

BOARD CHARACTERISTICS AND FINANCIAL PERFORMANCE OF LISTED AGRICULTURAL FIRMS IN NIGERIA

ABSTRACT

This study investigated the effect of board characteristics on the financial performance of listed agricultural firms in Nigeria. Three board characteristics—board size, independence, and gender diversity—as well as one financial performance indicator—Return on Equity (ROE)—were used as proxies. Three distinct aims, study questions, and hypotheses were developed using these dimensions and measurements. An ex-post facto research design was used in the study. Five publicly traded agricultural enterprises in Nigeria made up the study's sample. All 5 listed agricultural enterprises were taken into consideration using the census sampling technique. This study used secondary sources that spanned the years 2012 through 2021. The Unit Root Test, Multiple Regression, and descriptive statistics were all used in this study to analyze the data. According to the study's findings, board independence has a considerable impact on return on equity, board gender diversity has no meaningful impact, and board size has no discernible relationship to return on equity. The study's findings support the conclusion that the influence of board features on the financial performance of listed agricultural enterprises in Nigeria is negligible. To balance out the ratio of gender diversity, the study carefully advises listed companies in Nigeria to give serious consideration to the necessity of appointing more female board members. This would not only support the current gender equality movement but also increase profitability by reducing the likelihood of bankruptcy by having more female members who are skilled at assessing risk.

Keywords: board size, board independence, board gender diversity, and return on equity.

INTRODUCTION

Board characteristics refer to features that can be used to measure the effectiveness and efficiency of corporate boards that are tasked with the overall management of the firm. It is important to ensure a good management system which is essential for good financial performance and has been widely recognized as an important corporate governance mechanism for aligning the interests of managers and all stakeholders in a firm (Fakile & Adigbole, 2019). Effective board characteristics enhance the likelihood that owners of capital would be able to monitor the activities of the managers either directly through voting on crucial matters or indirectly through the board of directors; which invariably would protect shareholders' investment (Levine., 2004). Corporate boards are fundamental elements of organizational success because they define firms' strategic directions through the formulation of feasible investment decisions, stipulation of regulations and policies, oversight, and contracting on behalf of stakeholders. Notably, boards of directors embrace the crucial role of oversight over managers and also provide expert advice and guidance to enable organizations to create and enhance value for shareholders (Cao et al., 2021). The absence of appropriate corporate governance has been attributed to be the major cause of failure of many well-performing companies (Assenga et al., 2018). Owing to the ever-changing and overly competitive nature of today's business environment, regulators have become more critical of the smooth running of organizations, and more importantly, boards are expected not just to monitor the management but also provide strategic directions and facilitate changes that are in line with the vision of the organization (Fakile & Adigbole, 2019). To achieve this, emphasis must be placed on the existence of a competent board that contributes to the sustainability of the firm. Therefore, it is crucial to estimate the impact of board characteristics on firm performance.

Statement of the Problem

There is a lack of basic infrastructures, corporations, tax evasion, inexperienced management, constant changes in government macro-economic and fiscal policies, and command and civil unrest in Nigeria. The major signs of poor corporate governance culture and the major global corporate tragedies have been shown to include poor management,

fraud, insider abuse by management and board members, poor asset and liability management, and poor rules and monitoring (Abdullah et al., 2015). The agency theory indicates that managers and employees may have self-interests, which may curtail the achievement of financial performance goals (Wanyama & Olweny, 2013). Accordingly, to avoid the agency problem, there is a need for strong boards with effective board characteristics to monitor the managers and employees. Notably, boards have a significant influence on CEOs and managers. Accordingly, the superiority of the board may result in a negative or positive trajectory of financial performance. For instance, independent directors who are politically superior to CEOs or executive directors may play their oversight role effectively (Wang & Zhang, 2022). Accordingly, there is a need for an optimal mix of board characteristics to prevent agency problems and enhance the financial performance of firms. Despite the significant impact of board characteristics on financial performance, firms continue to experience failures, especially due to conflicting interests between directors and shareholders. An exploration of the challenges that contribute to these failures indicates that incessant agency costs and problems contribute to poor financial performance in organizations. The agency theory reveals that the free-riding problem and coordination costs are the most prominent contributors to the challenges (Cao et al., al.21).

However, despite the apparent positive effects of board characteristics on the financial performance of companies, there is still a high degree of opacity concerning the effect of the characteristics on financial performance. For instance, the study by Orozco et al (2018) indicates that there is a positive relationship between board size and financial performance. However, Topal and Dogan (2014) argued that the relationship between board size and financial performance is negative. The same is the case for board diversity. Ombaba (2016) indicated that board diversity was instrumental in improving a company's ROA. However, Kilic (2015) opined that board diversity (particularly gender diversity) did not have any significant influence on financial performance. Accordingly, these discrepancies in research findings curtail organ the nation's ability to affect the relationships positively. In the l of the foregoing, it became empirically evident that earlier studies were generally focused on either deposit money banks, insurance firms both foreign and local, or rural banks in the country, which gave rise to a research gap in the context of assessing the phenomena of board characteristics and financial performance of listed agricultural firms in Nigeria.

Aim and Objectives of the Study

The main aim of the study is to determine the effect of board characteristics and financial performance of listed agricultural firms in Nigeria. The specific objectives of the study are to:

1. Ascertain the effect of board size on the return on equity of listed agricultural firms in Nigeria.
2. Ascertain the effect of board independence on the return on equity of listed agricultural firms in Nigeria.
3. Ascertain the effect of board gender diversity on the return on equity of listed agricultural firms in Nigeria.

Hypotheses

- Ho₁: The effect of board size on the return on equity of listed agricultural firms in Nigeria is not significant.
 Ho₂: The effect of board independence on the return on equity of listed agricultural firms in Nigeria is not significant.
 Ho₃: The effect of board gender diversity on the return on equity of listed agricultural firms in Nigeria is not significant.

REVIEW OF RELATED LITERATURE

Conceptual Review

Board Characteristics

The concept of the board is derived from the attributes or incentives variable that plays a significant role in monitoring and controlling managers and can be described as a bridge between company management and shareholders (Oyedokun, 2019). To understand the role of the board, it should be recognized that boards consist of a team of individuals, who combine their competencies and capabilities that collectively represent the pool of social capital for their firm that contributes to executing the governance function (Westphal, 2001). Board characteristics refer to features of corporate boards that are tasked with the ll management of the firm. The success or collapse of firms is associated with the role acted by the management and firm governance as a process. In this paper, the characteristics of boards of directors that were studied include board size, independence, and, gender diversity (Fakile & Adigbole, 2019).

Corporate board characteristics transmit and transcend every attribute and feature of a firm's board that permits the successful and efficient pursuit or full realization of the interests of the various stakeholders. The efficiency or effectiveness of the board is evaluated using both quantitative and intangible variables. The quantitative variables include board size, board independence, board shareholdings, board frequency of meetings, board gender diversity, and board membership competence. On the other hand, the qualitative or intangible variables include quality decisions, production of positive values, etc. (Kamaludi et al., 2020). A company's board of directors is made up of directors appointed by the shareholders to oversee the firm's assets and accomplish its objectives. Lin et al (2015) believe that this contract is comparable to an agency contract because the investors are the principals who hire the directors to make decisions in their best interests. The purpose of the investors is to maximize profit while equally ensuring the company's continued existence.

Board Size

Board size refers to the number of directors on the board. It is an important factor in determining the effectiveness of the board. Salehi et al (2018) also defined that board size is comprised of the number of directors on the board. There is a view that larger boards are better for firm value because they have a range of expertise to help make better decisions, and are harder for a powerful CEO to dominate. Jensen and Meckling (1976) argued that a bigger size board of directors may improve the companies' board effectiveness and support the management in reducing agency cost that results from poor management and consequently leads to better financial results.

Board Independence

Board independence refers to the state in which all or a majority of the members of a board of directors do not have a relationship with the company except as directors (Fakile & Adigbole., 2019). An independent non-executive director is defined as an independent director who has no affiliation with the firm except for their directorship. There is an apparent presumption that boards with significant outside directors will make different and perhaps better decisions than boards dominated by insiders. Furthermore, Fama and Jensen (1983) concluded that non-executive directors play an important role in the effective resolution of agency problems of a firm and therefore their presence can lead to straightened and more effective decision-making in the firm.

Board Gender Diversity

Board gender diversity is also an important corporate governance attribute. This explains the number of women on the board. The diversity in the board is significant in that it enhances effectiveness in corporate governance. Literature on gender studies stated that board diversity could improve the effectiveness and efficiency of the board and that firms can benefit from the existence of women on the board of directors (Salawu & Adedeji, 2017). Zhuang et al. (2018) opined that the characteristics of board composition such as nationality, age, independence, and gender along with many attributes, which supports the firm. Rao and Tilit (2016) revealed that board gender diversity of its members should be based on various dimensions that are advantageous to a firm since they come along with different ideas that complement one another. Bakar et al. (2019) noted that gender diversity in the composition of the board would enhance a balance in decision-making in a way females are different from men. Female members are very sensitive to many issues such as community response, leadership style, employee attitude (Al-shaer & Zaman, 2016).

Financial Performance

Financial performance is a measure of how well or poorly an entity is putting its resources into use. It measures the level at which financial objectives are being met. It measures the efficiency applied by a firm in the use of its assets to create profits. There are two main reasons for the widespread use of financial performance measures to measure performance. The first reason is profit articulates directly with the organization's objectives which are almost always purely financial. The second reason is that properly chosen financial performance measures provide an aggregate view of an organization's performance (Fakile & Adigbole, 2019). These results are reflected in the firm's Return on Equity, Return on Assets, and Earnings per Share. Among other financial measures, ROE is a superior measure of profitability and a good indicator of corporate health since it indicates how well the management is doing as it shows how much profit each naira of common stockholders' equity generates (Agyei-Mensah, 2018).

Return on Equity (ROE)

Return on equity (ROE) is the amount of net income returned as a percentage of shareholder's equity. Return on Equity is a ratio that provides investors with insight into how efficiently a company (or more specifically, its management team) is managing the equity that shareholders have contributed to the company (Bashari & Mohammed, 2019). It is about the earning capacity by using shareholder's funds. It is the responsibility of managers to effectively manage the equity. ROE explains net earnings by using the equity given by the shareholders. It also indicates the portion of total assets provided by shareholder equity. Return on equity (ROE) is a measure of financial performance calculated by

dividing [HYPERLINK "https://www.investopedia.com/terms/n/netincome.asp"](https://www.investopedia.com/terms/n/netincome.asp) net income by. Because shareholders' equity is equal to a company's assets minus its debt, ROE is considered the return on net assets. ROE is considered a measure of how effectively management is using a company's assets to create profits. ROE is especially used for comparing the performance of companies in the same industry (Awuah et al., 2017).

Theoretical Review

Agency Theory

Agency theory as postulated by Jensen and Meckling (1976) which is premised on the assumption that there is a separation between the management of an organization and its ownership. The theory labels the owners of a firm as its principals and the management as its agent. Olugbenga, et al (2014) stated that agency theory is the application of game theory to tagentsplanation of the circumstances in which a person (the agent) acts on behalf of the principal for the advancement of the principal's objectives. According to Adeyemi, et al, (2019), agency theory is a unit of finance and accounting that explains the conflicts of interest between stakeholders with diverse interests in the same asset. This theory provides that a relationship between the owners and manages leads to conflict which may result in additional costs related to resolving the conflict between owners and managers (Jensen & Meckling, 1976 in Kisangi, 2021).

In its simplest form, agency theory explains the problems arising from the separation of ownership and control. It provides a useful way of explaining relationships where the parties' interests are at odds and can be brought more into alignment through proper monitoring and a well-planned compensation system.

Owners' interests are likely to be compromised if agents make the most of their egoistic goals at the disadvantage of firm performance. The agents cannot be dependable and therefore there is a need for supervision of the executive managers by the board of directors so as to protect owners' interest. The agency problem arrives when "there is goal incongruence to the objectives of the principal and his agent and it becomes virtually impossible for the principal to keep track of what the agent is up to" (senhardt ,1989). Therefore, the supervision of management undertakings is recognized as a vital responsibility of the board of directors. This is meant to minimise the agency problems so that higher organisational performance can be accomplished.

Empirical Review

Abimbola et al (2022) exaorganizationalct of board composition on the financial performance of listed commercial banks in Nigeria. A total of eight commercial banks were used as sample size for the study. The study covered a five year period (i.e., 2016-2020). The study used secondary data to reach study findings. Over three years the study was analyzed using multiple regression techniques processed on SPSS. From the analysis of the study, it is found out that only board size have significant influence on the financial performance of commercials in Nigeria. Furthermore, CEO duality and board gender have no significant effect on the financial performance of commercial banks in Nigeria. The study therefore recommends a majority of board members be female to provide some additional skills and perspectives that may not be possible with all-male boards.

Gatehi and Nasieku (2022) determined the effect of board characteristics on the financial performance of non-financial firms listed at the NSE. A quantitative research was conducted using 26 randomly selected non-financial firms listed on Quantitative historical financial data from companies' financial statements, and a correlational and regression analysis was conducted using Return on Equity (ROE) as the dependent variable. Notably, diagnostic tests such as the test for multicollinearity, autocorrelation, normality tests were conducted before the Pearson's correlation test. Importantly, the Panel Daand ta Model was used to determine the goodness of fit, while the Panel Least Square model was used to select the appropriate model for regression analysis. The Fixed Effect Model was the most suitable model. As a result, the findings showed that board size and independence had statistically significant effects on the dependent variable, while board diversity (gender diversity) had a statistically significant influence on the financial performance of non-financial firms listed on the NSE. Moreover, firm size had a statistically insignificant effect as a moderating variable.

Nwankwo and Uguru (2022) examined the impact of board characteristics on profitability of listed service firms in Nigeria. The study adopted ex-post-facto design using the secondary data collected from annual accounts and reports of selectean d listed service firms in Nigerian Stock Exchange (NSE) covering twenty (20) firms over a period of ten years (2011 to 20the 20). The ordinary least square panel regression analysis over data analysis applying Generalized Method of Moment (GMM) analysis. The study found that board characteristics have strong effects on the listed service firms' profitability. Specifically, the board size and board composition have significant positive effects on

service firms' profitability while board gender has insignificant negative effect on listed service firms' profitability. The study recommended that the firms should increase as much as possible the board size bearing in mind Nigeria Securities and Exchange Commission corporate governance Code requirement of a minimum of five and maximum of fifteen members.

Augustine and Juliet (2022) explored the influence of corporate board attributes on the financial performance of conglomerates in Nigeria. Board Size, Board Independence, Board Committees, Board Meetings, and Board Shareholdings served as indicators of board characteristics, while financial performance was measured by Return on Assets (ROA). As a consequence of the 10-year study period from 2011 to 2020, a sample of five quoted conglomerates was selected. Secondary data were obtained from the annual reports of the selected conglomerates using an ex-post facto research design. The regression method employed was panel data regression. The findings demonstrate that the size, independence, and stock holdings of the board and audit committee had a considerable effect on the financial performance of conglomerates in Nigeria. However, board meetings did not show any significant influence on the financial performance of Conglomerates in Nigeria. The study recommends reasonable synergy between board members and owners to maintain a reasonable board size, accountability, transparency, and teamwork in order to sustain board independence as an instrument or influence on the financial performers in Nigeria.

Benvolio and Ironkwe (2022) examined the board composition and firm performance of quoted commercial banks in Nigeria. Data was collected from the annual financial reports of all the fourteen quoted commercial banks in Nigeria. Ordinary least square regression analysis, descriptive statistics, Hausman specification test was employed to test the data collected. The result of the study should show that board composition is significantly related to the firm performance.

Aigbovorhiuwa et al (2022) examined board characteristics and firm performance of Quoted Insurance companies in Nigeria for the period of 2012 – 2020. The study employ correlational research design and adopts a dual from 2012 to 2020 two firm peemploysna ce variables, Return on assets (ROA) and Tobin's Q. Board size, independence, gender and nationality diversity are the variables representing board characteristics. The study analyzes data collected using descriptive statistics, correlation matrix and random effect panel regression technique. The result of the findings shows that board size, independence, gender and nationality diversity has no significant on ROA. The result also shows that board size has, a significant negative impact on significanceceasure of performance, and board independence, and gender diversity have a significant positive effects on the Tobin's Q.

METHODOLOGY

This study investigated the effect of significant positive effect financial performance of listed agricultural firms in Nigeria. Three proxy of board characteristics (Board size, Board Independence and Board Gender Diversity) and measures of financial performance include Return on, Asset (ROA) and Return on Equity (ROE). These dimensions and measures were used to formulate six specific objectives, research questions and hypotheses. The study adopted an ex-post facto research design. The population of the study,y was 5 listed agricultural firms in Nex post Census sampling technique was used and considered all 5 listed agricultural firms. This study employed secondary sourced which covered a period of 10 years from 2012-2021. This study adopted descriptive statisourcesUnit Root Test and Multiple Regression method of data analysis.

Model Specification

The functional effect of the dependent variables on independent variables, the disturbance, co-efficient, and intercepts for board characteristics and financial performance for the research are stated below:

ROE = f(BOS, BI BGD, FS) equation 1a

This can be written in Ordinary Least Square (OLS) form as:

$ROE_{it} = \alpha_0 + \alpha_1 BOS_{it} + \alpha_2 BI_{it} + \alpha_3 BGD_{it} + \alpha_4 FS_{it} + e_{it}$ Equity1b

ROE = Return on Equity as measure for financial performance

BOS = Board Size as dimension for board characteristics

BI = Bofd Independence as dimension for board character the rustics

BGD = Board Gender Diversity as dimension for board chat characteristics

FS = Firm Size as controlling variables

α_0 = Constanta Term

$\alpha_1, \dots, \alpha_3, \eta_1, \dots, \eta_3$ and β_1, \dots, β_3 = Coefficient Terms

i = No of firms

t = Time Period ranging from 2012 – 2021 (10 years)

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Data Period	N	Minim	Maxi	Mean	Std. Dev	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
BS	50	6.00	17.00	10.5000	2.35503	.394	.192	.358	.381
BI	50	.08	.63	.3043	.12096	.413	.192	-.138	.381
BGD	50	.30	.95	.6613	.08985	.537	.192	1.729	.381
ROE	50	-4.07	90.91	5.8002	14.033	4.296	.192	19.636	.381
FS	50	6.82	10.14	7.4515	.83847	2.551	.295	5.405	.381
Valid N (list)	50								

Source: SPSS Output 2023

Result from the above table 1 showed the descriptive statistics of the measures of independent and dependent variables. board size (BS), board Independence (BI), and **results from** geodiversity (BGD) show proxies for board characteristics while return on equity (ROE) was used as a proxy for financial performance. Also firm size (FS) was used as controlling variable. The results indicated that board size (BS) has a positive growth rate as a proxy between the Minimum, Maximum Mean, and Standard derivation stata historical values. Board size (BS) grows from 6.00 to 17.00 with a Mean value of 10.5000 and Standard derivation value of 2.35503. The result also shown a skewness and kurtosis statistics values that provide useful information about the symmetry of the probability distribution, Board size (BS) had a positive value (0.394) with a Standard Error (0.192) which implied that the data set have a long right tail and positive kurtosis value (0.358) with a Standard Error value (0.381) implied that, the extent of flatness of the distribution is less than the normal curve.

The result in table 1 had shown descriptive statistics of board independence (BOI). The result had a positive growth rate between the Minimum (0.08) to Maximum (0.63) with a mean table and Standard Deviation of 0.120. The result also shown a skewness and kurtosis statistics values that provide useful information about the symmetry of the probability distribution, Board Independence (BOI) had a skewness value (0.413) with a Standard Error (0.192) which implied that the data set has long right tail and negative kurtosis value (-0.138) with a Standard Error value (0.381) implied that, the extent of flatness of the distribution is less than the normal curve.

The result in table 1 had shown descriptive statistics of board gender diversity (BGD). The result had a positive growth rate between the Minimum (0.30) to Maximum (0.95) with a value of 0.661 and Standard Deviation of 0.0898. The result also shown a skewness and kurtosis statistics values that provide useful information about the symmetry of the probability a distribution, board gender diversity (BGD) has also sensitive skewness value (0.537) with a Standard Error (0.192) which implies that the data set has a long right tail and the positive kurtosis value (1.729) with a Standard Error value (0.381) implied that, the extent of flatness of the distribution greater than the normal curve.

The result in table 1 also had shown descriptive statistics of Return on Equity (ROE). The result had a negative growth rate to positive growth rate between the Minimum (-4.07) tablinum (90shows a Mean value of 5.800 and Standard Deviation of 14.033. The result also showed skewness and kurtosis statistics values that provide useful information about the symmetry of the probability distribution, Return on Equity (ROE) had a positive skewness value (4.296) with a Standard Error (0.192) which implied that the data set has a long right tail and the positive kurtosis value (19.636) with a Standard Error value (0.381) implied that, the extent of flatness of the distribution greater than the normal curve.

Unit Root Test

Stationarity implies that the mean, variance and covariance are constant across different periods. Existence of unit roots can lead to serious issues such as; spurious regressions and errant behavior variables, es due to econometric assumptions for analysis not being existing study tested for the stationarity of all variables used by applying two

different panel unit root tests namely; the Im, fPesaran & Shin Test and Levin, fLin & ChufTest. According to table 4 below, all variables were stationary at levels; thereby indicating that atestsvariables were integrated of order zero, i.e I(0).

Table 2: Unit Root Test Results

Variable	LL & C	IPS	ADF FISHERS	HADRI	ORDER OF INTEGRATION	REMARK
ROE	0.0000	0.0063	0.0026	0.0000	I(0)	Stationary
BGD	0.0000	0.0004	0.0001	0.0000	I(0)	Stationary
BI	0.0000	0.0000	0.0000	0.0001	I(0)	Stationary
BOS	0.0000	0.0027	0.0016	0.0004	I(0)	Stationary
FS	0.0000	0.0034	0.0419	0.0006	I(0)	Stationary

Author's Computation Using E views 10

The empirical results of the Panel unit root test at 5 percent critical levels in table 2 above shows that all the variables of interest are I(0), that is, stationary at levels. Their P-values are less than 5% with respect to LL & C, IPS, ADF Fisher and Hadri.

Table 3 Regression Analysis of ROE Model

The model for the multivariate analysis of ROE is as expressed by equation-3 and 4 in section 3.10 of chapter three, which is recast as follows:

$$ROE = f(BS, BI, BGD, FS) \quad (3)$$

This can be written in Ordinary Least Square (OLS) form as:

$$ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 FS_{it} + \epsilon_{it} \quad (4)$$

$a_1 > 0; a_2 > 0; a_3 > 0; a_4 > 0$

Dependent Variable: ROE

Method: Panel Least Squares

Date: 4/16/23 Time: 15:09

Sample: 2012 2021

Periods included: 10

Cross-sections included: 5

Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.09365	10.56518	2.564429	0.0113
BS	-10.10102	8.843355	-1.142216	0.1552
BI	-21.23315	8.958471	-2.370176	0.0190
BGD	5.7209944	1.283881	4.456016	0.0000
FS	-48.05695	12.42927	-3.866435	0.0002
R-squared	0.658724	Mean dependent var		5.800205
Adjusted R-squared	0.537013	S.D. dependent var		14.03329
S.E. of regression	13.03651	Akaike info criterion		-8.004136
Sum squared resid	2634.305	Schwarz criterion		-8.100236
Log likelihood	-635.3309	Hannan-Quinn criter.		-8.043159
F-statistic	7.310970	Durbin-Watson stat		1.198857
Prob(F-statistic)	0.000020			

Source: Author own computation Using E View 10

The result in table 3 discovered a correlation coefficient of ($R^2 = 0.658$, Adjusted $R^2 = 0.537$) which illustrated that relationship exist jointly between independent variables (board size, board independent, board gender diversity) and dependent variable (return on equity). The coefficient of determination R-Square represented the proportion of variance of dependent variable (ROE) that has been explained by the independent variables (BS, BI, BGD, FS) in the

model. This implied that 53.7% of the increase in Return on Equity (ROE) is due to increase in board size (BOS), board Independence (BI), board gender diversity (BGD) and firm size (FS) while 46.3% was explained by unknown variables that were not included in the model. The F – statistic, 7.3109 with a Prob (F-statistic) value of 0.000 showed that the model satisfies the overall goodness-of-fit statistical test. It implies that ROE measures, inclusive of the moderator variable are able to predict BS, BI, BGD and FS of the sampled listed agricultural firms in Nigeria. The Durbin-Watson Statistic of 1.198 suggests that the model does not contain serial correlation.

Test of Hypotheses

Statement of Hypotheses

- Ho₁: The effect of board size on return on equity of listed agricultural firms in Nigeria is not significant.
 Ho₂: The effect of board independence on return on equity of listed agricultural firms in Nigeria is not significant.
 Ho₃: The effect of board gender diversity on return on equity of listed agricultural firms in Nigeria is not significant.

Decision Rule: Accept Ho if $P > 0.05$. Otherwise reject

Decision: The result in table 3 discovered a significant level between board size (BS) and return on equity (ROE). The probability value $P = 0.1552$ which is greater than 0.05 and it implied that, the significant effect of board size (BS) on return on equity (ROE) is statistically insignificant at 0.05 alpha level. Thus the null hypothesis two is accepted which implied that the effect of board size on return on equity of listed agricultural firms in Nigeria is not significant.

Decision: The result in table 3 discovered a significant level between board independence (BI) and return on equity (ROE). The probability value $P = 0.0190$ which is less than 0.05 and it implied that, the significant effect of board independence (BI) on return on equity (ROE) is statistically significant at 0.05 alpha level. Thus the null hypothesis four is rejected which implied the effect of board independence on return on equity of listed agricultural firms in Nigeria is significant.

Decision: The result in table 3 discovered a significant level between board gender diversity (BGD) and return on equity (ROE). The probability value $P = 0.000$ which is less than 0.05 and it implied that, the significant effect of board gender diversity (BGD) on return on equity (ROE) is statistically significant at 0.05 alpha level. Thus the null hypothesis six is rejected which implied that the effect of board gender diversity on return on equity of listed agricultural firms in Nigeria is significant.

Conclusions

This research work assessed board characteristics and financial performance of listed agricultural firms in Nigeria. In agreement with prior evidence from developed countries that show significant linkage between board characteristics and financial performance, our study concluded the following;

1. Board size has insignificant effect with return on equity of listed agricultural firms in Nigeria.
2. Board independence has significant effect with return on equity of listed agricultural firms in Nigeria.
3. Board gender diversity has significant effect with return on equity of listed agricultural firms in Nigeria.

Recommendations

In consonance with this study's findings, it is recommended that:

1. Listed firms in Nigeria should consider highly the need to admit more female board members to balance up the ratio of gender diversity. This will not only give credence to the contemporary propagation of gender equality but having more female members who are resourceful in risk evaluation will serve as a check to the possibility of bankruptcy and improve profitability.
2. In view of the significant effect of board independence return on equity. In this vein, the recommendation is that the indigenous agricultural firms should essentially consider appropriately increasing board independence of the firms as well as increasing shareholders proportion so as to enhance and improve on their financial performance.
3. Firms should admit board members that are resourceful. This will help the board have the required human resources to evaluate the best possible financing option vis a vis cost of capital and any agency issues that may arise from such investment decision.

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