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BOARD STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED PHARMACEUTICAL FIRMS IN NIGERIA

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Abstract
This research attempts to investigate how corporate board structure affects the financial performance of Nigerian pharmaceutical companies that are publicly traded. The study discovered that female directors, institutional directors, and non-executive directors have a strong significant impact on the profitability of the sampled pharmaceutical firms in Nigeria during the period covered by the study using multiple regression technique. The study used a correlational research design and a panel regression technique of data analysis on a sample of seven pharmaceutical firms for a period of ten years (2012-2020). The research found that, the size of the board of directors had no discernible effect on the selected firms' profitability. According to the research, institutional directors have a positive effect on the profitability of Nigeria's publicly traded pharmaceutical businesses, whereas female directors and non-executive directors have a negative impact on the profitability of their organizations. According to the research, a big board does not always increase a company's profitability. Therefore, management and the board of directors of pharmaceutical companies in Nigeria are advised to reduce the size of their boards to a maximum of six members. Additionally, it was advised that the number of institutional directors on the boards of Nigerian pharmaceutical companies that are publicly traded be expanded since their presence contributes to rising profits. The report's conclusion urges policymakers and other interested parties to start a process to limit the number of women who may serve as directors on the boards of publicly traded pharmaceutical companies in Nigeria since their participation does not increase profitability.

Key words: Board Structure, Financial Performance and Firms

1. Introduction

The changing nature of the economic environment in Nigeria as well as the rising expectations of stakeholders for excellent financial performance have led to a recent assessment of the structure of the boards of directors of publicly listed firms in Nigeria. These elements came together to cause the review. It was a difficult task to develop a board structure formula that would guarantee the company's long-term success in terms of financial performance. This study tries to determine whether or not the impact of board structure on an enterprise's profitability can be documented in a way that is consistent with industry best practices. In this particular research, this question will be specifically examined. Without a question, a well-run and successful board will need to place a strong focus on matters such as duties, positions, structures, and procedures, as well as on the qualifications and talents of the directors (Muller *et al.,* 2014).

Brennan (2012) contends that in order to address the issue of agent and principal conflict, the corporate board of directors should have a significant role in monitoring, supervising management, and coordinating the goals of these agents with the interests of shareholders. The foundation of Brennan's argument is the fact that the board of directors is in charge of the general management of the business. Additionally, it is in charge of approving the management's efforts once they have been thoroughly reviewed (Jonsson, 2005). The Cadbury Report, passed in the UK in 1992, the Higgs Report, passed in the US in 2003, and the Smith Report, passed in the UK in 2003 were all attempts to ease the tension between agency theory and other theories of corporate governance. The Sarbanes-Oxley Act, passed in the US in 2002, the Cadbury Report, passed in the UK in 1992, the Higgs Report, passed in the US in 2003, and the Smith Report, passed in the UK in 2003. The failures that followed the corporate scandals like Enron, WorldCom, and HIH have raised the issue of whether the board structure is the most effective for monitoring how effectively managers are doing their duties (Mizruchi, 2004). Enron, WorldCom, and HIH's boards of directors were all careless in their supervision of questionable accounting procedures used by the management of their respective firms (Lawrence, 2004; Solomon, 2007). Many countries throughout the globe, including Nigeria, have lately changed their corporate governance structures as a direct result of this. In order to address the issues listed below, the Nigerian Securities and Exchange Commission (SEC) implemented a corporate governance framework in 2012.

It is commonly believed that the failure of various financial institutions in Nigeria was caused by a lack of corporate governance codes of conduct, corruption, and a lack of transparency in their operations (Sanda, *et al.,* 2005). A significant absence of corporate governance measures across the nation has caused shareholders'

confidence in publicly traded corporations to completely erode. The Code of Best Practice in Nigeria was created by the Nigerian Securities and Exchange Commission (SEC) in an effort to regain investors' faith in the nation's capital markets. In accordance with this Code of Best Practice, shareholders have received instructions on the corporate governance principles that are intended to serve their best interests at all times. It assists in preserving control over the board's performance throughout business operations.

Fama and Jensen (1983) assert that the board of directors' primary responsibility is to safeguard the interests of the firm's shareholders by closely monitoring the management operations of the company. If one wants to exert effective control over the management of the firm, considering the board of directors' makeup is a crucial consideration. The idea that institutional and non-executive directors are better at protecting the interests of shareholders than their executive counterparts is one that is often held. According to Akpan and Amran (2014), the involvement of outside directors in the position of professional referees raises the likelihood that the board will carry out its oversight function and lowers the danger that top management may conspire with other board members to harm shareholders' interests. The likelihood that the board will carry out its control function is further increased by the involvement of independent directors who serve as professional referees.

Therefore, it would be wise to do study into how the makeup of boards of directors affects the profitability of pharmaceutical companies in Nigeria that are listed on stock exchanges. This research will provide empirical proof to resolve the doubts about directors of publicly listed pharmaceutical firms in Nigeria being able to safeguard stakeholders' interests by enhancing and raising their profitability (female directors, institutional directors, non-executive directors, and board size). The goal of this research is to find any connections that could exist between the board of directors' makeup and the financial success of pharmaceutical businesses in Nigeria, with an emphasis on that country's pharmaceutical market. The major emphasis of the study will be the Nigerian pharmaceutical business. The pharmaceutical firm was chosen due to its distinctive features, such as the manufacture of a broad range of health and food supplement items, as well as the fact that there aren't many studies in this field of the economy. These elements had a role in the decision to choose the corporation as the study's topic.

Along with the requirements established by the Securities and Exchange Commission, several corporations have proclaimed the profile qualities that are essential for their company's directors (2012). It is vital to establish if the

organizational structure of the board of directors has an influence on the amount of profit generated by the firm. According to studies, a variety of criteria, such as board size, board gender, CEO duality, board education, board experience, outside directors, salary, and block holders on the board of directors (BOD), may be used to evaluate corporate governance success (Vo & Phan, 2013). Several studies that examined the link between board structure, board size, and board independence and company performance found that each of these criteria had a negative impact. Many studies in Nigeria, including Ehikioya (2009), Kajola *et al.*, (2010), have led researchers to the conclusion that (2011). This research employed a robust GLS to do this, as compared to previous studies, which evaluated data using OLS. The purpose of this research is to look at the elements that influence the success of publicly traded pharmaceutical companies in Nigeria, with an emphasis on board structure. The most important of them is that a board of directors is critical for supervising and monitoring corporate management as they operate their organization for the benefit of its owners, hence board member selection is critical for a number of reasons (Fama& Jensen, 1983).

The primary issue raised by the research's results is how much the profitability of Nigeria's publicly traded pharmaceutical companies is impacted by all of the proxy factors that affect board composition. The researchers that took part in this study posed the research question, "Does the board structure of pharmaceutical enterprises in Nigeria have an impact on the financial success of such businesses?" in light of the data supplied in the previous paragraphs. The bulk of empirical research on these variables related to board composition and financial results of pharmaceutical companies in Nigeria has been small and of narrow scope. This is due to the way in which the study has been done. The motivation for the present study, which seeks to fill it, came from this gap. Hence, the following null hypotheses were formulated in concurrence with the above set out specific objectives of the study to test board structure and financial performance of listed pharmaceutical firms in Nigerian.

H_{01} Female director (FD) has no significant impact on profitability of listed pharmaceutical firms in Nigeria

H_{02} Institutional director (INSD) has no significant effect on profitability of listed pharmaceutical firms in Nigeria

H_{03} Non-executive directors (NEXD) has no significant effect on profitability of listed pharmaceutical firms in Nigeria

H_{04} Board size (BSZ) has no significant effect on profitability of listed pharmaceutical firms in Nigeria

It adds to the corpus of knowledge by making accessible previously unavailable real data on the correlation between corporate performance and board structure of publicly listed pharmaceutical enterprises in Nigeria.

The pharmaceutical enterprises in Nigeria. firms are regulated by additional bodies such as the National Agency for Food and Drug Administration and Control and the Nigerian Drug Law Enforcement Agency, which make the sector distinct from the other firms in the manufacturing sector. This makes the finding of studies from other sectors hardly applicable to the pharmaceutical enterprises in Nigeria because of the difference in regulation and business environment such as risk and uncertainties.

Second, it enhances the framework by include institutional directors and female directors as indicators of the composition of the board of directors. The Securities and Exchange Commission (SEC), the Nigerian Stock Exchange (NSE), and other players in the pharmaceutical business will all find use for the findings of this study in formulating policy. For students who want to do more study on the subject or a related industry, the book is a useful source of reference information. Over a decade was spent on the research (2005-2020).

There are four sections: a discussion of the literature review and theoretical framework; a description of the research technique and model; results and discussions; and a conclusion and recommendations section.

2. Review of Empirical Studies

Insiders and outsiders' directors' duties are modelled in Raheja (2005)'s theoretical model of board structure. While insiders may be a valuable source of information for the board, they may be influenced by personal benefits and lack of independence from the CEO. Independent of the company, outsiders provide greater monitoring than insiders, although they are less aware of the company's restrictions and prospects. Connell and Cramer (2010), Kyereboah and Coleman (2007), Mashayekhi and Bazaz (2008), Sanda, *et al.,* (2007) and Uadiale (2007) all came to the conclusion that there is a connection between the performance of an organization and its board of directors. Bhagat and Black provided an explanation for the unfavorable link that exists between non-executive directors (NED) and the success of the company (1999). Whilst research conducted by Ponnu (2008); Rashid *et al.,* (2010) revealed no evidence of a substantial connection between non-executive directors (NED) and corporate performance.

Using a pattern of American listed firms Yermack (1996) here came to the realization that having small boards of directors improves the overall performance of the organization, positively affects the behaviour of investors, and has upward consequences in the value of the enterprise. Jensen (1993) made a similar point, arguing that large board size can be less successful than small board size. The premise at the back of this is that when forums get too large, the board's organization problems run upward, and the board itself will symbolically become much larger and less of a part of the control process. Bozeman and Daniel (2005) and Hanifa and Hodeib (2012) determined that there is an inverse relationship between board dimensions and organizational achievement. On the other hand, studies conducted by means of Adams and Mahran (2008) as well as studies conducted by means of Richner and Dalton (1991) have identified an effective affiliation between the dimensions of the board of directors and corporate realization.

The organization's speculation served as the inspiration for this investigation. It involves an agreement where the principal (owners) engage the agent(s) to adopt specific offerings on their behalf, and the principals are responsible for the depreciation of those offerings (Jensen and Meckling, 1976). In the current corporate world, the shareholders, who are the true owners of the company, act chiefly, even when the control of the organization operates within the function of the agents.

Brennan (1995) states that the problem of the organization may also stand further if the agent fails to work with the manager's great hobby, which may also have an effect on the overall performance of the organisation. They take a place close to the agencies while control over the pursuit of their own endeavors is motivated over shareholder price (Agrawal & Knoeber, 1996) and can act in an opportunistic manner for the purpose of maximizing their rewards. (Agrawal and Knopper, 1996).

3. Methodology

This study used a correlational research design to investigate the effect of board structure on the financial performance of a Nigerian pharmaceutical company that is publicly traded. The design is beneficial for studying the cause-and-effect connection between variables. Ten years' length of secondary data from the financial accounts of the selected pharmaceuticals were analyzed for this investigation (2005-2020). This study's population consists of all seven pharmaceutical companies listed on the floor of the Nigerian Stock Exchange

(NSE) as of December 31, 2020.In order to address the spurious regression issue that may result in statistical bias, the study used the panel multiple regression technique of data analysis. Tests including the heteroscedasticity test, the multicolinearity test, the hausman specification test, and the fixed ordinary least square dummy variable test are conducted (Granger & Newbold 1974). This is also supported by the conventional assumptions of traditional regression models, which include the requirements that the explanatory variables are not fully linked and that the variance of the error term must be constant and the same for all observations (homoscedastic). Failure to address this spurious regression issue might result in biased and inconsistent standard error terms for the estimated parameters (Adren, 2007). Therefore, robustness tests contribute to the creation of blue estimators (Best Linear Unbiased Estimators). Utilizing statistical/data analysis software, the analysis is carried out.

To measure the determinants of board structure and financial performance of listed pharmaceutical firm in Nigeria, the following model is estimated:

$ROA_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 INSD_{it} + \beta_3 NEXD_{it} + \beta_4 BSZ_{it} + \mu_{it}$……..i

Where;

ROA_{it} = Return on Asset of firm I in year t
FD_{it} = Female Directors of firm I in year t
$INSD_{it}$ = Institutional Directors of firm I in year t
$NEXD_{it}$ = Non-Executive Directors of firm I in year t
BSZ_{it} = Board Size of firm I in year t
β_0 = the intercept/constant;
$\beta_1 - \beta_4$ = are the parameters;
μ_{it} = the residual/error term of firm I in year t

Variables Measurement

The definitions and measurements of the variables used in this study are presented in Table 1 below;

Table 1: Variables Measurements

Variables	Definition/Measurements
Dependent Variable	
Return on Asset(ROA)	Measured by ratio of profit after tax divide by total assets of current year
Independent Variables	
Female Directors (FD)	Ratio of number of female directors to total number of directors in the firm

Institutional Directors (INSD)	Ratio of number of directors representing indirect shareholding to total number of directors in the firm
Non-Executive Directors(NEXD)	Ratio of number of Non-Executive directors to total number of directors in the firm
Board Size (BSZ)	Natural logarithm of total number of directors on the board of the firm

Source: Authors' compilation (2022).

4. Results and Discussions

The findings that were obtained from the tests that were performed on the data that was gathered for the research are shown in this part, and a discussion of those results follows. In the first part of this section, the data that were gathered for the research are described, and then the section moves on to the inferential statistics.

Descriptive Statistics

The descriptive statistics of the data collected for the study is presented in Table 2;

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev	Minimum	Maximum	Skewness	Kurtosis
ROA	0.08007	0.07783	0.00214	0.32507	1.5494	4.7242
FD	0.1133	0.0946	0.0000	0.3750	0.9093	4.1955
INSD	0.2467	0.0998	0.1111	0.5000	0.9542	3.6169
EXD	0.4036	0.1383	0.1818	0.6363	0.0432	1.6633
BSZ	2.1895	**0.1784**	1.7917	2.4849	-0.1407	1.9861

Source: STATA Output (2022).

Table 2 provides a summary of how the composition of boards of directors influences the financial performance of publicly traded pharmaceutical businesses in Nigeria. According to the data, the range of values for our profitability measures (ROA) is from 0.00214 to 0.32507, with 0.00214 being the minimum and 0.32507 being the highest. The values of the data range from 0.07783 to 0.08007, with 0.08007 serving as the mean ROA value and 0.07783 serving as the standard deviation of the ROA value. Because the standard deviation is so near to the value of the mean, the data for the return on asset variable are not very spread out among the sample firms. This is due to the fact that. According to the score of 1.5494, the data exhibits a favorable degree of bias. The data also did not adhere to the assumption of a symmetrical distribution, and the kurtosis value of 4.7242 demonstrates that the majority of the values are higher than the mean. This demonstrates that the data did not adhere to the condition for a normal distribution, which is necessary for the data to be considered valid. The data also indicates that the lowest and greatest values for female directors (FD) are 0.0000 and 0.3750, respectively, with a mean value of 0.1133 and a standard deviation of 0.0946. The mean value for female directors is 0.1133. The results show a deviation of 0.0946 standard deviations from the mean, which indicates that at least 11.33 percent of the board members of the chosen pharmaceutical enterprises were female directors. The mean value suggests that at least 11.33 percent of the board members of the pharmaceutical enterprises were female directors. The fact that the kurtosis value for these data is 4.1955 indicates that they are normally distributed, while the skewness value of 0.9093 indicates that they are symmetrically biased to the right. The institutional director (INSD) of the evaluated pharmaceutical companies in Nigeria is 0.2467 on average, with a standard deviation of 0.0988 from the mean value. This information is summarized in the table. This means that the standard deviation for the analyzed firms is 0.0988, which denotes a modest dispersion. A minimum value of 0.1111 and a maximum value of 0.5000 are assigned to the

institutional director (INSD). The data's peak is shown by the kurtosis value of 3.6169, which also shows that the majority of the values are higher than the mean and that the data did not conform to the assumption of a normal distribution. The data does not fit the symmetrical distribution assumption since the coefficient of skewness of 0.9542 shows that the data is positively skewed (the bulk of the data is on the right side of the normal curve). The average non-executive director (NEXD) is 0.4036, with a standard deviation of 0.1383, and the lowest and highest values are 0.1818 and 0.6363, respectively, according to the data. This indicates that the average non-ex for publicly traded pharmaceutical companies is 0.4036, while the actual data deviated by 0.1383 from the mean. The fact that the standard deviation is so close to the mean value shows how far the data deviates from the mean. The data meet the requirements for a normal distribution according to the kurtosis value of 1.6633 and the skewness value of 0.0432, which shows that the data is symmetric and skewed to the right within the zero zone of the distribution.
Table 2 further demonstrates that the Board size (BSZ) measure's minimum and maximum values are 1.7917 and 2.4849, respectively, with a mean value of 2.1895 and a standard deviation of 0.1784. This indicates that the sample pharmaceutical companies' average board size over the study period was 2.1895, with a standard deviation of 0.1784. The data's peak is shown by the kurtosis value of 1.9861, which also shows that the bulk of the values are below the mean and that the data did not conform to the assumption of a normal distribution. The data does not fit the symmetrical distribution assumption because of the data's negative skewness, which is shown by the skewness coefficient of -0.1407 (majority of the data are on the left side of the normal curve).

The information is extensively dispersed, suggesting that it isn't always generally distributed, as evidenced with the aid of using the better trendy deviation values of the bulk of the variables, in keeping with an evaluation of the descriptive data of the information obtained for the study. The Shapiro–Wilk test is more appropriate method for small sample sizes (<50 samples) although it can also be handling on larger sample size. Hence, normality of residual was conducted.

Table 3: Normal Data Test

VARIABLES	W	V	Z	P-Values	N
Resid	0.8652	0.422	1.531	0.09531	70

Source: STATA OUTPUT, 2022.

The study makes use of the Shapiro-Wilk (W) test for normal data. This test examines a variable taken from a population that follows a normal distribution by using the idea of the null hypothesis. The assumption that the data follow a normal distribution will serve as the test's null hypothesis (Gujarati, 2004). According to Table 3, normality of residual was conducted and the fact that the P-value for test statistics is statistically insignificant at the 5% level of significance. Consequently, the residual of the model is normally distributed.

The results of the correlation between the variables will be discussed in the next section once the analyses of descriptive statistics and the normality of the data for the study variables have been completed.

Correlation Results

The Pearson correlation's executive summary Table 4 shows the study's variable coefficients in the following ways:

Table 4: Correlation Matrix

VAR	ROA	FD	INSD	NEXD	BSZ
ROA	1.0000				
FD	-0.2575*	1.0000			
	(0.0314)				
INSD	0.0366	-0.0143	1.0000		
	(0.7635)	(0.9064)			
NEXD	-0.1573	0.1377	0.0472	1.0000	
	(0.1934)	(0.2558)	(0.6978)		
BSZ	0.0626	-0.3139*	-0.2007	0.1215	1.0000
	(0.6065)	(0.0081)	(0.0958)	(0.3164)	

P-Values in Parentheses

Source: STATA Output, 2022.

The results of a research on the relationships between a company's return on assets and board structure of pharmaceutical companies that are listed publicly in Nigeria are shown in Table 4. The Nigerian stock exchange lists these businesses. The female director (FD) and return on asset (ROA) of the sample pharmaceutical enterprises in Nigeria are significantly correlated, with a correlation coefficient of -0.2575, which is statistically significant at the 1% level of significance. At the 1% level of significance, this connection is statistically significant (p-value of 0.03). This shows that adding one more female director causes the return on assets to fall by a percentage equal to 25% of its original value. A insignificant positive association between institutional directors and return on asset (ROA) of the sample

pharmaceutical firms in Nigeria is also suggested by the correlation coefficient of 0.0366, which is not statistically significant at any level of significance. The correlation coefficient does not fulfill the requirements for statistical significance at any level of significance, which serves as the foundation for this conclusion. This is because, regardless of the level of significance taken into account, the correlation coefficient fails to demonstrate any statistical significance (p-value of 0.7635). Due to this connection, it is probable that any change in the number of institutional directors in listed pharmaceutical firms in Nigeria—whether the number is increased or decreased—would not have an impact on the return on assets.

As demonstrated by the correlation coefficient of -0.1573, which is not statistically significant at any level of significance, Table 4 also demonstrates a negative link between non-executive directors (NEXD) and return on asset (ROA) of the sample pharmaceutical firms in Nigeria. This is evidenced by the fact that the correlation coefficient is negative (p-value of 0.1934). (p-value of 0.1934). The conclusion that may be derived from this is that the return on assets will drop as the number of institutional directors grows; yet, the finding cannot be relied upon as it did not achieve the level of statistical significance necessary to be regarded trustworthy. In conclusion, the table illustrates that board size (BSZ) is positively connected to the return on asset (ROA) of listed pharmaceutical firms in Nigeria. This result is based on a correlation coefficient of 0.0626, which is not statistically significant at any level of significance; nevertheless, the table does reveal that this link is positive (p-value of 0.6065). (p-value of 0.6065). This link appears to show that an increase in return on assets is connected with an increase in board size; yet, the conclusion is not statistically significant at any level of significance.

Regression Results and Hypotheses Testing

In this section, the hypotheses formulated for the study are tested; the section begins with the discussion of the regression model as presented in table 5;

Table 5: Robust Fixed Effect Regression Model Summary

Variables	Statistics	Prob.
Mean VIF	1.12	
Hettest: Chi2	2.61	0.1064
Hausman: Chi2	128.05	0.0000

Source: STATA Output, 2022.

According to the coefficient of determination, the variables that were considered to be the study's explanatory factors (female director, institutional director, non-executive director, and board size) explained 38.01 percent of all variations in return on asset of the listed pharmaceutical firms in Nigeria. [Citation needed] (R square of 0.3801). The F-statistic of 3.62 and the Probability value of 0.0009 that are included in the table demonstrate that the model used in the research is likewise suitable for use at a significance level of 1 percent.

According to the results of the Breuch Pagan/Cook-Weisberg test for heteroskedasticity/hettest, there is not an issue with heterogeneity. The Chi2 value was 2.61, and the p-value was 0.1064. (that is, a constant variance exists in the panel). In addition, the findings of the Breuch-Pagan and Cook-Weisberg tests indicate that there is no serial relationship, providing more evidence in favor of the model's reliability. Due to the fact that the mean Variance Inflation Factor (VIF) is 1.12, the data also demonstrate that there is incomplete multicollinearity among the variables that are considered independent. This is a significant amount lower than the cutoff of 10, which indicates complete multicollinearity. According to the results of the Hausman specification test, which discovered statistically significant variances in the panel, the OLS regression model is the one that provides the best fit for the research (Chi2 of 128.05 with a p-value of 0.0000). On the other hand, the result variable may be influenced by certain entity-specific characteristics. In order to take into consideration, the influence of unobserved heterogeneity in the Fixed Effect regression, the Least Square Dummy (LSD) was included into the model. This was done in order to make the model more accurate. The next part will thus examine and assess the study's hypotheses.

Hypotheses Testing

The hypotheses are examined in this part to determine the influence of board structure on the financial performance of listed pharmaceutical companies in Nigeria. The regression coefficient for the analysis is shown in Table 6.

Table: 6 Regression Result for Model of study

Statistics variables	Beta coefficients	t. value	Sig

FD	0.7890	-5.05	0.000
INSD	0.4150	3.25	0.002
NEXD	-0.3958	-.2.91	0.005
BSZ	0.0034	0.03	0.977
CONSTANT	0.0963	0.35	0.730
R2			0.3801
AdjR2			0.2750
F.STATISTICAL			3.62
SIGN			0.0009

Source: STATA Output, 2022.

According to Table 6, the value of female directors of pharmaceutical companies (FD) in Nigeria is -5.05 and a coefficient of -0.7890. At the 1% threshold of statistical significance, both stats are significant (0.00 p-value). This indicates that female directors have a detrimental effect on the return on assets (ROA) of publicly traded pharmaceutical companies in Nigeria. With a 78 percent drop in ROA when more FD is present, this means that FD and ROA are negatively correlated. Thus, there is a clear relationship between the ratio of female principals and the return on assets. The results refute the first null hypothesis (H01), which claims that having female directors has little or no financial impact on publicly listed Nigerian pharmaceutical companies. The study found that the presence of female directors significantly affects the return on assets of listed pharmaceutical companies in Nigeria, albeit in a negative way.

The table also shows, with coefficients of 0.4150 and a t-value of 3.25, both of which are statistically significant at the 1% level, that the Institutional Director (INSD) of the pharmaceutical companies included in the sample in Nigeria has a statistically significant positive effect on yield. on the assets of pharmaceutical companies. The inclusion of these two values in the table illustrates this. This is evidenced by the fact that the table meets the criteria for classification as an evidence table (p-value 0.002). This means that the Institutional Directors (INSD) have a substantial and positive impact on the return on assets of publicly listed Nigerian pharmaceutical companies. This is a reasonable conclusion based on the evidence presented. In addition, it was determined that there was a significant link between INSD and ROA, with a 41 percent increase in return on assets for each additional institutional manager, indicating that the increase in ROA was proportional to the presence of institutional managers. In addition, the data indicated a strong link between ROA and INSD. This guide accurately explains why there is a positive correlation between institutional managers' participation and

return on assets. There is no evidence to support the second null hypothesis (H02), which asserts that Institutional Director management has no effect on the return on assets of listed Nigerian pharmaceutical companies. The inclusion of institutional directors on the boards of publicly traded pharmaceutical companies in Nigeria throughout the study period resulted in a greater return on assets for those companies, according to the study findings.

In a similar vein, the table demonstrates that non-executive directors (NEXD) in the sample of Nigerian listed pharmaceutical firms have a significant negative impact on the return on assets of the pharmaceutical firms, with coefficients of -0.3958 and a t-value of -2.91, both of which are statistically significant at the 1 percent level of significance. In other words, the table provides evidence that non-executive directors in the sample of Nigerian listed pharmaceutical firms have a significant negative (p-value of 0.005). It would appear that the profitability of Nigeria's publicly traded pharmaceutical companies would drop by 39.5% for every additional rise in the number of institutional directors serving on the boards of those companies. This would be the case for each additional rise in the number of institutional directors. As a consequence of this finding, the third iteration of the null hypothesis, which is designated by the letter H03 and asserts that institutional directors do not have a significant impact on the profitability of publicly listed pharmaceutical businesses in Nigeria, is not supported by the research. This finding indicates that the null hypothesis is not correct. The results of the study led the investigators to the conclusion that institutional directors have had a significant impact, both positively and negatively, on the profitability of publicly traded pharmaceutical businesses in Nigeria over the course of the research period. This conclusion was reached as a direct result of the findings of the study.
Last but not least, the findings suggest that the size of a company's board of directors has a sizeable and positively significant influence on the profitability of Nigerian listed pharmaceutical businesses. With a coefficient of 0.0034 and a t-value of 0.03 that is not statistically significant at any of the levels of significance considered, the findings suggest that the size of a company's board of directors has a sizeable and positively significant influence on the profitability of Nigerian listed pharmaceutical businesses (p-value of 0.977). This would seem to suggest that the size of a company's board of directors does not have any influence on the profitability of publicly listed pharmaceutical businesses in Nigeria. However, this does not appear to be the case. In light of the fact that it was hypothesized that a more numerous board would result in a rise in profitability, the outcome came as a complete surprise. This is due to the fact that it is expected that bigger boards would put more time and effort into the duty of monitoring management, in contrast to

smaller boards, which are expected to invest less time and effort in the task. In a similar line, larger boards are connected to board monitoring due to their potential to divide the labor weight over a greater number of observers. This is one of the reasons why larger boards are preferred for board monitoring (Klein, 2002).

5. Conclusion and Recommendations

This study was conducted to determine the degree to which the board structures of publicly listed pharmaceutical firms in Nigeria affect the financial performance of these businesses. Based on the analysis of the data and the testing of the hypothesis, the research found that female directors, institutional directors, and non-executive directors all significantly and substantially influenced the profitability of listed pharmaceutical enterprises in Nigeria over the course of the study. This conclusion may be made from the finding that the size of the board had no impact on the company's profitability. Based on the findings and conclusions of the research, the report suggests that the board of directors of listed pharmaceutical enterprises in Nigeria be limited to a maximum of six members. It's critical to note that they must be placed together in such a way that they provide experience diversity while maintaining integrity, accessibility, and independence. This recommendation is part of a bigger study that advises restricting the size of the board of directors of Nigerian listed pharmaceutical corporations to no more than reasonable number of individuals. This exact proposal was created utilizing the study data and results. The number of institutional directors on the boards of pharmaceutical companies with shares trading on Nigerian markets should be raised. This is because it has been demonstrated positive influence of performance

References

Adams, R. B. & Mehran, H. (2008). Corporate Performance, Board Structure and its Determinants in the Banking Industry. Federal Reserve Bank of New York Staff Reports, No.330. A Review and Integrative Model, *Journal of Management, 15 (2), 291-334.*

Agrawal, A., &Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of financial and quantitative analysis*, *31*(03), 377-397.

Akpan, E. O. and Amran, N. A. (2014). Board Characteristics and Company Performance: Evidence from Nigeria, *Jounal of accounting and Finance 2(3), 81-89*

Fama, E. & Jensen, M. (1983). Separation of ownership and control, *Journal of Lawand Economics, 26(2), 301-25*

Grace, M., Ireland, A., & Dunstan, K., 1995. Board structure, Non- Executive Directors' Characteristics and Corporate Financial Performance, *Asia Pacific Journal of Accounting, 2, 121-137.*

Granger, C. and P. Newbold (1974). Spurious Regressions in Econometrics. Journal of Econometrics, 111-120.

Guest, P. M., (2008). The Determinants of Board Size and Composition: Evidence from the UK, *Journal of Corporate Finance*, 14, 51-72.

Gujarati, D. N. (2004). Basic Econometrics, Fourth Edition

Gujarati, D., (2003). Basic *Econometrics*, 4th Ed, New York, McGraw-Hill.

Hermalin, B. E., &Weisbach, M. S., (1991). The Effects of Board structure and Direct

Hermalin, B. E., &Weisbach, M. S., (2003). Board of Directors as an Endogenously Incentives on Firm Performance, Financial *Management*, 20 (4), 101-12.

Jensen, M.C. & Meckling, W.H. (1976). Theory of the Firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 4, 305-360. Journal of American Academy of Business*, 4 (1-2), 263-270.

Klein, A. (2002). Audit Committee, Board of Director Characteristics, and Earnings Management. *Journal Accounting and Economics, 33, 375-450.*

Kyereboah-Coleman, A. & Biekpe, N. (2012). The Relationship Between Board Size, Board Composition, CEO Duality and Firm Performance: Experience from Ghana. *Corporate Ownership and Control Journal, 4(2), 114-112.*

Muller, V, Ienciu, I., Bonaci, C.G., & Filip, C. I., (2014). Board characteristics best practices and financial performance. Evidence from the European capital market, babes-*bolyai University, cluj-napoca, Romania. Vol. xvi • no. 36*

Rashidah A.R. & Fairuzana, H.M. (2012). Board, audit committee and earnings management: Malaysian Evidence, *Managerial Auditing Journal, 21(7), 783 – 804.*

Sanda, A. Mikailu, A.S. & Garba, T. (2005), Corporate Governance Mechanism and firm financial performance in Nigeria. A paper presented at Africa Economic Research *Consortium, Nairobi Kenya, and March 2005. 1-37*

Sanda, A. U., Garba, T. & Mikailu, A.S., (2008). Board Independence and Firm Financial Performance: Evidence from Nigeria. A Paper Submitted to the Centre for the Study of African Economies (CSAE) for presentation at the CSAE Conference 2008 titled *Economic Development in Africa* at St Catherine's College, *University of Oxford, Oxford, 16-18 March 2008.*

Shehu, U. H., (2011), Corporate Governance and Financial Reporting Quality: A Study of Nigerian Money Deposit Bank, *International Journal of Research in Computer Application and Management (U.S.A),* 1(6): 12-19 ISSN: 2231-1009

Smith, A. (2020). The quality of reported earnings and the monitoring role of the board: Evidence from small and medium companies. *South African Business Review, 19(2)*

Uadiale, O. M. (2010). The Impact of Board Structure on Corporate Financial Performance in Nigeria. *International Journal of Business and Management, 5(10), 155-166*

Yammeesri, J., & Lodh, S. C., (2004). Is Family Ownership a Pain or Gain to Firm Performance?

Yermack, D. (1996). Higher Market Valuation of Companies with a Small Board of Directors. *Journal of Financial Economics 40, 185-211.*

Zahra, S. A., & Stanton, W. W., (1988). The Implications of Board of Directors' Composition on financial performance. *Journal of sagepub.com*

Zahra, S. A., &. Pearce II, J. A., (1989). Board of Directors and Corporate *Financial Performance. Journal of sagepub.com*