Effect of Board Characteristics on Financial Performance of Quoted Agricultural Firms in Nigeria

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Abstract

The study examines the effect of board characteristic on financial performance of quoted agricultural firms in Nigeria. board characteristics is the independent variable proxied by (board size, board diligence, board independence and board gender while financial performance (dependent variable) was proxied by return on equity. These were with the view of examining the relationship that exists between board characteristics and performance of quoted agricultural firms in Nigeria. The study which covered a ten-year period (2010–2019) made used of secondary data sourced from published annual reports and accounts of 5 purposively selected quoted agricultural firms on the Nigerian Stock Exchange (NSE).In other to ensure the validity and the reliability of our data, the study therefore subjected the data to a diagnostic test using Descriptive Statistic Analysis, normality test, Correlation Matric, random effect regression analysis with the help of Stata13. Empirical evidences from the hypothesis tested indicated that Board characteristic, Board Size, Board Diligence, Board Independence and Board Gender has no significant effect on the financial performance of quoted agricultural firms during the period understudied. The study recommends among others that reduction of board sizes will be critical to the success and survival of corporate quoted firms in Nigerian while firms should also increase their size through increase in liquidity and put these to efficient use in order to enjoy economies of scale. The size of the board must not be unwieldy so that company's businesses can be managed effectively and efficiently by the board members.

Keywords: Board Characteristic, Board Size, Board Diligence, Board Independence, Board Gender and Return on Equity

INTRODUCTION

Boards in the organogram of any establishment whether public or private, quoted or unquoted, profit oriented or not, is the apex decision making organ of the establishment. It may exist as a creation of law or code that must be followed or a product of coercive force. In the public sector, the members of Board of Directors can also be called Council Members, Board of Governors, Governing Council and other similar nomenclatures (Arumona& Uyawu 2017). The government, donor agencies and other fund providers whom they represent may give whatever nomenclature that suites their objective. What is paramount however is that, it is the highest decision-making body of that establishment. In the corporate world, the Board of Directors of a company is the representative of shareholders and as such has a responsibility to ensure the efficient management of the entire organisation (Arumona& Uyawu2017). The impact of board on the success of organization isincreasingly recognized globally, and corporate governance practices are embraced by different countries (Bathula, 2008). This attraction is in response to several corporate collapses that continue to take place over the world (Rebeiz, 2015). According to the World Bank Reports (2016), good corporate governance practice reduces borrowing costs, adds values to firm, and improves risk management, which eventually lead to sustainable growth and improved firm's performance.

Previous studies show that good board characteristic improvesfirm's performance, others prove inverse relationship, while some fail todetermine significant link between the variables (Ghabayen, 2012). The subject of firm's performance has received substantial attention fromscholars in various areas of business endeavor. It is a major concern forbusiness specialist since financial performance has repercussions onorganization's survival. Better performance reflects efficient utilizationof company's resources; hence improve the economy of the country(Roberts, McNulty and Stiles, 2005). Studies such as (Bathula, 2008)and (Ghabayen, 2012) on board attributes and firms' performance haveproduced varied results ranging from supporting to opposing a positive relationship leading to a conflicting empiric on board attributes and firm's performance. Hence,a problem of recognizing and clarifying thelinkbetween board characteristics and performance of Nigerian quoted agricultural firms remains unresolved. With respect to these divergent results, the study seeks toexamine the relationship between board characteristics on financial performanceof quoted Nigerian agricultural firms. Specifically, the study soughtto determinethe relationship that exists between board independenceand performance of Nigerian quoted agricultural firms; evaluate therelationship between board size and performance of Nigerian quotedagricultural firms; assess the relationship between boardcomposition and performance of Nigerian quoted agricultural firmsand identify the relationship between board diligence and performanceof Nigerian quoted agricultural firms.

LITERATURE REVIEW

Conceptual Framework

Concept of Board Characteristics

Board performance is influenced by the effectiveness of the board, which in turn is influenced by factors such as size of board, board composition, board diversity and quality among others (Brennan, 2006). There is no unanimity of empirical results by researchers on the effect of these characteristics on the value of the firm.

Board Size and Firm Performance

Board size affects the quality of deliberation among members and ability of board to arrive at optimal corporate decisions. However, determining an ideal size of the board has being an ongoing and controversial debate in corporate governance literature. Several arguments arise in the literature on whether the size of corporate boards determines corporate performance. This argument always prevails due to the strategic posture of board members in companies' policies and strategies. Among others, said*et al.* (2009) evidenced a significant negative relationship between board size and corporate performance, advocating that large board size result to ineffectiveness in communication, coordination and decision-making. However, a study conducted on a sample of public listed Indonesian companies by Siregar and Bachtiar (2010) found a non-linear relationship between board size and improved corporate performance. The study noted that a large board would be able to exercise better monitoring, but too large board will render the monitoring process ineffective. Chang *et al.* (2012), Esa and Mohd-Ghazali (2012) provide evidence of a positive relationship between board size and corporate performance. Based on the positive findings, Esa and Mohd-Ghazali (2012) argued that larger boards offer more knowledge and experience and also put forward different ideas in board deliberations. Similarly, Haji and Mohd-Ghazali (2013) concluded that large board size is connected with increased monitoring capacity which could lead to sharing of a variety of experiences in boardrooms. Besides, a corporate governance-sustainability disclosure study conducted on a sample of 50 Pakistan companies by Lone, Ali, and Khan (2016) established that a large number of directors on corporate boards bring the experiences of diverse backgrounds which affect the level of corporate performance.

More recently, Sadou et al. (2017) highlighted that larger boards are more effective and have greater influence over companies' performances. On the other side, some literature provided evidence of a negative association between board size and sustainability disclosure. In Nigeria, the rule guiding the size of a corporate board is spelled out in the country's corporate governance code. Specifically, the revised code of corporate governance 2018 stipulates that corporate board size should be relative to the complexity and scale of companies' operations. The code further specifies that the number of directors in company's board should not fall below five (5). However, the governance code did not specify the maximum number of directors a company should appoint for any specified period. Therefore, considering the provision in Nigeria's revised corporate governance code, this study expects board size to have a positive effect on corporate performance.

Board Independence and Firm Performance

The presence of independent directors on a board can help to segregate the management and control tasks of a company and this is expected to offset inside members' opportunistic behaviours (Jensen and Meckling, 1976 cited in Hussain et al., 2016). In addition, independent directors generally have stronger and extended engagement with wider groups of stakeholders (Wang and Dewhirst, 1992), and they tend to have a broader perspective that is likely to result in a greater exposure to performance requirements (Rupley et al., 2012). However, despite several support for independent directors on corporate boards, debates were still ongoing whether independent directors are able mechanism for aligning managerial interests with those of shareholders and also their value creation merits for corporate performance. Huang (2010) concluded that independent directors act as a monitoring mechanism that ensures companies are properly managed by corporate management and also work towards enhancing corporate image and performance. A study conducted on a sampled US firms by Zhang, Zhu, and Ding (2013) claims that independent directors have more diverse background and represents external stakeholders of companies. As such, they have a stronger orientation towards better operation strategies than their counterparts in the boardroom. Studies Sharif and Rashid (2014), Kaur et al., (2016) indicated a positive link between board independence and improved corporate performance. Conversely, Abdullah et al. (2011) affirmed that independent directors are not effective in discharging their duties, talk less of going against other members of the boards. Additionally, Al-Moataz and Hussainey (2012) reiterated that higher number of independent directors on companies' boards leads to less effective board monitoring and equally lower levels of corporate transparency. Michelon and Parbonetti (2012), Janggu et al. (2014) provided evidence of an insignificant relationship between independent directors and improved corporate performance. This suggests that board independence does not seem to play a vital role in improving or determining a firm's extent of performance. Based on the insignificant result observed, managers are perceived as moral agents other than opportunistic individual. As such, their role is to achieve a balance between the interests of diverse stakeholders (Shankman, 1999; cited in Bello and Kamarul, 2017). Therefore, it is presumed that a corporate board with a higher proportion of independent directors will ensure improved board monitoring quality and also work toward satisfying the needs of all stakeholders. Therefore, based on the positive result observed in the extant literature, this study anticipates a significant positive relationship between board independence and corporate performance. This implies that with a higher proportion of independent directors on a corporate board, a company will exhibit more concern and give more attention to corporate performance.

Board Diligence and Firm Performance

Board diligence here refers to the number or frequency of board meetings. Some studies advise against frequent board meetings, while others believe that frequent meetings will enhance the performance of the firm. Ghosh (2007) found a statistically significant impact of board diligence on firm performance, noting that 10% increase in diligence increases the performance of the organisation by 1%. Ntim and Osei (2011) found a positive relationship between board meeting frequency and firm performance in their study on South African listed firms for the period of 2002 to 2007. The board members' capacity for consultation, supervision and management increased because they met regularly through meetings, and this situation resulted in good firm financial performance. Similarly, Irshad and Ali (2015) discovered that independent directors, board meeting frequency and board size exert a positive effect on firm performance measured through coefficients of Q and returns on asset (ROA). Akpan (2015) obtained similar results in his study on 79 listed companies in Nigeria from 2010 to 2012. Johl et al. (2015) categorized board diligence as part of the key corporate governance mechanism that helps in guiding and advising the management towards the pursuit of shareholder interest amidst other control functions. The aforementioned study also detailed the regulation placed on Malaysian companies by regulators. The Malaysian code encourages regular board meetings and regular disclosure of details of frequency as well as member attendance. This is said to increase board effectiveness and also bring the board members into one mind by serving as a medium for disseminating salient information to all board members as regards the progress of the company

However, others believe that Board meeting frequency negatively affects firm performance in the current year because board meetings are costly in terms of time and costs incurred in relation to the meetings (Vafeas, 1999). A study conducted with a sample of 328 Malaysian listed companies from 2003 to 2007 reported that high board meeting frequency causes low firm performance (Amran, 2011). Francis et al. (2012) used a financial crisis as a sample period to examine the extent to which corporate boards affect firm performance. The results showed that board meeting frequency and directors' attendance behaviour and age affect firm performance during a crisis. Unlike previous studies, the study of Horváth and Spirollari (2012) used a sample of 136 firms traded on S&P 500 Index from 2005 to 2009 to examine the relationship between firm performance and several factors related to the characteristics of the board of directors, including board meeting frequency. They found no relationship between firm performance and board meeting frequency. The impact of board meetings on firm performance is an important issue in transition literature. A different view is that board meetings are not necessarily useful because the limited time external directors spend together is not used for the meaningful exchange of ideas among themselves or with the management (Jensen, 1993). Johl, Kaur and Cooper (2013) used financial and non-financial data from companies listed on the Malaysian Stock Exchange market in 2009. The result of the study reported a negative relationship between board diligence and financial performance. The implication of the finding is that less frequent, but meaningful meetings should be encouraged. Frequent meetings will result in diverting organizational resources to less productive activities (Chorsch&Maclver, 1989). This negative relationship is also consistent with Johl (2013) and Lipton and Lorsch (1992).

Board Gender Diversity and Firm Performance

The number of studies on board gender diversity and firm performance from different countries has increased in recent years because of the unique knowledge, information and variety of experiences, skills and networks of gender-diverse boards (Hillman et al., 2007; Miller & del Carmen Triana, 2009). A board with female members is more able to integrate the interest of multiple stakeholders, including employees, customers, suppliers and the communities with the performance-based interests of shareholders (Harrison and Coombs, 2012). This argument is supported by Smith et al. (2006) cited in Vo and Phan, (2013), who considered three different reasons to recognize the importance of female on a board. First, female board members usually have a better understanding of a market in comparison with male members. As such, this understanding will enhance the decisions made by the board. Second, female board members will bring better images in the perception of the community for a firm and this will contribute positively to firm's performance. Third, other board members will have enhanced understanding of the business environment when female board members are appointed. Hence, as a result of women on board, a firm's performance is improved directly and indirectly. Low, Roberts and Whiting (2015) investigated Asian firms in Hong Kong, South Korea, Malaysia and Singapore and found that the appointment of female directors can positively affect the firm's performance. Rao and Tilt (2016) conducted a comprehensive review of prior board diversity and overall corporate performance. Based on the review, Rao and Tilt concluded that the impact of having females on corporate board is likely to be minimal except when there is a critical mass. A growing body of contemporary research on boards and board roles suggested that women directors on board have the potential to increase board effectiveness and firm performance (Carter et al., 2003; cited in Bello and Kamarul, 2017). Women on board facilitate in-depth discussions and alternative perspectives and are more likely to be beneficial in the course of uncertainties and complex decisions.

Conversely, Adams and Ferreira (2009) and Pletzer, Nikolova, Kedzior, and Voelpel (2015) highlighted a negative relationship between female directors and firm performance due to these directors' lack of skills and experiences in monitoring the performance of their firms. Strydom, Au Yong, and Rankin (2016) found that board gender diversity may not affect firm performance in terms of earnings quality. They also found that a higher proportion of female directors on the board of Australian firms corresponds to a lower stock price volatility. They added that female directors might not be employed based on their level of expertise and experiences but rather based on their family relationships (Bianco, Ciavarella, & Signoretti, 2015; Saeed, Yousaf & Alharbi, 2017). In the context of Nigeria, culture plays a pivotal role in restricting women's participation in corporate boards. However, this perception is gradually fading out. As such the significance of gender diversity is nowadays becoming obvious and visible (Şener and Karaye, 2014). An example is the recent measure put in place by the Central Bank of Nigeria (CBN) to boost female representation in board formation in the country. The CBN through its banker's committee imposes mandatory quota target on deposit money banks. The aim is to increase women's representation on companies' boards to 30 percent (Şener and Karaye, 2014). Therefore, considering the recent changes in Nigerian gender diversity policies and also the view of stakeholder theory which supports a positive association between board diversity and firm performance, this study expects women on board to have a positive and significant effect on firm performance.

Financial Performance

Curristine (2005), view performance as the yield or the results of activities carried out in relation to the purposes being pursued. He asserts that it is the degree to which an achievement is being or has been accomplished.

According to Arumona (2017), performance is a general term applied to a part or to all the conducts of activities of an organization over a period of time often with reference to past or projected cost efficiency, management responsibility or accountability or the like. Thus, performance is not just the presentation, but the quality of results achieved. Performance of any organization is directly related to efficiency. In other words, performance will be higher, if it achieves desired output with minimum consumption of input and time. A company is technically efficient when it produces a certain level of output by using a minimum level of physical inputs (Wober, 2002). Performance is used to indicate firm's success, conditions, and compliance. Performance can be seen as the accomplishment of a given task measured against pre-set standards of accuracy, completeness, cost, and speed. Due to its multidimensional meanings, the notion of performance has remained a controversial issue in finance (Prahalatan&Ranjany, 2011). The objective of performance is to strengthen the degree to which organizations achieve the purpose for which they are established. A company's performance can be explored from two points of view: financial and organizational. Organisational performance can be measured using variables such as productivity, customer satisfaction, growth and returns (earning). Financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives is being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

A company's financial performance, though based on management efficiency can be assessed on the basis of its ability to maximize profit, returns on assets and returns on shareholder's equity. Other indicators of a firm's financial performance include: Returns on investment, earnings per share, dividend yield, growth in sales, price/earnings ratio, market capitalization and residual income (Bello &Yunisa, 2010). However, the most widely used tools in measuring firms' financial performance are returns on assets and equity (Gorton & Rosen, 1995). Non-financial indicators used to assess a firm's performance include quality of management, corporate culture, the effectiveness of executive compensation policies, and value creation which is subsumed under sustainable development goal (Tudore, 2012). Financial performance of a company can also be expressed in terms of income generated from its operation, after deducting expenses to arrive at operating profit. Moreover, Lucey (2000), posits that a firm's financial performance can be quantitatively measured in terms of increased profitability and share price. Bello and Yunisa (2010), posits that financial ratios which are useful tools in the decision-making process are used to measure firm financial performance. Company's performance indicators include the financial and non-financial indicators. Financial indicators have been widely adopted, because a company's long-term goal is almost always purely financial in nature (Wang & Song, 2013). Financial performance evaluation indicators directly link up the company's financial goals. They are metrics used to help organizations define and measure progress towards their goals. This study employed four proxies to measure the financial performance of manufacturing firms in Nigeria. These are return on equity, return on assets, return on sales and earnings per share. The approach to their measurement is discussed below, but for the purpose of this study return on equity were employed.

Return on Equity

Return on equity (ROE) measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested (Khatab, Masood, Zaman, Saleem, & Saeed, 2011). It is often viewed as a hybrid measure of firm performance because it incorporates profit which is accounting based and equity which is market based. Efficient management of the operation cost will be best reflected by its rate of return on the equity capital. Since managers are responsible for the operation of the business and utilization of the firm's resources, return on equity is a measure that allows users to assess how well a firm's corporate governance system is working in securing and motivating efficiency of the firm's management (Epps &Cereola 2008). Researchers like Tukur and Abubakar (2014), Aamir and Sajid, (2012) and Kumudinni, (2011) used this accounting measure.

Empirical Review

Olabisi, Kajola, Oladejo, Ojeaga,and Abass (2018) examined therelationship between board characteristics andperformance of quoted Nigerian consumergoods firms. This study adopted historicalresearch design and ten firms were selected fromthe population of twenty-seven Nigerian listedconsumer goods firms, as at 2017, using simplerandom sampling technique. Secondary dataover a period of seven years (2011-2017) was obtained from the annual reports of the selectedfirms. Analysis was performed on data collectedadopting Auto Regressive Distributed Lag (ARDL) Regression and other post estimationtechniques to determine the existence ofrelationship between the variables. The resultsof the study showed significant relationshipsbetween board independence, board diligenceand performance of consumer goods firms ($p<0.05$). However, there is insignificantrelationship between board size, boardcomposition and performance of consumergoods firms ($p>0.05$). The study concluded thatregular board meetings and board independenceplay significant roles in timely decision makingsthat affect the overall firm's objective. Hence,the study recommended a regular boardmeetings and board independence that will beefficient in taking vital decisions that affect thefirm's overall performance.

Arumona and Uyagu (2017), examined whether gender diversity improves financial performance of Nigerian manufacturing firms or not. The secondary sources of data collection were adopted. In analyzing the variable of this study, the panel data methodology was adopted. The return on assets (ROA) is employed as proxy for the performance indices. The study finds that gender diversity of the members of the board has significant effect on the financial performance of manufacturing firms in Nigeria. The findings show that an increase in the proportion of female directors have positive and significant effect on the financial performance of manufacturing firms in Nigeria. We therefore recommend that government should legislate for 35% inclusion of women on all corporate boards in view of the important role-played during boardroom decision making process and dynamics.
Abdu (2016) examined the effects of firm characteristics on the financial performance of quoted non-financial firms in Nigeria. The scope of the study spans elevenyears from 2004 to 2014. Eight hypotheses were formulated,all formulated in null form and two models were formulated using market value and return on investment as the dependent variables and firm characteristics as the independent variables. The research design is quantitativeand panel data and the population of study consisted of 105 non-financial equities quoted on The Nigerian Stock Exchange from 2004 to 2014. Non probability sampling technique was used for the study and using the recommended sample selection chart sizes for two different precision levels, 82 equities were used as sample for the research. The data collected was from Secondary source extracted from annual report and accounts of the sampled companies. A multiple regression analysis using STATA was used to test the hypotheses of the study. The Hausman test conducted indicated that the two models were fixed effect. The study provides empirical insights on firm characteristics and financial performance of the sampled companies. The result of findings showed that for model one, equity-to-total asset, and total assetshave significant effect onmarket value of quoted non-financial firms in Nigeria, and total debt-to-total assets and total fixed assets-to-total assets have no significant effect. For model two, total debt-to-total assets, equity-to-total assets, and total fixed assets-to-total assets have significant effect on return on investment, while total assets have no significant effect on return on investment of quoted non-financial firms in Nigeria.The study concluded that equity-to-total assets andtotal assets are the determinants of market value, and total debt-to-total assets, equity-to-total assets andfixed assets-to-total assets are the determinants of return on investment and firms are encouraged to continue to make more use of these variables in their financing decisions.The study recommends that managers of quoted-non-financial companies in Nigeria should consider the outcome of this research for consideration in their financing decisions. Also, policy makers, money and capital market regulators should implement policies that are favourable to the investor that would continue to ensure increased financial performance of the quoted non-financial firms in Nigeria. Further researches could be carried out using primary data so as to have information from the perspectives of managers on firm characteristics and financial performance.

Theoretical Review

Agency Theory

This view is based on the idea that in a modern corporation, there is separation of ownership (principal) and management (agent), and this leads to costs associated with resolving conflict between the owners and the agents

(Berle & Means, 1932; Jensen & Meckling, 1976; Eisenhardt, 1989). The fundamental premise of agency theory is that the managers act out of self-interest and are self-centered, thereby giving less attention to shareholder interests. In essence, the managers cannot be trusted and therefore there is a need for strict monitoring of management by the board, in order to protect shareholder's interest. The monitoring of management activities is seen as a fundamental duty of a board, so that agency problems can be minimized, and superior organizational performance can be achieved.

Stewardship Theory

Stewardship theory on the other hand takes a diametrically opposite perspective. It suggests that the agents (directors and managers) are essentially trustworthy and good stewards of the resources entrusted to them, which makes monitoring redundant (Donaldson 1990; Donaldson & Davis, 1991; Donaldson & Davis, 1994). Stewardship theory suggests that managers should be given autonomy based on trust, which minimises the cost of monitoring and controlling the behaviour of the managers and directors. The theory considers that manager's decisions are influenced by non-financial motives, such as need for achievement and recognition, the intrinsic satisfaction of successful performance, plus respect for authority and the work ethic.

Resource Dependency Theory

A key argument of the resource dependence theory is that organisations attempt to exert control over their environment by co-opting the resources needed to survive (Pfeffer&Salancik, 1978). Accordingly, boards are considered as a link between the firm and the essential resources that a firm needs from the external environment for superior performance. Appointment of outsiders on the board helps in gaining access to resources critical to firm success (Johnson et al., 1996,). In the resource dependence role, outside directors "bring resources to the firm, such as information, skills, access to key constituents (e.g., suppliers, buyers, public policy decision makers, social groups) and legitimacy" (Hillman *et al.,* 2000).

Stakeholder Theory

Stakeholder theory views "companies and society as interdependent and therefore the firm serve a broader social purpose than its responsibilities to shareholders" (Kiel & Nicholson, 2003). Likewise, Freeman (1984), one of the original proponents of stakeholder theory, defines stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives".

METHODOLOGY

The researchers employed purposive sampling technique to select the Five (5) Quoted agricultural firm (Livestock Feeds Plc, Ellah Lakes Plc, FTN Cocoa Processors Plc, Okomu Oil Palm Plc and Presco Plc.) from the Nigerian Stock of Exchange as at 31st December, 2019. Purposive sampling technique was adopted to ensure that companies with adequate data within the selected years are selected in order to have a balance panel. The study fully relied on historic accounting data sourced from the financial statements and accounts of quoted agricultural sector on the Nigerian Stock Exchange (NSE) for the period of ten years (2010-2019). Ex – post facto research design was adopted. Data was obtained from published annual reports and statement of accounts of quoted companies on NSE. This constitutes the most authoritative and accessible documents for assessing the performance of the affected firms. The choice of the study is guided by the availability of relevant data. In order to examine the effect of board characteristics (independent variables) proxied by board size, board diligence, board independence and gender diversity on firm performance (dependent variable) measured by return on equity (ROE), we specify the following equation can be computed as:

$Y = \beta 0 + \beta X1 + \beta cv + \mu it$.. *(1)*

Where:

Y = Quoted Firm Performance (Dependent variable)

X = Board Characteristics (Independent variable)

CV = Control Variables such as firm size, liquidity and leverages

ß= Coefficient

µit = Error term

Equation 1 can be more clearly defined as:
Quoted Firm Performance = *f* (Board Characteristics) + c.................................... *(2)*
Equation 2 is further expanded by introducing the constructs of Quoted Firm Performance and Board Characteristics, including a control variable, hence formulating equation 3.
Return on Equity= *f (*board size, board diligence, board independence, gender diversity, firm size, liquidity and leverages*)* + c.. *(3)*
The model specification based on regression is:
$ROEit = BS_{it} + BD_{it} + cit$.. *(4)*
$ROEit = BI_{it} + BG_{it} + cit$.. *(5)*
Where-
ROE= Return on Equity is the proxy for measuring quoted firm performance.
BS= Board Size; which is the number of board of directors running the affairs of the company.
BD= Board Diligence; It is the number or frequency of board meetings.
BI= Board Independence; which is the numberof independent directors among the board members.
BG= Board Gender; which is the ratio of male to female among the board of directors.
ß = Coefficient of parameters
µ= Error term, which captures other explanatory variables not explicitly included in the model.
it = time coefficient; i.e., for firm i in year t
The equation (4) was estimated using PanelGeneralized least square with the aid of Stata 13 statistical package.

RESULT AND DISCUSSION

Table 1: Descriptive Analysis Result

```
. summarize ROE BS BD BI BG
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Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	50	.0564	.6406369	-3.6471	1.001
BS	50	9.76	2.55199	6	15
BD	50	4.24	.7969329	3	5
BI	50	.10104	.0809379	0	.222
BG	50	.14658	.098691	0	.333

Source: Stata 13 Result

The results from the analysis of the Return on Equity (ROE) show that the highest Return on Equity of 1.001 and the lowest of -3.6471 with a standard deviation of 0.64%. The mean board size (BS) is about 0.0564 suggesting that firms listed on the Nigerian Stock Exchange (NSE) have relatively moderate board sizes. There is a maximum board size of fifteen (15), minimum board size of six (6) and standard deviation of 2.55, implying that quoted agricultural firms in Nigeria have relatively similar board sizes. The statistics on board independence (BI) indicates that aninsignificant portion (10%) of total board members with maximum of 22%. The board diligence (BD) in terms of board meetings indicates that the number of board meetings ranged from a minimum of 3 to a maximum of 5 with an approximation of 4.24 annually. The mean board gender (BG) is about fifteen (15%) female approximately, maximum board gender diversity is about fifteen (33), minimum gender diversity is about zero (0) and standard deviation of 0.098691.

Normality Test

Table 2: Normality Test

```
. swilk ROE BS BD BI BG

                   Shapiro-Wilk W test for normal data
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Variable	Obs	W	V	z	Prob>z
ROE	50	0.37887	29.211	7.197	0.00000
BS	50	0.93536	3.040	2.371	0.00886
BD	50	0.98512	0.700	-0.761	0.77676
BI	50	0.97853	1.010	0.020	0.49184
BG	50	0.92983	3.300	2.546	0.00544

Source: Stata 13 Result

Data normality test was conducted to ensure that the sampled data does not contain outliers that will produce spurious regression results. The test was conducted using Shapiro-wilk w test for normality data. The result of the test is shows that all the variables proxy for capital structure and financial performance which has prob value that is significant at 5% variables are significant. The result implies that the datasets for the study ROE, BS and BG are not normally distributed while BD and BI are normally distributed. As pointed out in econometric literature, parametric tests like linear regressions are better carried out with data that are normally distributed, and data that deviate from normality have tendency to bias coefficients by extending the non-normality to the residuals (Roberts, 2008).

Correlation Matric

The Pearson correlation analysis matrix shows the relationship between the explanatory and the explainedvariables and also the relationship among all pairs of independent variables themselves. It is useful in discerningthe degree or extent of the relationship among all independent variables as excessive correlation could lead tomulticollinearity, which could consequently lead to misleading findings and conclusions. The correlation matrixdoes not lend itself to statistical inference but it is relevant in deducing the direction and extent of associationbetween the variables. Table 3 presents the correlation matrix for all the variables.

Table 3: Correlation Matric

```
. spearman ROE BS BD BI BG, stats(rho) star(0.05) pw
(obs=50)
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	ROE	BS	BD	BI	BG
ROE	1.0000				
BS	-0.1280	1.0000			
BD	0.2397	-0.0487	1.0000		
BI	0.0852	0.1336	-0.0307	1.0000	
BG	-0.2758	0.4302*	-0.5520*	-0.2932*	1.0000

Source: Stata 13 Result

The researcher carried out a correlation analysis of dependent variable with independent variables in order to answer the hypotheses laid down for this study. The correlation between the dependent variables shows that board size (BS) and board gender (BD) have negative correlation but not significant at 5% while board diligence (BD) and board independence have a weak and positive correlation with the dependent variable Return on equity. From Table 2, it can be seen that all the correlation coefficients among or within the independent variables are below 0.80. This points to the absence of possible Multicollinearity.

Test of Hypothesis

Table: 4 Random Effect Regression Result (Model One)

```
. xtreg ROE BS BD BI BG, re

Random-effects GLS regression                   Number of obs      =        50
Group variable: COY                             Number of groups   =         5

R-sq:  within  = 0.0174                         Obs per group: min =        10
       between = 0.5527                                        avg =      10.0
       overall = 0.0720                                        max =        10

                                                Wald chi2(4)       =      3.49
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.4795
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ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
BS	.0376237	.0477259	0.79	0.431	-.0559174	.1311648
BD	-.1105703	.1522312	-0.73	0.468	-.408938	.1877974
BI	-2.288342	1.245221	-1.84	0.066	-4.728931	.1522472
BG	-1.350306	1.491832	-0.91	0.365	-4.274243	1.573631
_cons	.5871523	.710619	0.83	0.409	-.8056353	1.97994
sigma_u	0					
sigma_e	.63067081					
rho	0	(fraction of variance due to u_i)				

Source: Stata 13 Result

In line with the panel nature of the data used in this study, the random effect regression model shows R^2 within, between and overall, of 1%, 55% and 7% respectively. Within R^2 means that independent variables explain 1% variations in the return on equity in this panel from year to year. Between R^2 indicates that independent variables explain 55% variations in return on equity of the sample studies from firm (cross-sectional unit) to another firm. While overall R^2 shows that independent variables explain 7% variations in the whole panel. The table also shows that the model is fitted as evidenced by the Wald chi of 3.49. Attention will be paid to table 4 to explain each finding in order to support or reject the hypotheses of the research.

Discussion of Findings

Table 4 described that the coefficient of the variable BS was 0.037 with a p-value of 0.431 (>0.05). It can be deduced that board size has a positive and insignificant impact on the performance of quoted agricultural firms which provide support for the hypothesis. Theoretically, findings are not consistent with agency theory that proposes that larger board corporate boards improve monitoring function of the board and accordingly improve firm performance. The implication of the results is that large number of directors in the board has positive impact on the performance of the selected firm. It is therefore advised that board size appropriate for firm size for significant impact should be advocated for. This result was in line with the work of Said *et al.* (2009) that evidenced a insignificant positive relationship between board size and corporate performance. This work advocates that large board size result to ineffectiveness in communication, coordination and decision making. However, more recently, Sadou *et al.* (2017) highlighted that larger boards are more effective and have greater influence over companies' performances. Also, the work of Siregar and Bachtiar (2010) found a non-linear relationship between board size and improved corporate performance. The study noted that a large board would be able to exercise better monitoring, but too large board will render the monitoring process ineffective. As result of the relationship that exists between board size and quoted firm performance as indicated above, the Null hypothesis was accepted.

The effect of board diligence on the performance of quoted firms

Focusing on the relationship between board diligence and quoted firm performance, it can be seen from the table above that there exists a negative but significant relationship. Model 1 of table 4 showed that the coefficient of the variable BD was -0.11 with a p-value of 0.468 (>0.05), At 5% level of significance, it implies that 11% reduction in corporation board meeting will improve return on equity by 5%. This research contributes to discovering the critical role of the Board of director Meetings on quoted agricultural firm performance. Meetings take a large amount of time to prepare for, attend and follow-up on. The board must ensure that their meetings add value to the organization. Then this finding supports the believe that Board meeting frequency negatively affects firm performance in the current year because board meetings are costly in terms of time and costs incurred in relation to the meetings (Vafeas, 1999). A study conducted with a sample of 328 Malaysian listed companies from 2003 to 2007 reported that high board meeting frequency causes low firm performance (Amran, 2011). However, study conducted by Ghosh (2007) found a statistically significant positive impact of board diligence on firm performance, noting that 10% increase in diligence increases the performance of the organisation by 1%. Akpan (2015) obtained similar results in his study on 79 listed companies in Nigeria from 2010 to 2012. Based on the above finding, it can be said that the Null hypothesis is accepted which states that the board diligence has no significant impact on the performance of quoted agricultural firms.

The effect of board independence on the performance of quoted firms.

Table 4 describes that the coefficient of the variable BI was -2.28 with a p-value of 0.06. The results revealed a negative and insignificant relationship between the board independence and quoted agricultural firms' performance. Agency theory, suggests that if companies have a proportion of board members who are independent, this may contribute to better decision-making, help companies to connect with their external environment and enhance their vital resources (Nguyen et al., 2014). The possible reason for negative relationship between the board independence and quoted firm performance could be that not all independent directors are truly independent. A further reason could be that both the role of independent directors in Nigeria and the appointment process differ from what was stipulated from the corporate governance code of conduct. Another reason may be that insiders are the most effective directors because they have more information about the firm than outsiders and thus outside directors must rely on them to make decisions. This result of negative relationship between the board independence and quoted firm performance is supported by the work of Abdullah et al. (2011) affirmed that independent directors are not effective in discharging their duties, let alone of going against other members of the boards. Al-Moataz and Hussainey (2012) reiterated that higher number of independent directors on companies' boards leads to less effective board monitoring and equally lower levels of corporate transparency. Conversely, Huang (2010) concluded that independent directors act as a monitoring mechanism that ensures companies are properly managed by corporate management and also work towards enhancing corporate image and performance. Studies Sharif and Rashid (2014), Kaur et al., (2016) indicated a positive link between board independence and improved corporate performance. In view of the above, we can conclude that the Alternative hypothesis is rejected to give way to the Null hypothesis which states that independence of board members will not have significant effect on the performance of quoted firms.

The effect of board gender diversity on the performance of quoted firms

Table 4 showed that the coefficient of the variable BG was -1.35 with a p-value of 0.365, while The results showed negative but insignificant relationship between board gender diversity and quoted firms performance as measured by return on equity. This may be as a result of small number of female directors in the boardroom. It can be explained by a previous study done by Wang and Clift (2009) where there is no strong relationship between gender diversity on the board and financial performance, and it is assumed that this is due to very few female directors in the sample. Besides, Kramer, et. al. (2008) argued on the effectiveness of having more than one woman in the boards to fulfil the interest of the stakeholders and lead to better decision making. Since most of the companies who have women directors in the sample of this study have one woman only, the benefits of gender diversity might not be fully utilized and thus the result cannot be generalized. This reason is supported by Huse and Solberg (2006) in which the reason for failure to find a significant relation between women directorship and firm performance is due to the benefits of increased gender diversity does not materialize as expected. Therefore, it can be said that the larger number of women in boards could significantly have an effect on the company performance (Smith *et al.*; 2006). As such, this understanding will enhance the decisions made by the board. Second, female board members will bring better images in the perception of the community for a firm and this will contribute positively to firm's performance. Third, other board members will have enhanced understanding of the business environment when female board members are appointed. Hence, as a result of women on board, quoted firms performance is improved directly and indirectly. Low, Roberts and Whiting (2015) investigated Asian firms in Hong Kong, South Korea, Malaysia and Singapore and found that the appointment of female directors can positively affect the firm's performance. Conversely, Adams and Ferreira

(2009) and Pletzer, Nikolova, Kedzior, and Voelpel (2015) highlighted a negative relationship between female directors and firm performance due to these directors' lack of skills and experiences in monitoring the performance of their firms. Strydom, Au Yong, and Rankin (2016) found that board gender diversity may not affect firm performance in terms of earnings quality. They also found that a higher proportion of female directors on the board of Australian firms corresponds to a lower stock price volatility. As a result of the finding above, the Null hypothesis is accepted because board gender diversity has no effect on the performance of quoted agricultural firms contrary to what is supported by the Alternative hypothesis.

CONCLUSION AND RECOMMENDATIONS

The study examined the effect of board characteristics on the performance of quotedagricultural firms in Nigeria. It specifically determined the effect of board size, board independence, board diligence and board gender diversity on firm performance. The study concludes that all the independent variable either positive or negative are statistically insignificant on performance of quoted agricultural firms in Nigeria. Based on the findings of this study, the following recommendations are made for efficient performance of quoted agricultural companies on the Nigeria Stock Exchange:

i. Reduction of board sizes will be critical to the success and survival of corporate listed firms in Nigerian while firms should also increase their size through increase in liquidity and put these to efficient use in order to enjoy economies of scale. The size of the board must not be unwieldy so that company's businesses can be managed effectively and efficiently by the board members.
ii. Firms should make appointment of independent directors to dominate the appointment of inside executive directors so as to enable the firms to maximally reap the benefits of board independence. Also, independent directors are expected to carry out their duties in line with the specifications and directions of revenant Nigerian laws and codes governing their operations.
iii. Attendance of board at various meetings should be scrutinized to determine the level of commitment of the board. Strategic and informed decisions that will improve the performance of quoted firms are expected to be made in the board meetings. Board meetings should be scheduled in such a way that it will be convenient enough for all the board members to be in attendance.
iv. Female participation in the boardroom should be encouraged. The Nigerian government should encourage and promote the idea of gender diversity by implementing policies that will set a minimum number of female directors firms should have. The women named to corporate boards can use their values, experiences and knowledge to add value to the organization. The inclusion of female directors in the boardroom will challenge the male counterpart to be more proactive for performance improvement.

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