005) observed, this involves equity and debts. Van Horne (2006) see capital structure as the mix of a firm's permanent long-term financing represented by debt, preferred stock and common stock equity. Firms use different financing mix such as shares, reserves, retained earnings, preferred stocks and debts to ensure that their daily operations are well funded to meet the firms financing and investment decisions.

Equity financing is the raising of capital from external sources through sale of shares of the company by a way of income retention. Thus, equity holders are the real owners of a firm, bearing most of the risk and having greater control over decisions (Aliu, 2010). According to Abraham and Harrington (2011), equity financing are means of raising capitals via sales of stock other than debt issuance by a firm. The sales of shares can be done through initial public offer (IPO) and seasoned equity offer (SEO). Erasmus (2018) see equity as investment of owners of an enterprise which represents the capital of the business. Studies have measured equity financing by comparing the value of equity to debt, total assets, total capital. However, this study measured equity in relation to total assets. That is, total equity to total assets (Eriki & Osagie, 2017).

According to Eriki and Osagie (2017), debt financing arises when an organization raises money for working capital or capital disbursements by selling corporate bonds, trade bills or notes to individuals and/or institutional investors. Debt financing entails the raising of funds through the sale of debt instruments such as corporate bonds, debentures, commercial paper for funding revenue and capital expenditure of a firm. Debt holders are rewarded with interest as a return for their funds invested in corporate firms as debt. The operationality of debt financing requires the borrowing firm to meet debt obligations for a specified and agreed period while the interest portion is paid periodically to the debt holder. Debt holders exert lower control in a firm, since, they earn a fixed rate of return from the profit generated in the organization. Studies have measured debt by comparing it with others sources of funding available to the firm. Others have compared debt to the total assets of the firm as well as the total capital of the firm. However, this study measured debt financing in relation to equity funding. That is, debt to equity. This measure is suitable because debt and equity constitute the components of a firm's capital structure.



## **Sustainability Reporting**

The concept of sustainability consists of three aspects which include economic, environmental and social. The sustainability approach requires including these three aspects in business strategies and reporting the performance about these three aspects. Sustainability is essentially comprehended as the ability to maintain the functions, processes and productivity of ecology and ecological systems also in the future. The study of Abdulwahab et al. (2023) opined that the resources of the world progressed to depletion limit as a result of the actions of environment and human.

## **Empirical Review**

### **Equity Financing and Financial Performance**

Abdulwahab et al. (2023) investigated the effect of capital structure and firm financial performance of listed deposit money banks in Nigeria with the moderating role of board financial literacy. Their study documented a negative and insignificant association between equity and financial performance for the period of 2012 to 2021. However, the study of Mohammed et al. (2022) provided a contrary finding. The study examined the impact of capital structure and firm financial performance of listed deposit money banks in Nigeria with the moderating role of board size. Their study documented a positive and significant association between equity and financial performance.

Basit and Irwan (2017) in their study revealed that equity ratio has an insignificant correlation with the firms' financial performance. Conversely, Chechet and Olayiwola (2014) establish that equity financing is positively related to financial performance after sourcing data from the annual reports of the listed companies in the Nigerian exchange limited and employing a regression model. Also, the study of Awunyo-Vitor and Badu (2012) documented a significant positive correlation between equity financing and financial performance of listed Ghanaian banks for a period of 11 years. However, the result is different on a study carried out by Velnampy and Nireesh (2012) on listed banks in Sri Lanka stock exchange for an 8-year period. The result revealed a negative correlation between equity financing and financial performance.

Ibrahim (2009) and Umar et al. (2012) examined the impact of financial structure choice on firm performance in Egypt and Pakistan using a multiple regression analysis in estimating the relationship between leverage level and firm's performance. The study covered the period of 1997 to 2005. Using three accounting-based measures of financial performance (return on equity, return on asset and gross profit margin), the result concluded that financial structure choice decision in general, has a weak-to-no impact on firms' performance. A similar study by Aborode (2005) reviewed the impact of financial structure on profitability of twenty-two (22) companies listed in Ghana Stock Exchange during 1998 to 2002. Though, the period and country domain differ. However, the results showed that there is a significant positive relationship between capital structure (total debt to total asset ratio) and return on equity (ROE). The study concluded that profitable companies have more dependence on financing through liability and about 85% of the firms' liabilities are short-term in nature.

### **Debt to Equity Financing and Financial Performance**

Eriki and Osagie (2017) examined the effect of debt-equity mix on financial performance of twelve (12) listed downstream oil and gas firms in Nigeria Exchange Limited for a period of five (5) years from 2011 to 2015. A panel regression analysis technique was applied on financial performance indicators. The results revealed that there is negative and insignificant effect between debt to common equity on firm performance. Uremadu and Onyekachi (2018) studied the impact of capital structure on financial



performance of listed manufacturing firms in Nigeria for a time frame of 10 years. Capital structure was measured by owners' funds and borrowed funds while, financial performance was proxied by ROA. The result of the study documented that total debt to equity ratio has a negative and insignificant effect on ROA. The result from the study of Basit and Irwan (2017) who examined the effect of capital structure on firms' performance on Malaysian industrial sector revealed a negative effect between debt-to-equity ratio on ROA.

Magoro and Abeywardhana (2017) studied the link between debt-to-equity finance and financial performance. The study aimed at to establishing how short-term and long-term debt of wholesale and retail firms affects their financial performance. Panel data was obtained from 25 wholesale and retail South African firms. The fixed effects regression model results indicated that short-term debt has a negative effect on firm profitability. However, the study was specific on public companies.

Shaba and Yaaba (2016) studied the effect of capital structure on bank profitability of deposit money banks for the period of 10 years in Nigeria. Capital Structure was measured by owners' funds and borrowed funds while, profitability was proxied by gross earnings. Multiple linear regression was used and the result revealed a positive significant association between debt-to-equity financing and profitability.

Oladeji et al. (2015) revealed a negative effect between leverage which is represented by debt to equity and firm performance. Though, the study of Amos and Francis (2014) revealed that debt to total equity is positive and significantly associated with financial performance of listed non-financial companies in Nigeria. The result of the aforementioned study is similar to the result of a study carried out in Nairobi, Kenya. The study of Maina and Ishmail (2014), who examined the effect of debt-equity ratio on performance for a period 10 years on listed firms in Nairobi stock exchange revealed that short term debt to total assets has a positive significant association with financial performance.

Yazdanfar and Ohman (2015) studied debt finance and business performance in Sweden. The study sought to assess the linkage between debt and the performance of small businesses. Using the three-Stage Least Squares and fixed effects models, the authors analyzed data from 15,896 SMEs operating in five industry sectors in Sweden and found that short-term debt negatively affected firm performance in terms of profitability. Contextually, the study was conducted from a developed economy perspective where small and medium scale firms maintain financial records accessible in the official databases.

### **Theoretical Review**

This study considered pecking order theory, market timing theory and trade-off theory were as theories that explain capital structure. These theories are significant because they demonstrated the foundational essence of capital funds available to a firm and the inter-relationship between the two components of a firm's capital. All theories significantly underpinned the study.

The pecking order theory of Myers and Majuf (1984) states that firm has order of preference for capital structure and for the purpose of avoiding information asymmetry between managers of the firm and potentials investors and other stakeholders. The theory assert that companies prefer internal financing such as retained earnings to short term debt, long term debt, equity among other source of external source of finance.



Baker and Wurgler (2002) commented on the market timing theory. They stated companies time their equity issues in a way that they issue the new stock when the stock prices are overvalued and buy-back shares when they are undervalued. As a result, variations in stock prices influence firm's capital structures. Therefore, the theory influences how firms decide on whether to finance their investment with debt or equity.

Trade-off theory mainly refers the concepts of cost of financial distress and agency costs. Kraus and Litzenberger (1973) provided a classical statement of the trade-off theory. They suggested that optimal leverage provides a trade-off between the tax benefits of debt and the deadweight costs of bankruptcy. This theory assumes that one can get benefits to leverage within a capital structure until the optimum capital structure is achieved. The theory acknowledges the tax advantage from interest payments. Therefore, the theory explain that businesses are generally funded partially with debt and equity.

### 3. Methodology

The correlational research design was employed because it describe the statistical relationship between two or more variables (Olowokure et al., 2016). The population of this study consists of 21 listed insurance firms in Nigeria Exchange Group Plc as at December 2021. The sample size of the study was 20 listed insurance firms in Nigeria. A filtering-criteria was employed in order to ensure firms that have been operational since the beginning of 2012. The study covered a period of 10 years from 2012 to 2021. The study employed multiple regression model in analysing the data sourced.

**Table 1**

*Population and Sample Size of the Study*

| S/N | Company Name                 | Listing Date |
|-----|------------------------------|--------------|
| 1   | BUA FOODS PLC                | 2022         |
| 2   | *CADBURY NIGERIA PLC         | 1976         |
| 3   | *CHAMPION BREWERIES PLC      | 1983         |
| 4   | *DANGOTE SUGAR REFINERY PLC  | 2007         |
| 5   | *DN TYRE & RUBBER PLC        | 1961         |
| 6   | *FLOUR MILL NIGERIA PLC      | 1978         |
| 7   | *GOLDEN GUINEA BREWERIES PLC | 1962         |
| 8   | *GUINNESS NIGERIA PLC        | 1965         |
| 9   | *HONEYWELL FLOUR MILL PLC    | 2009         |
| 10  | *INTERNATIONAL BREWERIES PLC | 1995         |
| 11  | *MCNICHOLS PLC               | 2009         |



|    |                                  |      |
|----|----------------------------------|------|
| 12 | *MULTI-TREX INTEGRATED FOODS PLC | 2010 |
| 13 | *N. NIGERIA FLOUR MILLS PLC      | 1978 |
| 14 | *NASCON ALLIED INDUSTRIES PLC    | 1992 |
| 15 | *NESTLE NIGERIA PLC              | 1979 |
| 16 | *NIGERIAN BREWERIES PLC          | 1973 |
| 17 | *NIGERIAN ENAMELWARE PLC         | 1979 |
| 18 | *PZ CUSSONS NIGERIA PLC          | 1972 |
| 19 | *UNILEVER NIGERIA PLC            | 1973 |
| 20 | *UNION DICON SALT PLC            | 1993 |
| 21 | *VITAFOAM NIGERIA PLC            | 1978 |

**Source:** Generated by the Researcher, 2023

\*: Indicates the sample size

**Table 2**

*Variables, Measurements, and Sources*

| <b>Variables</b>                                  | <b>Measurements</b>                                                                                                                                                                                       | <b>Sources</b>            |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Dependent Variable<br>(Return on Assets)          | Profit before Interest and Tax/TotalAssets                                                                                                                                                                | Yahaya et al. (2015).     |
| Independent Variable<br>(Equity Financing)        | Total Equity / Total Assets.                                                                                                                                                                              | Mohammed et al. (2022).   |
| (Debt Financing)                                  | Proportion of debts to equity.                                                                                                                                                                            | Abdulwahab et al. (2023). |
| Moderating Variable<br>(Sustainability Reporting) | 1 is tagged to firm that disclosed sustainability impact information in financial statement, otherwise 0.                                                                                                 | Adamu & Tyasari (2022).   |
| Control Variable<br>(Audit Quality)               | 1 is assigned to firms that have one of the BigFour as external auditors [PricewaterhouseCoopers (PWC),Deloitte,Ernst &Young Global Limited, and Klynveld Peat Marwick Goerdeler (KPMG)] and 0 otherwise. | Abdulwahab et al. (2023). |

**Source:** Generated by the Researcher, 2023.

### **Variables, Measurements, and Sources**

The study considered the independent variables as equity financing and debt financing which are measured by total equity to total assets and debt-to-equity ratio respectively. Whereas, the dependent variable is financial performance which is represented by return on assets. Table 2 showed the variables, measurements, and sources.



#### 4.0 Result and Discussion

**Table 3**

*Descriptive Statistics*

| Variables | Obs. | Min     | Max.  | Mean   | Std. Dev. |
|-----------|------|---------|-------|--------|-----------|
| ROA       | 200  | -15.324 | 0.898 | 0.8135 | 1.1468    |
| EFR       | 200  | 0.027   | 0.253 | 0.2468 | 0.0296    |
| DFR       | 200  | 0.051   | 3.256 | 2.7046 | 0.9482    |
| STR       | 200  | 0.000   | 1.000 | 0.8550 | 0.3530    |
| AUQ       | 200  | 0.000   | 1.000 | 0.6850 | 0.4657    |

**Source:** Extracted from STATA 17 Output t, 2023.

#### Model Specification

To estimate the results of this study, a multiple regression was used in order to determine the relationship between the variables of capital structure and firm performance while moderating for sustainability reporting and controlling for audit quality. The models expressed were:

##### Direct Model

$$ROA_{it} = \beta_0 + \beta_1 EFR_{it} + \beta_2 DFR_{it} + \beta_3 STR_{it} + \beta_4 AUQ_{it} + \varepsilon_{it} \dots \dots \dots \text{Equation 1}$$

##### Moderated Model

$$ROA_{it} = \beta_0 + \beta_1 EFR_{it} + \beta_2 DFR_{it} + \beta_3 STR * EFR_{it} + \beta_4 STR * DFR_{it} + \varepsilon_{it} \dots \dots \dots \text{Equation 2}$$

Where: ROA is Return on Assets; EFR is Equity Financing Ratio; DFR is Debt Financing Ratio; STR is Sustainability Reporting; AUQ is Audit Quality;  $\beta_0$  is Constant;  $\beta_1 - \beta_4$  are Co-efficient of EFR, DFR, STR and AUQ respectively;  $\varepsilon$  is error terms;  $i$  is sampled firms; and  $t$  is time variable.

#### Sources and Methods of Data Collection

Data were sourced secondarily from the annual report of sample firms and the Nigerian Exchange Group Plc fact book to ensure that the data for proxies of the dependent and independent variables are correctly captured and the listed firms are identified respectively.

#### Diagnostic and Post Estimation Test

The test for normality of residuals, heteroskedasticity, and multicollinearity were carried out to ensure that data were adequately diagnosed to best-fit the model.

**Table 4**

*Correlation Matrix*

| Variables | ROA     | EFR    | DEFR    | SR     | AQ     |
|-----------|---------|--------|---------|--------|--------|
| ROA       | 1.0000  |        |         |        |        |
| EFR       | 0.5284  | 1.0000 |         |        |        |
| DFR       | 0.1987  | 0.0063 | 1.0000  |        |        |
| STR       | -0.0293 | 0.0360 | -0.1920 | 1.0000 |        |
| AUQ       | 0.1047  | 0.3122 | 0.0023  | 0.0264 | 1.0000 |

**Source:** Extracted from STATA 17 Output by the Researcher, 2023.



Table 3 revealed a negative average ROA of 81.35% within the period of study. This revealed that the firms recorded a high return on assets from 2012 to 2021. The minimum and maximum values of -15.324 and 0.898 respectively revealed that some firms performed satisfactorily while some recorded a dismal performance. This can also be evidence from the wide margin of standard deviation of 114.68% among the returns of the firms. The EFR revealed an average proportion of 24.68% to the entire funding of the total assets of the firms. While some firms recorded 25.3% equity funding to total assets, some recorded as low as 2.7% equity funding to total assets as evidenced by the maximum and minimum values respectively. Invariably, the firms majorly depend on debt financing as evidence by a mean ratio of 270.46. The sustainability reporting ratio shows an average of 0.855 which revealed a high level of compliance by the firms. The audit quality revealed that most of the firms use at least one of the specified audit firms in the study or their direct associates as shown by a mean value of 0.6850.

**Table 5**  
*Diagnostic Test*

| Variables                | VIF    | Tolerance Value |
|--------------------------|--------|-----------------|
| EFR                      | 1.11   | 0.9017          |
| DFR                      | 1.04   | 0.9630          |
| STR                      | 1.04   | 0.9615          |
| AUQ                      | 1.04   | 0.9630          |
| Mean VIF                 | 1.07   |                 |
| Hettest Chi <sup>2</sup> | 36.44  |                 |
| Hettest Sig              | 0.0000 |                 |

**Source:** Extracted from STATA 17 Output by the Researcher, 2023.

Table 4 showed a positive significant association between equity financing, debt financing and ROA of the sampled consumer goods firms in Nigeria. The sustainability reporting showed a negative significant correlation with ROA. However, audit quality documented a positive correlation with ROA of the sampled Insurance firms in Nigeria.

**Table 6**  
*Summary of Regression Results*

Direct Model: Panel Corrected Standard Errors (PCSE) Regression

| Variables              | Coefficients | Z-value | P-value |
|------------------------|--------------|---------|---------|
| EFR                    | 21.2460      | 3.54    | 0.000   |
| DFR                    | 0.2340       | 1.79    | 0.073   |
| STR                    | -0.0339      | -0.17   | 0.861   |
| AUQ                    | -0.1641      | -1.19   | 0.235   |
| R <sup>2</sup>         | 0.3215       |         |         |
| Wald Chi <sup>2</sup>  | 14.63        |         |         |
| Prob. Chi <sup>2</sup> | 0.0055       |         |         |

**Source:** Extracted from STATA 17 Output by the Researcher, 2023.

Table 5 found the presence of heteroscedastic while the study rejected the null hypothesis of homoscedastic which assumes constant variance of error terms. This is evidenced by the hettest chi2 value of 36.44 and a probability of 0.0000. Therefore, the presence of heteroscedasticity suggested a panel corrected standard errors (PCSE) regression model as a corrected tool and the non-suitability of ordinary least square (OLS). The variables are free from multicollinearity as the VIF of the variables are below 6 as a rule of thumb (Gujarati, 1995).



The result from table 6 revealed that equity financing ratio has a positive and significant relationship with ROA of the listed insurance firms in Nigeria as evidenced from p-value of 0.000 and coefficient of 21.246, which is significant at 5% level. This implies that increase in equity financing ratio will translate to an increase in the ROA and vice versa. In other words, equity financing ratio significantly influence ROA for the period under review. Therefore, the result of this model rejects the null hypothesis that there is no significant relationship between equity financing and financial performance of listed insurance firms in Nigeria. Nevertheless, the findings of this study conforms with the findings of Abdulwahab et al., 2023; Mohammed et al., 2022; Tanko et al., 2021, and Chechet and Olayiwola, 2014) who revealed a significant relationship between equity financing and financial performance. However, the result of this study is at variance with the findings of Basit and Irwan (2017); and Dahiru (2016)

Debt financing was found to have an insignificant positive correlation with ROA of the sampled listed insurance firms in Nigeria as evidenced by p-value of 0.073 and coefficient of 0.234 at 5% significant threshold. The result denotes an increase in debt will lead to increase in ROA at an insignificant level. Hence, the result failed to reject the null hypothesis that debt financing does not have a significant relationship with ROA. Nonetheless, the finding is in conformity with the study of Uremadu and Onyekachi who revealed an insignificant relationship between debt financing and return on assets. However, the positive finding is not in conformity with the studies of Abdulwahab et al. (2023); Mohammed et al. (2022); and Tanko et al. (2021).

The result of sustainability reporting revealed a negative and insignificant correlation with ROA of listed insurance firms in Nigeria as evidenced by the coefficient value of -0.033 and p-value of 0.861. This revealed that increase in sustainability reporting disclosure will lead to decrease in return on assets while decrease in sustainability reporting disclosure will lead to increase in return on assets. However, the finding suggests that the increase or decrease in sustainability reporting reveal an insignificant relationship.

The employment of audit quality as a control variable revealed an insignificant negative relationship on ROA of listed insurance firms in Nigeria with a coefficient value of -0.1641 and a p-value of 0.235. This finding revealed that increase in the use of any of the big four as external auditors will decrease ROA and vice versa.

**Table 7**

*Summary of Regression Results*

Moderated Model: Panel Corrected Standard Errors (PCSE) Regression

| Variables              | Coefficients   | Z-value     | P-value      |
|------------------------|----------------|-------------|--------------|
| EFR                    | 0.8033         | 0.06        | 0.950        |
| DFR                    | 0.0321         | 0.03        | 0.974        |
| STR                    | -6.7046        | -1.55       | 0.120        |
| AUQ                    | -0.1407        | -1.37       | 0.170        |
| <b>STR*EFR</b>         | <b>24.6027</b> | <b>1.74</b> | <b>0.082</b> |
| <b>STR*DFR</b>         | <b>0.2080</b>  | <b>0.21</b> | <b>0.836</b> |
| R <sup>2</sup>         | 0.3803         |             |              |
| Wald Chi <sup>2</sup>  | 24.1300        |             |              |
| Prob. Chi <sup>2</sup> | 0.0005         |             |              |

**Source:** Extracted from STATA 17 Output by the Researcher, 2023.



The moderating effect of sustainability reporting on the relationship between equity financing and financial performance as depicted in table 7 revealed has a positive an insignificant correlation as evidenced by p-value of 0.082 and coefficient of 24.603 at 5% significant level. Therefore, an increase in EFR will lead to increase in ROA insignificantly. Nevertheless, the p-value of 0.082 revealed that the result failed to reject the null hypothesis that sustainability reporting has no significant influence on the nexus between equity financing and financial performance of listed insurance firms in Nigeria.

The interaction of sustainability reporting on the relationship between DFR and ROA showed a positive and insignificant correlation as evidenced by a p-value of 0.836 and coefficient of 0.208 at 5% significant threshold. This signified that an increase in DFR it will lead to an insignificant increase in ROA. Therefore, the result failed to reject the null hypothesis that Hence, the result supported the earlier formulated null hypothesis that sustainability reporting has no significant influence on the nexus between debt financing and financial performance of listed insurance firms in Nigeria.

### **5.0 Conclusions and Recommendations**

The result from the direct model revealed that equity financing and debt financing have a significant and insignificant positive relationship with ROA respectively. Whereas, sustainability reporting (moderator variable) and audit quality (control variable) were found to be both negative and insignificant to ROA of listed insurance firms in Nigeria for the period of 2012 to 2021.

The moderated model documented that equity financing has a positive and statistically insignificant association with return on assets of listed insurance firms in Nigeria. Debt financing showed an insignificant positive relationship with ROA.

Considering the conclusion established on the moderating effect of sustainability reporting on the relationship between capital structure and financial performance the following recommendations were suggested.

Insurance firms in Nigeria should increase their level of debt in funding as their operations in order to increase return on assets. Furthermore, Insurance firms in Nigeria should significantly increase their equity financing in order to increase ROA.

### **References**

- Abdel-Jalil, T. (2014). The impact of capital structure on the performance of the Jordanian publicly-held industrial companies. *Jordan Journal of Business Administration*, 10(6), 390–403.
- Abdulla, Y. (2017). Capital structure in a tax-free economy: Evidence from UAE. *International Journal of Islamic and Middle Eastern Finance and Management*, 10(1), 22–37.
- Abdulsaleh, A. M., & Worthington, A. C. (2013). Small and medium-sized enterprises financing: A review of literature. *International Journal of Business and Management*, 8(14), 36-54
- Abdulwahab, A, I., Bala, H., & Adamu, I, A. (2023). Do audit opinion, audit independence and audit quality influence whistle blowing policy? Evidence from Nigerian Exchange Group. *Jurnal Aplikasi Manajemen, Ekonomi Dan Bisnis*, 7(2), 35–43.
- Abdulwahab, A, I., Bala, H., Adamu, A., Yahaya, O, A., & Khatoon, G. (2023). Does board independence moderate the nexus involving ownership formation and financial performance? Evidence from Nigerian Exchange Group. *POLAC International Journal of Economics and Management Science (PIJEMS)*, 9(2), 1–9.
- Abdulwahab, A, I., Bala, H., Kwanbo, M, L., &. (2023). Gusau Journal of Accounting and Finance.



- Gusau Journal of Accounting and Finance*, 3(3), 1–17. <https://doi.org/10.57233/gujaf.v3i3.177>
- Abeyrathna, G. M., & Ishari, S. (2016). Effect of ownership structure on firm performance of manufacturing companies in Sri Lanka. *International Journal of Scientific and Research Publications*, 6(10), 111–115.
- Abor, J., & Biekpe, N. (2009). How do we explain the capital structure of SMEs in sub-Saharan Africa? *Journal of Economic Studies*, 36(1), 83–97.
- Aborode, R. (2005): Strategic financial management. Lagos: El-Toda Ventures
- Abraham, R. (2011). Seasoned equity offerings: Characteristic of firms. *International Journal of Business, Humanities and Technology*, 1(3), 26–33.
- Adamu, A. I., & Tyasari, I. (2022). Social sustainability reporting and board structures in the healthcare industry. *Indonesian Journal of Sustainability Accounting and Management*, 6(1), 24–33. <https://doi.org/10.28992/ijSAM.v6i1.485>
- Adesina, J. B., Michael, N. B., & Adesina, O. (2015). Capital structure and financial performance of commercial banks in Nigeria. *International Journal of Business and Social Research*, 5(2), 21–25. <https://doi.org/10.2139/ssrn.3925685>
- Ajibola, A., & Wisdom, O. (2018). Capital structure and financial performance of listed manufacturing firms in Nigeria. *Journal of Research in International Business and Management*, 5(3), 81–89.
- Ajibola, A., & Wisdom, O. (2018). Capital structure and financial performance of listed manufacturing firms in Nigeria. *Journal of Research in International Business and Management*, 5(3), 81–89.
- Alhaji, S. S., & Sani, G. (2018). Managerial ownership and financial performance of listed manufacturing firms in Nigeria. *International Journal of Academic Research in Business & Social Sciences*, 8(9), 1227–1243.
- Aliu, N. O. (2010). *Effect of capital structure on the performance of quoted manufacturing firms in Nigeria*. Unpublished M.sc Thesis, Ahmadu Bello University Zaria.
- Andow, H. A., & David, B. M. (2016). Ownership structure and the financial performance of listed conglomerate firms in Nigeria. *The Business and Management Review*, 7(3), 131–140.
- Awunyo-Vitor, D., & Badu, J. (2012). Capital structure and performance of listed banks in Ghana. *Global Journal of Human Social Science*, 5(12), 56–62.
- Badar, R. & Saeed, A., 2013. Impact of capital structure on performance empirical evidence from sugar sector of Pakistan. *European Journal of Business and Management*, 1(5), 78–86.
- Barbosa, N., & Louri, H. (2005). Corporate performance: Does ownership matter? A comparison of foreign and domestic – owned firms In Greece and Portugal. *Review of Industrial Organization*, 27(1), 73 – 102.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Accounting and Economics*, 51(6), 1173–1182.
- Balagobei, S., & Velnampy, T. (2017). A study on ownership structure and financial performance of listed beverage food and tobacco companies in Sri Lanka. *International Journal of Accounting and Financial Reporting*, 7 (2), 36–47.
- Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance*, LVII(2), 1–32.
- Barker, H. K., Veit, E. T., & Powell, G. E. (2011). Factors influencing dividend policy decisions of Nasdaq firms. *The Financial Review*, 36 (3), 19–37.
- Basit, A., & Irwan, F. N. (2017). The impact of capital structure on firms performance: Evidence from Malaysian industrial sector a case based approach. *International Journal of Accounting & Business Management*, 5(2), 1–17.



- Brigham, E. F., & Ehrhardt, M. C. (2013). *Financial management: Theory & practice*. Cengage Learning.
- Chechet, I., & Olayiwola, O. (2014). Capital structure and profitability of Nigeria quoted firms. The agency cost theory perspective. *American International Journal of Social Science.*, 5 (3), 1–16.
- Dahiru, I. (2016). *Capital structure and financial performance of listed manufacturing firms in Nigeria*. Ahmadu Bello University Zaria.
- Dandago, K. I., Farouk, M. A., & Muhibudeen, L. (2015). Corporate shareholdings structure and dividend payout ratio of listed chemical and paints firms in Nigeria. *Applied Finance and Accounting*, 1(2), 47-54.
- Ebrati, R. M., Farzad, E., Reza, S. B., & Ghorban, S. (2013). The impact of capital structure on firm performance: Evidence from Tehran stock exchange. *Australian Journal of Basic & Applied Sciences*, 7(4), 1–8.
- Erasmus, P. D. (2018). Evaluating value based financial performance measures. *Journal of Finance and Accounting*, 5, 56–63.
- Eriki, P. O., & Osagie, O. (2017). Effect of debt-equity mix on financial performance of downstream oil and gas firms in Nigeria. *A Journal of Economics and Finance*, 1(1)
- Ezirim, C. B., & Nwakanma, P. C. (2004). *Dimensions of financial management and policy: A problem-solution approach*. Port Harcourt: Markowitz Centre for Research and Development.
- Fodio, M. I., Ibikunle, J., & Oba, V. C. (2013). Corporate governance mechanisms and reported earnings quality in listed Nigerian insurance firms. *International Journal of Finance and Accounting*, 2(5), 279–286. <https://doi.org/10.5923/j.ijfa.20130205.01>
- Forte, D., Barros, L. A., & Nakamura, W. T. (2013). Determinants of capital structure of Small and Medium sized Brazilian Enterprises. *Brazilian Administration Review*, 10(3), 347-369
- Franzese, R. J., Kam, C. D., & Jamal, A. (2001). Modeling and interpreting interactive hypotheses in regression analysis. *Journal of Accounting and Finance*, 4(5), 23–23.
- Githaiga, P. N., & Kabiru, C. G. (2015). Debt financing and performance of Small and Medium Enterprises: Evidence from Kenya. *Journal of Economics, Finance and Accounting*, 2(3), 473-481.
- Gujarati, D. N. (1995). *Basic econometrics - Gujarati 5th edition.pdf* 12–45.
- Hassan, S. A., & Muhammad, S. M. (2016). Effect of profitability and financial leverage on capital structure in Pakistan commercial banks. *Journal of Accounting and Public Policy*, 5(1), 336–342.
- Hasan, B., Ahsan, M., Rahaman, & Alam, N. (2014). Influence of capital structure on firm performance: Evidence from Bangladesh. *International Journal of Business and Management*. 9(5), 184-194 [www.ccsenet.org/ijbm](http://www.ccsenet.org/ijbm)
- Hillman, A. J., Keim, G. D., & Luce, R. A. (2011). Board composition and stakeholder performance: Do stakeholder directors make a difference? *Business & Society*, 40(3), 295-314.
- Ibrahim, E. E. (2009). The impacts of capital structure choice on firm performance: Empirical evidence from Egypt. *The Journal of Risk Finance*, 10(5), 477-487.
- Innocent, C. E. (1986). The relationship between capital structure and corporate profitability: A study of selected quoted oil and gas companies in Nigeria', *Journal of Accounting, Audit, Finance and Economics*, 3 11–25.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Kadivar, A. (2016). The principles of corporate governance. *Economies of Journal of Iran*, 80, 25-29.
- Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance*, 28(4), 911–922.



- Maina, L., & Ishmail, M. (2014). Capital structure and financial performance in Kenya: Evidence from firms listed at the Nairobi securities exchange. *International Journal of Social Sciences and Entrepreneurship*, 1(11), 1–14.
- Macan Bhaire, C., & Brian, L. (2011). An empirical investigation of the financial growth life cycle. *Journal of Small Business and Enterprise Development*, 8(4), 715–723.
- Magoro, K., & Abeywardhana, D. (2017). Debt capital and financial performance: A study of South African companies. *International Journal of Scientific Research and Innovative Technology*, 4(4), 71–84.
- Matsoso, M. L., & Benedict, O. H. (2016). Financial performance measures of small medium enterprises in the 21<sup>st</sup> century. *A Journal of Economics*, 7(2), 144–160.
- Modigliani, F., & Miller, A. (1958). The cost of capital, corporate governance and the theory of investment. *The American Economic Review*, 5(2), 261–297.
- Mohammed, I., Gugong, B. K., & Ayuba, A. (2022). Capital structure, board Size and financial performance of listed deposit money banks in Nigeria. *NDA Journal of Management Sciences Research*, 2(1), 12–25.
- Muhammad, H., Shah, B., & Islam, Z. U. (2014). The impact of capital structure on firm performance: Evidence from Pakistan. *Journal of Industrial Distribution and Business*, 5(2), 13–20.
- Murinde, V., J. Agung & A.W. Mullineux. (2004). Patterns of corporate financing and financial system convergence in Europe. *Review of International Economics*, 12(4), 693–705.
- Muritala, T.A. (2012). An analysis of capital structure on firm's performance in Nigeria. *International Journal of Advances in Management and Economics*, 1(5), 116–124.
- Myers, S., & Majuf, C. (1984). Capital structure puzzle. *National Bureau of Economic Research Cambridge*, 5(5), 55–64.
- Nikoo, S. F. (2015). Impact of capital structure on banking performance: Evidence from Tehran stock exchange. *International Research Journal of Applied and Basic Sciences*, 9(5), 923–936.
- Nirajini, A., & Priya, K. B. (2013). Impact of capital structure on financial performance of the listed trading companies in Sri Lanka. *International Journal of Scientific Research Publications*, 3(5), 1–9.
- Ogiriki, T., Andabai, P., & Werigbelegba, B. (2018). Effect of financial leverage on corporate performance of firms in Nigeria. *Research Journal of Finance and Accounting*, 9(4), 2–15.
- Oladeji, T., Ikpefan, A. O., & Olokoyo, F. O. (2015). An empirical analysis of capital structure on performance of firms in the petroleum Industry in Nigeria. *Journal of Accounting and Auditing*, 5(3), 1–15.
- Oladele, A. S., Omotosho, O., & Adeniji, D. S. (2017). Effect of capital structure on the performance of Nigerian listed manufacturing firms. *European Journal of Business and Management*, 9(7), 12–26.
- Olowokure, O. A., Tanko, M., & Nyor, T. (2016). Firm structural characteristics and financial reporting quality of listed deposit money banks in Nigeria. *International Business Research*, 9(1), 106–122. <https://doi.org/10.5539/ibr.v9n1p106>
- Palacios, H. A., Carrillo, E. P., & Guzman, G. M. (2016). The effects of capital structure on performance: An empirical study on manufacturing SMEs of Mexico. *Journal of Business and Economic Policy*, 3(1), 22–31.
- Shaba, Y., & Yaaba, N. (2016). Capital structure and profitability of deposit money banks: Empirical evidence from Nigeria. *European Journal of Business and Management*, 8(23), 24–32.
- Shehu, U. S. (2012). Firm characteristics and financial reporting quality of quoted manufacturing firms in Nigeria. An unpublished dissertation submitted to the school of postgraduate studies, Ahmadu Bello University, Zaria.



- Siddik, A. N., Kabiraj, S., & Joghee, S. (2016). Impacts of capital structure on performance of banks in a developing economy: Evidence from Bangladesh. *International Journal of Financial Studies*, 5(3), 21–36.
- Stickney, C. P., Brown, P. R. & Wahlen, J. M. (2007). Financial reporting, financial statement analysis and valuation: A strategic perspective. USA: South-Western Cengage Learning.
- Sultan, S. A., & Adam, M. H. (2015). The effect of capital structure on profitability: An empirical analysis of listed firms in Iraq. *Uropean Journal of Accounting, Auditing and Finance Research*, 3(2), 61–78.
- Tanko, U. M., Siyanbola, A. A., Bako, P. M., & Dotun, O. V. (2021). Capital structure and firm financial performance: Moderating effect of board financial literacy in Nigerian listed non-financial companies. *Journal of Accounting Research, Organization and Economics*, 4(1), 48–66. <https://doi.org/10.24815/jaroe.v4i1.18322>
- Umar, M., Tanveer, Z., Aslam, S., & Sajid, M. (2012). Impact of capital structure on firms' financial performance: Evidence from Pakistan. *Research Journal of Finance and Accounting*, 3(9), 1–12.
- Usman, O. A. (2009). Scales economies and performance evaluation of insurance market in Nigeria. *The Social Sciences Journal*, 4(1), 1-11.
- Usman, O. A., & Salami, A. O. (2008). The efficiency of cost characteristics in selected insurance firms in Nigeria. *International Business Management*, 2(3), 78-84
- Uremadu, O. S., & Onyekachi, O. (2018). Impact of capital structure on corporate performance in Nigeria with special focus on consumer goods firm sector of the economy. *Current Investigation on Agricultural Research*, 7(3), 2–18.
- Wahba, H. (2013). Debt and financial performance of SMEs: the missing role of debt maturity structure. *Corporate Ownership & Control*, 10(3), 266-277.
- Velnampy, T., & Nireesh, J. A. (2012). The relationship between capital structure and profitability. *Global Journal of Management and Business Research*, 13(12), 66–74.
- Yahaya, A. O., Mohammed, I., & Garba, S. M. (2022). Board governance and sustainability disclosure in Nigeria listed deposit money banks. *European Journal of Accounting, Auditing and Finance Research*, 10(5), 126–146.
- Yahaya, O. A., Farouk, B. K. U., Lamidi, Y. S., Yusuf, M. J., & Dania, I. S. (2015). Impact of competition on the financial performance of listed deposit money banks in Nigeria. *Journal of Economics and Sustainable Development*, 6(13), 52–61.
- Yazdanfar, D., & Ohman, P. (2015). Debt financing and firm performance: an empirical study based on Swedish data. *The Journal of Risk Finance*, 16(1), 102-118.
- Yegon, C., Cheruiyot, J., Sang, D., & Cheruiyot, D. P. (2014). *Research Journal of Finance and Accounting*, 5(9), 152–159