



Gender Diversity of the Corporate Board and Firm Value: The Case of Nigeria listed Companies

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Abstract

This study empirically investigates the link between gender diversity (in terms of number of women) of the corporate board and firm value on a sample of 163 companies purposively drawn from the 186 companies listed on the Nigeria stock exchange for a period of 2006 to 2015. The study used purely secondary data, analysed using the Univariate paired sample t- statistics and Multivariate regression analysis. The t- statistics enables the study to compare the mean and standard deviation of two categories of results (the results of firms managed by the female CEO and those with the male CEO) and thus determined whether a statistically significant difference can be observed from the firm value of those two distinct groups. The result shows that firms with significant number of women on the board seem to produce higher firm value. Specifically, the result revealed that firm managed by female CEO produces better value for the firm during the period under consideration than those managed by male CEO. The result holds for all the three variables of firm value (Share price, shareholders' fund and capital gearing). It was also reported that capital gearing and four of the gender diversity variables are negatively correlated. The negative correlation between the capital gearing and gender diversity indicates that the higher the number of female directors the lower the capital gearing or aggression of the board for debit acquisition. The study therefore draws the attention of the Nigeria stock exchange and other regulatory authorities to the need for regulation on gender quota in the listed companies in Nigeria.

Keywords: Gender Diversity, Share Price, Shareholders' Fund, Capital Gearing, Chief Executive Officer

1. Introduction

The relationship between gender diversity of the corporate board and market value of the firm was investigated in this study. Formerly considered as a sociological matter and an issue of image, gender balance and diversity are now popularly considered as a value-driver now in corporate companies. As documented in literature, the case for gender balance in the board room was initiated by Robinson and Dechant (2007) who argue that board composition and characteristics improves board strategic decisions making process, that may have significant influence on firm efficiency, firm performance and firm's perceived market value. Also, Erhardt, Werbel and Shrader, (2003) posits that one germane topic, that aroused intellectual argument and a lack of consensus in the corporate governance debate in relation to the board strategic role, centered on gender diversity, known as the degree and proportion of ethnicity and gender distribution of the company directors.

In a competitive market, the growth rate and some other strategic decision are primary responsibility of the board of director. Therefore, concerted efforts should be made by researchers towards investigating board characteristics and gender diversity due to their perceived important roles in promoting firms' value. A huge amount of research papers have investigated the link between the firm value and proportion of executive directors on the companies' board of directors (Oyerogba et al, 2017), board size, structure and composition (Dezso, Ross, 2012; Oyerogba, Memba&Riro, 2016) and lately, other directors' characteristics like ethnicity and gender (Francoeur, 2017; Robinson &Dechant 2007). However, amongst the important board variables surveyed, knowledge of how gender diversity influence firm value suffers the highest neglect.

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Similarly, unlike many of the European markets, no formal regulations have been put in place in Nigeria either by the government agency or private sector participants to regulate the ratio of male to female directors on the board. For example, in 2006, the Norway government enacted a law for all listed companies that states that the percentage of each gender on the board of director should be at least 40%. The law also emphasize the penalty for noncompliance as compulsory dissolution or hostile takeover (Adams & Ferreira, 2009). Also, as of May 2011, several laws have been passed by Spain, Norway, Iceland and France stating limits regarding gender disparity among the company directors. In like manner, Italy, Belgium, the Netherlands have laws regulating gender balance passed in 2012 and in other European countries gender quotas for boards has received a rapt attention (Ahern & Dittmar, 2012). As reported by Jonas (2015), in Germany, a quota law was passed in 2015. This law requires 30 % of the directors' seats to be occupied by women. The primary aim of this law is to increase the gender equality towards developing the stock market. These regulations and many others serve as a guide in nominating the members of the board in those countries.

Although, it is not yet empirically ascertained whether the higher percentage of women on corporate boards emanating from campaign for increase in female representation yielded better economic results for the firms in those countries as the empirical results has been conflicting and sometimes misleading, yet, there is a need for emerging markets such as Nigeria to ascertain if the inclusion of female directors help strengthen the market value so that a strong recommendation can be made for Nigeria to also embark on this reform. This necessitates the present study. If this is legislated in Nigeria being the largest economy in Africa (Adwally, 2013), rather intense debate will follow in other African countries and beyond. Therefore, strong empirical evidence will be required to serve as a litmus that an adequately diversified board of directors may strengthen firms' understanding of the market that is also diversified in many ways. This may increase innovation and creativity tendency of the firm, improvement in decision making process through consideration of several alternatives.

The general objective of this study is therefore to investigate whether increased ratio of female directors on boards of directors improves firm market value, using information disclosed in the audited financial statement of 163 listed companies of different sizes in Nigeria during 2006 to 2015. Specifically, the study investigates whether adoption of female CEO, female chairman of board, female chairman of audit committee, female chairman of risk committee, female chairman of remuneration committee as well as percentage of female director on board, audit committee, remuneration committee and risk Committee influence the market value of the companies in the sample for this study. Thus, the study hypotheses were formulated in line with these explanatory variables.

Several corporate managers and other advocates of good governance in listed firms believe that a positive link exists between female CEO and firm value (Ahern & Dittmar, 2012; Bohren & Strom, 2010, Goh & Li, 2013). Their arguments focus on the belief that women possess a unique ability in preserving the traditions, values and legacy of any organization (Wie & Xie, 2014). It is also believed that women possess natural leadership skill and they are masters of opportunity management (Bohren & Staubo, 2014). There exist an argument that female managers could be a strong mechanism for penetrating a consumer markets heavily dominated by women (CED, 2012; CAHRS, 2011). Based on this propositions, this study hypothesized that firm with female CEO have better market value than their counterparts.

Secondly, previous evidence from developed economy like the United state of America revealed that women were rarely given opportunity to participate in the boardroom decision let alone being made the chairperson of the board because of the dominance of a powerful group of male directors (Bohren & Staubo, 2014). This indicates that women are being unfairly constrained to a particular level of incompetence without any empirical evidence for that position (Francoeur, 2007; Dyck & Sigles 2004). In contrast, Dezso and Ross (2012) argued that the use of women in leadership position potentially improve the level of accountability and transparency. If a firm is perceived to be transparent, it is not unexpected that there will be higher patronage and thus leading to higher value in the market. In line with this, Isabel, Isabel and Luis, (2009) posit that accountability which implies ability to own up to one's mistake makes people earn the respect of other. This implies that a firm with highly respected board members will likely attract responsible members of the society. It is therefore hypothesized that firms with female chairperson (ether chairperson of the board, chairperson of audit committee, chairperson of remuneration committee, chairperson of risk committee) have higher value in the market.

Lastly, drawing from the Managerial Power theory which emphasizes the power of women in providing a check and balance for good strategic decision in the board room (Durney & Kim 2013), this study hypothesized that *ceteris paribus*, the appointment of female directors into the board increases the market value of a listed company. One argument that has been sustained theoretically (Adams & Ferreira, 2009) and empirically (Campbell & Vera, 2010) is that diversity promotes directors' independence. Generally, persons from different ethnicity, cultural background, and gender, will raise issues that may be ignored by directors from the same ethnic group and gender. Therefore, a more gender sensitive board should be an activist board since non-executive directors with different gender could be referred to as the absolute independent directors (Carter, Simkins & Simpson, 2010).

This paper makes significant contributions to the literatures on corporate governance. First, observed in several articles is a data availability constraints. This has typically limited the analysis to a single sector of the economy in individual countries (Francoeur, 2007; Robinson & Dechant 2007). The small sample size makes it difficult to generalize a statistically significant

effect of gender diversity, especially where the sectors are not homogenous. It is therefore advantageous as this study documents the statistical relationship between gender diversity and firm value for a large sample of 163 listed firms in Nigeria cutting across the nine sectors of the economy for a wider economically significant period of ten years. This study will significantly produce a more representative view of the influence of gender diversity on firm value.

Second, previous studies considered a narrowed aspect of gender diversity such as number of women on the board (Robinson & Dechant, 2007; Baldwin & Richardson 2005), women in management position (Fama & French, 2013; Lone, Huidan, Joana, Petia & Rima, 2016) or women in leadership position (Schwartz-Ziv, 2013). Those studies were advanced through this study by investigating the effect of female CEO, female board chairperson, female committee chairperson and the ratio of female board member to the entire board member on firm market value. That makes this study a frontier on gender diversity in African and beyond. The study also used three different proxies (stock price, shareholders' fund and capital gearing) for the dependent variable which is completely different from what is currently known in the literature.

Lastly, this study employs an empirical design that is rarely used in corporate governance literature, specifically, relationship between gender diversity and firm value. Previous researches extensively adopted a Multiple Ordinary Least Squares (OLS) regression. Rather than conducting a multiple OLS regression in determining the statistical relationship, this study improves on the empirical strategies by using the Paired sampled t-test together with Multivariate regression analysis. The t-statistics enables the study to compare the mean and the standard deviation of two categories of results (the results of firms managed by the female CEO and those with the male CEO) and thus determine whether a statistically significant difference can be observed from the firm value of those two distinct groups. This approach is relatively new in corporate governance research and therefore differentiates this study from the existing literature.

The principal finding of this study is that firm managed by female chief executive officer seems to produce better value for the firm during the period of the study than those managed by male chief executive officer. The result holds for all the three variables of firm value (Share price, shareholders' fund and capital gearing). This suggests that the conventional wisdom that women possess natural leadership skill and they are masters of opportunity management has been supported empirically. In addition to that, the study also found out that the presence of women on the board led to a reduction in share price. Generally, the findings of this study provides evidence that women representation on the board increases the firm's market value significantly. Finally, it was also reported that capital gearing and four of the gender diversity variables are negatively correlated. The negative relationship between capital gearing and gender diversity implies that the higher the proportion of female directors on the board the lower the capital gearing or aggression of the board for debt acquisition.

The study proceeds as follows: The review of related literature was done in section two. The methods and the study variables were described in section three. In section four, analysis of data and interpretation of results was reported prior to the conclusion of the study and recommendations in section five.

2. Literature Review

2.1 Theoretical Framework

Institutional Theory and Gender Diversity

Institutional theory founded by Powell and DiMaggio (1991) may be a good theory that can be employed in analyzing the causes and impact of gender imbalance on the corporate organizations. Institutional theory is a theory that focuses on the more resilient and very deep aspect of social differences and structure (Powell & DiMaggio, 1991). The core of this theory is that institutions moderate societal beliefs and influence organizations' behavior. Institutional forces (frameworks, rules, norms) or in other words social exogititate may contribute to the understanding of the diversity in firms' management and boards. In certain societies where amorphous values such as gender diversity is being promoted, there may be a reflection of such value system and social constructions in the corporate board selection (Oliver, 2018). This made female gender quota less problematic in developed nations than the rest of the world.

Advancing the position of institutional theory on gender asymmetry in the board room, a school of thought that has encapsulated the attentiveness of modern scholars describes the phenomenon of gender diversity through structural factors (Durney & Kim, 2013). As reasoned by the scholars in this category, the structures of the corporate organization and the society generally are responsible for producing and reproducing gender asymmetry in the business world and organizations (Kanter, 2007; Acker, 2012). There is an existence of standards and norms about the qualification of board members. A high degree of education is a prerequisite to becoming a director of big or listed firm in most developed and developing nations. In addition, professional qualification, experience and networks are often considered in appointing directors (Campbell & Vera, 2010). If a company operates within a societal setting that exposes female children to less education like we have in some part of Nigeria, only the men with the required educational and professional competence will dominate the board.

However, institutional theory framework presents several notable exceptions to the level of incompetence that women in corporate world have been subjected to and provide reasonable arguments to promote board gender diversity (Bohren & Staubo, 2014). For instance, a woman director can serve as a viaduct to important regions in the external environment, which may result in greater accessibility to important opportunities. Also, a female director sometimes have

access to distinctive information which may probably ameliorate board oversight functions to the managers and help in stronger strategic decision-making (Dezso & Ross, 2012). A female director acting as an outside director and non-business experts may help to bring diverse perspectives and uncommon approaches to problem solving.

2.2 Prior Evidence

Gender diversity has been widely defined by various scholars from various fields of human endeavor. There seems to be great similarities in the ways and manner by which these scholars viewed gender diversity. However, it is very clear that many of the definitions were based on the discipline of the individual scholars. For instance, from a sociological point of view, Bohren & Staabo, (2014) defined gender diversity as the provision of equal conditions and leverage for both men and women to actualize their full potential, while promoting their human rights. A behavioural scientist on the other hand, Dezso and Ross (2012) perceived gender diversity as the creation of an atmosphere of equality for economic, cultural, social and political participation of men and women in a democratic society. To a managerial scientist, Jonas, (2015), gender diversity has to do with men and women being full partners in a business organization, and assuming equal responsibility for success and otherwise of a business entity. Based on these definitions and many others, it is obvious that there are several proxies for gender diversity and these proxies have different degrees of influence on the other industry variables. Therefore, many scholars have endeavored to investigate the influence of gender diversity variable on different organization performance variables.

A study by Lone, et al (2016), investigated the relationship between gender diversity in firm's managerial position and financial performance. The study used secondary data from 2 million companies' observations in Europe. The data were analyzed using Pearson correlation coefficient and pooled regression analysis. The results of the data analysis showed a positive relationship between gender diversity and return on assets. The positive relationship was very significant, firstly, in industries in which ladies dominated the work force than those dominated by men (i.e food and beverages and service sector). Second, the positive relationship was also very significant in sectors in which complementarities skills and critical analysis were main success factors (that is telecommunication and energy sector).

Similarly, Ray and Duc, (2014) studied the influence of board gender diversity on financial performance of the French public companies. The study adopted the use of quartile regression on the panel data obtained for the period of 3 years (2009-2011). The potential impacts of female representation at different managerial capacities of the companies were captured in the study through the quartile regression analysis. The paper uncovered that the effect of board gender equality on the financial performance was similar for various forms of analysis conducted depending on the financial performance measures adopted. Precisely, board gender equality has a negative influence on the Tobin's Q whereas the influence on the return on assets was positive and significant. In conclusion, they reported that with the use of multiple regression analysis and fixed and random effect models the influence of board gender diversity on financial performance may be stronger.

Another related study by Christopher (2014) focused on determining the impact of gender diversity of the board of directors and executive compensation on the financial performance of the companies quoted on the Indian National Stock Exchange (NSE). The findings produced evidence that the inclusion of women on the board of directors' list does not have a significant impact on firm performance, measured using Return on Equity. There was also an analysis of industry effect and size which produced a mixed result. Specifically, industry dummies have a significant impact on financial performance whereas, firm size has no significant impact on return on equity. Other financial performance proxies like Tobin's Q, return on capital employed and firm risk proxies like solvency, Leverage, and Current ratios also produced results that are not statistically significant. The result of the pay discrepancies among directors suggested that female directors earn about 1.19% lower than the male directors in executive compensation but are compensated with a 0.426% increase in the number of shares received. The finding revealed that this variable did not have a significant impact on the financial performance.

Similarly, the impact of diversity of board gender on company's financial performance was investigated by Jonas (2015). The study obtained data from the 55 limited liability companies quoted on the Norwegian Stock Exchange for a period of 8 years (2006-2013). The study adopted unbalanced panel data regression analysis to determine the impact of gender diversity of the board on financial performance. The study also investigated the possibility of the relationship being moderated by the percentage of independent directors on the board, interlocking directorship and director's literacy. The result of the data analysis shows that there was no significant effect of gender diversity on the financial performance. There was also a negative relationship between gender diversity and Tobin's Q. The result also revealed that board independence doesn't have a significant moderating effect on the relationship between gender diversity and financial performance of the quoted companies in Norway.

The work of Isabel, Isabel and Luis (2009) critically investigated the impact that gender diversity could have on the corporate financial performance of the Spanish listed companies. Specifically, the authors tested the impact of women in managerial positions, female block stockholders, and female interlocking directorships on certain accounting ratios, such as market value, shareholders' fund, acid test ratio and technical efficiency. The study obtained data from the Madrid stock exchange for a three-year duration (2004-2006). The result shows there was no significant difference in the corporate financial performance of those that practice gender balance and those without gender balance. The result also revealed that

gender equality does not have significant positive impact on the corporate financial performance of the listed companies in Spanish.

Furthermore, Carter, Simkins and Simpson (2003) examine the correlation between the gender diversity of the board and firm value of the companies listed on Romania stock exchange. The specific variables considered in this study were the quota of women, African women representation versus Americans women, Asians women on the board of directors. The study used both descriptive and inferential statistics to unveil the form of relationship that seems to exist between the gender diversity of the board and the firm value. The study controlled for the effect of some firms important variables such as size of the company, industry type, and corporate governance mechanisms. From the result of data analysis, they observed that women quota have significant positive correlation with the firm value. They therefore concluded that gender diversity of the board have significant correlation with the firm value of Romania listed companies. It was also discovered that there was significant increase in women quota with the increase in firm size.

3. Research Methods and data

To ascertain the extent to which the firm market value is influenced by gender diversity, a quantitative research design was adopted in this study. Conyol (2006); Oyerogbaetal (2016) perceived that a quantitative research design enables a research to determine the impact of one variable on the other through an inferential statistical analysis. Since, the main objective of this research is to determine whether a significant relationship exist between gender diversity and firm market value, this design can be considered adequate. The sample for this study consists of 163 purposively selected firms that were quoted on the Nigeria stock exchange for a period of 10 years starting from 2006 to 2015. Although the plan was to use the entire population of the listed companies in Nigeria which is 186 listed companies in Nigeria, only 163 met all the selection criteria and therefore included in the sample for the study. Out of the twenty-three companies not included in the sample, the data collection process shows that 17 companies have inadequate disclosure about their board in the financial statement and were therefore excluded in the sample. 4 companies have qualified audit reports which brings to question the reliability of the information disclosed in their financial statement. The remaining two companies excluded in the sample were those whose financial statement cannot be accessed electronically on-line.

3.1 Board Gender Diversity

The data for this study are primarily from the audited account and financial statement of the companies listed on the Nigerian stock exchange. The code of corporate governance (2011) of the Nigeria security and exchange commission (SEC) mandates all the companies listed in Nigeria to provide detail disclosure of the information about the board of directors in the published annual financial statement. The gender diversity was proxy with female CEO, female chairperson of board, female chairperson of audit committee, female chairperson of risk committee, and female chairperson of remuneration committee as well as female representation on the board, remuneration committee, audit committee and risk Committee. To measure the variables quantitatively, binary dummy of 1 and 0 were used. The companies with female CEO were scored 1 point while those with male CEO were scored zero. The same procedure was carried out for the chairmanship position. To measure the female representation on the board, the ratio of female to total member of the board and committee were calculated.

There are two important reason for using this approach. First, the study is interested in determining the impact of gender diversity on firm value, which requires that the value of two distinct firms managed by different gender be determined as well as the role of oversight functions rather than regressing the ratio of female director against the market value. Economic theories provides certain explanation on how gender diversity in senior management position and board may benefit firms, which includes the use of oversight committee. Second, existing literature has been heavily criticized for not controlling for heterogeneity of the data used for the study (Dezso& Ross, 2012; Khan &Vieito, 2013). Therefore, by dividing the data into different groups, one can ensure a more homogeneous sample for the study.

3.2 Firm Value

As previously used by Adwally, (2013), Francoeur, (2007) and Campbell and Vera, (2010), this study adopts three proxies for firm value such as stock price, shareholders' fund and capital structure. The stock price was measured as the market price of the share of each company. As posited by Robinson and Dechanty (2007), market value provides a more reliable information in firm valuation because it is the current price that is required to purchase a unit of the business regardless of what is stated as the book value. It also possesses several other advantages over the rest of the metrics for firm valuation such as book value, enterprise value, discounted cash flow etc. First, market value is mainly the figure the newspaper, investors and analysts refers to when they analyze the business value (Dezso& Ross, 2012, Kim, Song & Zhang, 2011; Oyerogbaetal, 2017). Another advantage of using market value is that a firm can study the sales cycle of an item and know when you can get the top price for it (Conyol, 2006). Market value can also be used in determining the efficiency of the board and management by determining the difference between the book value and the market value of the share (Wie &Xie, 2014). Obviously, when the market price is higher than the book value, the firm would be seen to have made profit for the owners of the company.

Similarly, from the agency theory point of view, directors and managers have an important responsibility to ensure that they manage the company in the best interests of business owners. Therefore, the criteria by which the firm value is determined in this instance simply means how the management has multiplied the shareholders' fund (shareholder equity) of the firm (Martins, 1996; Bohrem and Staubo, 2010). Shareholders' equity also known as the company's net worth is equal to a firm's total assets less the firm's total liabilities (Kothari, Leone & Wasley, 2005; Smith, Smith & Verner, 2005). It can also be determined when all reserves (capital reserves, revenue reserves, share premium and retained earnings) are added to the ordinary share capital (Ahern & Ditton, 2012). Apart from the theoretical consideration, this measure of firm value was adopted for two major reasons. First, shareholders' fund is mostly the accounting indicator applied by the ratio analysts in determining the financial well being of a firm. Shareholders' equity is a representation of a firm's net value. In other words, it is the amount that goes back to the shareholders during dissolution where all the firm's assets will be liquidated and all debts settled.

Shareholders' fund may be either positive or negative. When a company shows a positive shareholders' fund, it implies that the company has sufficient assets to pay all liabilities. In the case of a negative shareholders' fund, the liability side of the statement of financial position is higher than the asset. Generally, a firm that has a negative shareholders' fund is classified as a dangerous investment centre, because either the firm's asset total is very small or the firm's liability total is very large. In such a situation, the firm has more liabilities than what the firm's current assets can settle, thereby putting the firm at risk of loan default and bankruptcy. This measure is very important in a time like this that every investor is very conscious of the safety of his investment.

Secondly, it is a transparent and verifiable measure of firm value. Most of the data required to calculate a firm's shareholders' fund are available on the firm's statement of financial position. The shareholders' fund computation requires the determination of a firm's total assets and total liabilities, including the long term assets and short-term assets. Once the figure of the long and short term assets are added, computation of shareholders' fund is simply a matter of subtraction. All this information is part of the regulatory disclosure in the financial statement of a listed company in Nigeria. Therefore, this study used the natural logarithm of the shareholders' fund disclosed in the financial statement of the companies selected as a measure of firm value.

Furthermore, capital gearing, determined as the ratio of debt to equity, was also employed as a proxy for firm value in this study. The capital structure mainly means a company finances its general activities together with its growth by using various funding opportunities (Agrawal & Knoeber, 1996). According to Adwally (2013), since a company's capital structure is a combination of short term debt, long term debt, preference share, and ordinary share capital, a firm's ratio of long and short term debt is used in analyzing the capital structure. Therefore, when capital structure is being referred to by financial analysts, they are mainly talking about a firm's debt-to-equity (D/E) ratio. This ratio gives an indication of how risky investing in a firm could be.

Thus, the first advantage of using capital gearing as a measure of firm value emanates from the management perspective to the use of debt and equity. Francoeur (2006) posits that management styles to debt are either conservative or aggressive. In practice, conservative management is less inclined to the use of debt in maximizing firm profitability (Erhardt, Weiber & Shrader, 2003). This implies that aggressive managers can grow a company faster, with the use of significant amounts of debt which may result to an increase in earnings per share (EPS) of the company. Therefore, keen attention is paid to this ratio when an investment decision is being made. Secondly, it is not strange that listed firms do not face difficulties raising capital when there is a significant growth in sales with strong earnings. Therefore, this ratio can also be used by investors in determining the growth rate of a firm and also forecast its future growth pattern for investment decision.

3.3 Data Analysis

As earlier discussed, the general purpose of this paper is to determine whether an increased ratio of female directors on the corporate board improves firm value. The study relies heavily on information disclosed in the audited account and financial statement of 163 listed companies of different sizes in Nigeria during 2006 to 2015. Specifically, this paper ascertained whether the use of female CEO, female chairman of board, female chairman of audit committee, female chairman risk committee, female chairman of remuneration committee as well as ratio of female director on board, audit committee and risk committee influence the market value of the companies in the sample for this study.

Therefore, to empirically investigate the relationship between the two variables, descriptive and inferential statistics were employed. The descriptive statistics in this study were mean, standard deviation, median, maximum, and minimum for the variables. Inferential statistics on the other hand are Paired sample T- statistics and Multivariate Regression. The choice of T- statistics is borne out of the fact that it enables the comparison of two different means and standard deviation so as to determine the mean difference and the level of significance through the probability value.

The main hypothesis formulated in this study is that, all things being equal, firms with appropriate gender balance have better market value in terms of stock price, shareholders' fund and capital structure. Therefore, to test this hypothesis, Univariate analysis of the mean of stock price, shareholders' fund and capital structure for firms with different board gender

composition was computed. Specifically, the sample was divided into two sub-groups based on the composition of the board. The firm with female CEO formed a group while the firm with male CEO represented another group. The natural logarithm of the stock price, shareholders' fund and capital gearing for those two groups was used to determine the mean value and the standard deviation which was then used to compute the t- statistics in order to determine if a significant difference exists in the firm value for the two groups.

Accordingly, the full sample for the chairmanship position of the board and the board committee was also separated into two sub-samples based on whether the committees were headed by a woman or man. The natural logarithm of the stock price, shareholders' fund and capital structure for those two groups was also determined. The mean and standard deviation were therefore computed so as to compute the t statistics. However, before accepting the data for inferential analysis, certain diagnostic tests were conducted to determine the suitability of the data for analysis. The diagnostic tests conducted are normality test, autocorrelation test, homoscedasticity and multicollinearity test.

Normality as reported by Doms, Mark and Jensen (1998) involves constructing a model in-between the data elements and their associated target is simple if the group of figure being predicted is compact. In otherword if the distribution of the variable targeted is skewed, meaning that the data contained several small values and little big values, it is important to transform the variable by taking its natural logarithm. Although, the data for this study is expected to be normal owing to the fact that the natural logarithm of stock price, shareholders, fund and capital structure is being used, however, the study computed One-Sample Kolmogorov-Smirnov Test to ascertain that data for the study are from a normally distributed sample. The choice of this test was based on the fact that in Kolmogorov-Smirnov test, the distribution of the statistic does not depend on the cumulative distribution function being tested and the test is exact (Kothari & Garg, 2014).

In like manner, the test for autocorrelation otherwise known as independence test was done with Durbin-Watson statistic. This is because of unique characteristics of Durbin-Watson statistic which includes the potential to test the null hypothesis over a long range of lag period (Kothari & Garg, 2014). Homoscedasticity on the other hand was tested using Breusch-Pagan statistic. Unlike Harvey-Gofrey test that assumes the error variation to be an exponential function of one or more variable, Breusch-Pagan test assume the error variance to be a linear function of one or more variable and since the main objective of this study is to establish whether there is a linear relationship between gender equality and firm value, this test can be considered appropriate. Hence the statistical model for the study is stated as follows:

$$SP_{it} = \beta_0 + \beta_1 FCHIR_{it} + \beta_2 FCEO_{it} + \beta_3 FBOD_{it} + \beta_4 FDAU_{it} + \beta_5 FDRI_{it} + \beta_6 FDRE_{it} + \epsilon_t$$

$$SF_{it} = \beta_0 + \beta_1 FCHIR_{it} + \beta_2 FCEO_{it} + \beta_3 FBOD_{it} + \beta_4 FDAU_{it} + \beta_5 FDRI_{it} + \beta_6 FDRE_{it} + \epsilon_t$$

$$CG_{it} = \beta_0 + \beta_1 FCHIR_{it} + \beta_2 FCEO_{it} + \beta_3 FBOD_{it} + \beta_4 FDAU_{it} + \beta_5 FDRI_{it} + \beta_6 FDRE_{it} + \epsilon_t$$

Where:

SP_{it}= Share price in time t

SF_{it}= Shareholders' fund in time t

CG_{it}= Capital gearing in time t

FCHIR_{it} = Female chairman in time t

FCEO_{it}= Female chief executive officer in time t

FBOD_{it} = Female board of director members in time t

FDAU_{it} = Female directors in audit committee in time t

FDRI_{it} = Female directors in risk management committee in time t

FDRE_{it} = Female directors in remuneration committee in time t

4. Results and Discussion

4.1 Diagnostic Test

Test for Normality

Majority of the statistical test such as regression analysis, Pearson movement correlation analysis, one sampled *t* tests, as well as analysis of variance, that are broadly classified as parametric tests, requires that assumption of normality is validated before data can be accepted for further statistical analysis. This means that the populations that produced the sample is normally distributed. This assumption is very important when reference interval for variable is to be constructed. The Normality and the rest of OLS assumptions should not be taken with levity, because if this assumption is violated, it is usually difficult to draw valid statistical conclusion. This study therefore checked for normality of the three measures of firm value (stock price, shareholders' fund and capital structure) used in the study using Kolmogorov-Smirnov Test.

The Kolmogorov-Smirnov test (simply refers to as the K-S test or one sample Kolmogorov-Smirnov test) is a non-parametric test which ascertain whether data sample is drawn from a particular distribution, i.e., uniform, normal, exponential or poisson distribution. It is mainly used in testing the Univariate normality assumption through comparison of the observed

cumulative distribution of scores with the theoretical cumulative distribution for a variable that is normally distributed. When this test is conducted, the rule of thumb is that if the p-value is higher than 0.05, H_0 is not rejected and H_{11} is rejected, but if the p-value is not upto 0.05, H_0 is not accepted and H_{11} is not rejected. The results obtained for the three variables, stock price, shareholder's fund and capital ratio are 0.539 (0.371), 0.862 (0.453) and 0.719 (0.285) respectively. The figure in parenthesis represents the p-value. The results imply that the null hypothesis should not be rejected, indicating that normality assumption was not violated. It means that the data can be used for regression analysis.

Table 1: Test for Normality

		Stock Price	Shareholders' Fund	Capital Ratio
N		1630	1630	1630
Normal Parameters	Mean	0.867742	15.214332	0.282695
	Std. Deviation	1.999751	2.557411	0.035577
Most Extreme Differences	Absolute	0.414	0.067	0.188
	Positive	0.377	0.054	0.152
	Negative	-0.412	-0.058	-0.164
Kolmogorov-Smirnov Z		0.539	0.862	0.719
Asymp. Sig. (2-tailed)		0.371	0.453	0.285

Test for Autocorrelation-Durbin Watson Statistics

The test for autocorrelation was conducted in this study to ascertain whether residuals are uncorrelated across time. One of the assumptions of ordinary least square requires that residuals should not be correlated across time. Therefore, Durbin Watson statistics was conducted in this study to determine whether there is no serial correlation in the data. The null hypothesis was that no first order serial /auto correlation exists in the data for the study. The results presented in table 2 indicates that the null hypothesis of no autocorrelation was not rejected and that residuals are uncorrelated across time (p-value=0.007, 0.013 and 0.009).The result also implies that residuals were independent from each others. This procedure was repeated for all the three dependent variables and the result in table 2 also suggests an absence of serial correlation in the data for the statistical analysis.

Table 2 Durbin Watson Statistics for Autocorrelation

Variables	D.W Statistics	P-Value
Stock Price	2.097558	0.007
Shareholder' Fund	2.194862	0.013
Capital Gearing	1.978222	0.009

Homoscedasticity Test for Firm Financial Performance

In statistics analysis, a vector of randomly selected variable is homoscedastic if all the associated random variables possess an equal finite variance. The Homoscedasticity assumption provides simplified computational and mathematical treatment. Serious violation of Homoscedasticity assumption (assuming a distribution of data is homoscedastic when in reality it is heteroscedastic) will results in over-estimating the goodness of fit of the pearson coefficient. Therefore, Homoscedasticity test was conducted to test for variance in residuals in the OLS regression model estimated for this study. If equal variances of the error term exist, we have a normal distribution. Lack of an equal level of variability for each value of the independent variables is known as heteroscedasticity. The study adopted the Harvey-Goffery test developed by Harvey and Goffery (1973) so as to test for Homoscedasticity in this OLS regression model.

The rule of thumb is that if the p-value is greater than 0.05, H_0 is accepted and H_{11} is rejected, if the p-value is less than 0.05, H_0 is rejected and H_{11} is accepted. The result of the test is shown in table 3, which indicate that the test statistic for stock price was 2112.4388 with a p-value of 0.997. Since the test -Statistic is small with the p-value greater than 0.05, the null hypothesis was accepted and concluded that the data was homoscedastic. Also for the other two proxies for firm value, shareholders' fund and capital gearing, the test statistics results were 416.8665 and 992.3418 with a p-value of 0.912 and 0.782 respectively. Based on the above results, it can be concluded that the data were not heteroscedastic and can be used for statistical analysis.

Table3 Homoscedasticity Test for Firm Value Variables

Variables	Test Statistic	Degree of Freedom	P-Value
Stock Price	2112.4388	5	0.997
Shareholders' Fund	416.8665	5	0.912
Capital Gearing	992.3418	5	0.782

4.2 Descriptive Statistics

Table 8 reports the descriptive statistics for the dependent variable and independent variables. The table gives the mean, standard deviation, minimum, maximum and the number of observation for the for gender equality variables such as board chairmanship, female directorship on the board, female representation in the audit committee, risk management committee and remuneration committee as well as proxies such as stock price, shareholders' fund and gearing ratio which represent the firm value. As can be seen in column 1 of table 8, the mean of chairmanship position stands at 1.63. The maximum and the minimum value were 3 and 0 respectively which implies that majority of the firms neither have female CEO nor female chairperson of board, female chairperson of audit committee, female chairperson risk committee, and female chairperson of remuneration committee. This variable was measured using a binary dummy which assigns 1 mark each to a company with female chairman of the board and 3 other chairmanship positions such as female chairperson of audit committee, female chairperson risk committee, and female chairperson of remuneration committee and 0 marks to the opposite. This brings the total score obtainable to 4 marks. The mean of 1.63 therefore implies that majority of the firms were yet to be sensitive to gender diversity campaign for the listed firms. Also, the minimum value of zero suggests that certain firms do not have female director in any of the chairmanship position. Specifically, 39 firms, majority of which were found in the manufacturing sector do not have female director in any of the chairmanship position which represents a high level of dominance by the male counterpart in Nigeria listed companies.

In column 2, it is notable that the average of female director on the board was about 19% which is relatively lower than 30% obtainable in some other emerging markets. The percentage also varies widely from a high of 33% to a low of 7% suggesting a high level of marginalization or gender imbalance on the board of the listed companies in Nigeria. One possible reason for this gender imbalance however may be the female attitude to participation in the stock market since voting into board position is done based on the amount of stock holds by individual shareholder.

With regards to audit committee, as seen in column3 of table 8, on average the representation of female director is about 29%. It was also observed that the population of female director on the board ranges from 16% to 30%. The result that produced a mean of 29% and maximum number of 30% indicates that majority of the sampled companies scored closed to 30% which is about one third of the total size of the committee. Among all the three committees investigated, remuneration committee enjoys the best representation of female director with a mean of 47% and a range of about 36% to 55%. The selection of larger percentage of female directors into the remuneration committee attests to the perceived believe of women's prudence in handling finances. The proportion of female director in risk management committee produced a standard deviation of 1.56, indicating that the data for this variable varies widely across the sample.

Table 4 Summary Statistics for Independent and Dependent Variables

	Mean	Std. Dev	Min.	Max.	No of Obs.
CEO Position	0.38	0.07	0	1	1630
Chairmanship Position	1.63	0.13	0	3	1630
% of Female Dir on the Board	19.24	0.85	7.25		33.33 1630
% of Female Dir in Audit Commit	28.85	1.25	16.17		30.29 1630
% of Female Dir Risk in MGT Commit	35.50	1.56	20.00		42.86 1630
% of Female Dir in Remun. Commit	47.35	0.93	36.36		54.55 1630
Stock Prices	11.80	2.28	4.60		162.70 1630
Shareholders' Fund	317.00	1.74	133.00		981.00 1630
Capital Ratio	1.84	0.47	0.82		2.59 1630

4.3 Inferential Statistic

Univariate Analysis

In this section, the study tests the influence of board gender diversity on firm value applying six varied measures of gender diversity as derived from Agency theory and Resource dependency theory. One major assumption in agency theory has to do with the role of the company's directors in controlling and monitoring managerial activities (Adams & Ferreira, 2009). The rationale for gender diversity according to agency theory is that female directors will bring different perspectives to critical issues, which may in turn help in resolving biases in information dissemination in strategy formulation and problems solving (Drago, Millo, Ricciuti&Satella 2011; Duchin, Matsusaka&Ozbas, 2010). Female directors may likely raise more questions than the male directors counterparts (Carter et al., 2003). Adams and Ferreira (2009) and Faleye, Hoitash&Hoitash (2011) suggest that gender equality may have an impact on firm value creation because female directors might be a very active and tougher monitors.

The first gender diversity variable investigated was the chief executive position. The study specifically investigated whether firm managed by female chief executive officer are significantly more likely to create more value for the firm than those managed by male chief executive. This was achieved by separating the firms into two categories vis-a-vis their chief

executive officer. The study therefore determines the mean of their firm's value. Our result in column 1 of table 9 suggests a significant difference in the value of firms managed by male chief executive and those managed by the female chief executive. Precisely, a firm with female chief executive director seems to perform better than those with male chief executive director. The t- statistics and p-value were 2.88 (0.000), 2.61 (0.001) and 2.17 (0.006) for stock price, shareholders' fund and capital gearing respectively which implies that the significant difference exists at 5% level for all the three measures of firm value.

Previous literature produced mixed results on these variables. A study by Schwartz-Ziv (2013) revealed that 86% of the chief executive officers perceived female representation on the board as important for a business organizations but did not recommend them for chief executive position. Their arguments centre on the fact that majority of the female directors are mostly non-executive directors from non-corporate field. Therefore, they may likely possess the necessary non-managerial skills like human resources, communication, public relation and legal, rather than the line functions of operations, like their male counterpart. Similarly, Easterwood, Ince and Raheja, (2012) argued that due to glass ceiling, many female have been denied opportunity for practical experience in the corporate organization, thereby, reduced their role to non-executive directors. On the contrary, Erhardt, Werbel and Shrader (2003) suggest that, on the average, female board chief executive is younger than her male counterpart, and so the firm benefits from infusion of new ideas and approaches to deliberations. However, recent studies by Faleye, Hoitash and Hoitash (2011) and Farrell and Hersch (2005) did not find significant relationship between women chief executive and shareholder returns. Therefore, this result supports Denis, Diane and McConnell (2003).

Consequently, the study goes further to confirm the importance of female representation on the board. This was achieved by dividing the sample into two sub-groups based on the median value of the percentage of female director on the board. The median value was 23.85. Eighty companies scored above the median value while seventy-four companies scored below the median value. The nine companies that score the median value were removed from the sample for this particular analysis. The mean value for the stock price, shareholders' fund and capital gearing was then computed and subsequently subjected to t-statistic. The result for the capital gearing produced a gearing ratio of 0.91% for those above the median value which is less than 1.24% calculated for those below the median value which implies that firm with high percentage of female members on the board are lowly geared. It can therefore be inferred that firms govern by a board with higher proportion of female directors have higher value in terms of capital gearing.

This result can be interpreted in the light of Hofstede's Model which perceived women as risk averter because of their low tolerance for uncertainty (strong uncertainty avoiders). There is an undocumented belief that women seems to be more disturbed with debt issue than men (Claessens, Stijn & Joseph 2002) and that women may decide to convert part of their personal welfare package in reducing the firm debt while men do not (Shaefer, Song, & Shanks 2013; Lyons & Fisher 2006). These findings led to a conclusion that the low gearing of those firms with higher number of female director is attributable to the influence of female directors in financing decision. The other two variables for firm value revealed a statistically significant difference for the two groups with a better results coming from the group with larger female directors. Jackling and Johl (2009) find a strong positive relationship between gender balance and financial performance that supports evidence from this analysis.

With respect to the female representation in audit committee, Terjesen, Sealy, and Singh (2009) pointed out that human capital theory emphasizes the importance of managers' educational, experience, and skills in growing an organization and that gender differences may result in a company having unique board members to serve in different board committee. If human capital of corporate directors is influenced by gender, it is reasonable to hypothesize that firms with higher percentage of female members in audit committee have better value than the others. To this end, the sample for the percentage of female directors in audit committee was divided into two along the median value for the data. The mean of the firm value for the two groups was then obtained separately, compared and subjected to t-statistics. The result in table 9 shows a significant difference for the shareholders' fund and gearing ratio of the two groups which implies that firms with higher number of female members in audit committee out performed those with low number of female members in audit committee. This was supported by a t-statistics of 2.86 and 3.51 for shareholders' fund and capital gearing respectively.

The possible explanation for this result is found in agency theory. The board function of monitoring and controlling done through the oversight committees (audit committee) of the board is a fundamental concept from agency theory (Jackling & Johl, 2009, Oyerogba 2018). Carter, Simkins, and Simpson (2003) posits that a more diverse board should be a good monitor for managers since gender diversity is meant to increase board independence. Board independence on the other hand increases firm value. The t-statistics for the third measure of firm value however revealed that there is no significant difference in the share price of firm where female directors are adequately represented and those without adequate representation of female director, a position earlier reported by Terjesen, Sealy, and Singh (2009).

Another gender diversity variable investigated in this study is the presence of female directors in risk management committee. According to Sudarat (2006), in Oyerogba, Alade, Idode and Ogungbade (2017), non-executive directors, especially female and independent ones, are a mainstay of good governance. Their presence on the board forms a balance with executive directors to provide a check, in ensuring that an individual person or group will not unduly influence the decision of the committee. Also, the committees' independence will enable them to function objectively and exercise independent assessment

regarding their responsibility in a situation where there is potential conflict of interest. This in turn will potentially improve the stakeholders trust and confidence in the firm. The result for this variable in table 9 suggests that the groups that scored above the median value (that is those with adequate number of female directors in risk management committee) have higher market value across the three measures of firm value. The result disagreed with that of Ray and Duc, (2014) who examined the relationship between board gender diversity and firm value from a dynamic perspective through the use of quintile regression and reported an insignificant relationship between the gender diversity and market to book value ratio. It however supports the findings of Carter, Simkins and Simpson (2003) that examine the relationship between board diversity and firm value for Fortune 1000 firms.

Lastly, the study presents the *t*-statistics of differences in means for firms with high and low levels of women representation in their remuneration committee. In this study, low women were defined as those firms that falls below the median value for the percentage of female directors in risk committee. High women are those who scored above the median value. The study obtained a *t*- statistics of 8.77, 5.52 and 1.47 for the share prices, shareholders' fund and gearing ratio respectively. The result implies that companies with higher female members in the remuneration committee were found to exhibit more favorable values in terms of share prices and also provide stronger benefits to their principal in form of shareholders' fund. On the other hand, the third variable showed a different result in that larger proportion of female representation was associated with high gearing which is an indication of poor firm value. Similar findings were revealed by Andres & Vallelado (2009) that larger women were less efficient in monitoring and create less value for a firm.

Table 5 Univariate Results

	FEMALE CEO			MALE CEO			MEAN DIFFERENCE			T-STATISTICS		
	SP	SF	GR	SP	SF	GR	SP	SF	GR	SP	SF	GR
CHAIR	13.65	6.56	0.84	11.32	9.52	2.92	-2.33	2.96	2.08	2.88	2.61	2.18
CEO	5.25	11.44	1.13	12.70	10.63	1.89	7.45	0.81	0.70	3.71	1.29	0.68
	BELOW MEDIAN			ABOVE MEDIAN			MEAN DIFFERENCE			T-STATISTICS		
FBOD	13.17	7.95	1.24	17.48	10.84	0.91	4.01	2.89	-0.33	6.34	2.37	1.22
FDAU	9.78	9.04	0.59	11.44	6.75	1.74	1.62	-2.29	1.15	1.93	2.86	3.51
FDMI	14.17	5.35	1.01	22.61	6.98	1.59	8.44	1.63	0.58	12.05	1.98	2.07
FDRE	2.23	8.13	1.35	18.25	7.12	0.94	6.02	4.89	0.41	8.77	5.52	1.47

4.3.2 Multivariate Analysis

Table 10 to 12 reports the multivariate regression results for all the three measures of firm value investigated in this study. In this analysis, the proxies for gender diversity were regressed on the three measures of firm value (Share price, Shareholders' fund and Capital gearing). In the first model, gender diversity variables were regressed against the share price on the presumption that share price is very sensitive to the board composition. The results indicate that about 44% of the variation in share price is attributable to the combine effect of the gender diversity variables. As touching the coefficients of the gender diversity variables, it was discovered that a woman's presence on the board caused a significant reduction in share price. Evidently, the share price responds negatively to the presence of women in the board. The simple explanation for this result is that annual report is less attractive where there is fair representation of women on the board as their presence make it difficult for the board to manipulate the figures in the financial statement and thus making the investing public have a clear picture of the financial position of the companies.

In the second model where the gender diversity variables were regressed against the shareholders' fund as a measure of firm value, it was observed that gender diversity favors shareholders' fund since about 66% of the variation in shareholders' fund is associated with gender diversity. This implies that firms with fair representation of women makes more profit for their investors and ensure that such profit is re-invested in form of retained earnings. From the investor's point of view, the most appreciated indicator for business success is the ability to earn a profit. However, not all profitable firm can boast of increase in shareholders' fund. The reason is that a firm can choose to distribute all its profit in form of dividend and another firm can decide to invest its profit in the business in order to grow the business. Therefore, what a firm does with its profit determines the amount of shareholders' fund that is reported in its account.

The other situation in which shareholders' fund can rise is through acquisition of additional equity through sales of share. Using this approach, the rise in shareholders' fund does not indicate better performance of the board. However, an alternative interpretation of this result is that firms with fair representation of female directors possibly have better reputation which draws investors in to the firm and increase the demand for their equity. In any case, rising shareholders' fund is generally seen as a favorable economic condition but it is important to know the factors contributing to the increase.

The study also tested whether capital gearing is sensitive to gender diversity of the corporate board. The results produced a strong coefficient of determination of about 60%, suggesting that a strong relationship exists between the gender diversity and capital gearing of the firms listed on the Nigerian stock exchange. Furthermore, table 12 revealed that capital gearing and four of the gender diversity variables are negatively related. The negative relationship between the capital gearing and gender diversity indicates that the more the percentage of female directors on the board the lower the capital gearing. Understandably,

capital gearing refers to the extent at which an organization purchases assets or the extent to which it funds its ongoing operation with short or long term debt. Capital structure on the other hand determines a firm health and substantial equity capital as opposed to debt capital normally indicates optimal overall financial performance.

Thus, a lower capital gearing associated with the presence of women on the board could mean that firms with higher number of female directors have better financial performance. Furthermore, lower capital gearing is a key to decreasing expenses and increasing profit for shareholders. Therefore, there is also the possibility that it is precisely the presence of female directors on the board that led to the reduction in the financial obligations of the firms through reduction in expenditure. Either ways, by evaluating a firm's capital structure, stakeholders can determine whether a firm follows sound financial practices. The result is in line with that of Kim, Shi and Zhou (2014) who reported that the implied cost of equity capital decreases with the efficacy of institutional infrastructure which may include the board composition in terms of gender.

Table 6 Regression Results for Gender Equality and Share Price

R		R ²				
0.661		0.436				
	SS	DF	MS	F	Sig.	
Regression	1440.457	6	479.819	43.529	0.000	
Residual	2016.225		1623		11.023	
Total	3455.682		1629			
	Beta	Std. Err.	T	Sig.		
FCHAIR	0.374	0.102	3.667	.000		
FCEO	0.208	0.074	2.811	.000		
FBOD	0.139	0.114	-1.209	.233		
FDAU	0.438	0.163	2.699	.000		
FDRI	0.371	0.118	3.144	.000		
FDRE	0.891	1.093	0.816	.097		

Dependent Variable: Share Prices

Table 7 Regression Results for Gender Equality and Shareholders' Fund

R		R ²				
0.812		0.659				
	SS	DF	MS	F	Sig.	
Regression	1239.458	6	413.163	34.101	0.000	
Residual	2217.223		1623		12.116	
Total	3456.681		1629			
	Beta	Std. Err.	T	Sig.		
FCHAIR	0.401	0.153	2.621	.000		
FCEO	0.517	0.179	2.888	.000		
FBOD	0.236	0.267	0.884	.294		
FDAU	0.132	0.026	5.181	.000		
FDRI	0.358	0.197	1.817	.058		
FDRE	0.294	0.217	1.355	.073		

Dependent Variable: Shareholders' Fund

Table 8 Regression Results for Gender Equality and Gearing Ratio

R		R ²				
0.774		0.598				
	SS	DF	MS	F	Sig.	
Regression	1239.458	6	413.163	34.101	0.000	
Residual	2217.223		1623	12.116		
Total	3456.681		1629			
	Beta	Std. Err.	T	Sig.		
FCHAIR	-0.633	0.357	-1.773	.069		
FCEO	-0.949	0.238	-3.987	.000		
FBOD	-0.481	0.205	-2.346	.012		
FDAU	0.816	0.219	3.726	.000		
FDRI	0.422	0.235	1.796	.081		
FDRE	-0.643	0.298	-2.158	.047		

Dependent Variable: Gearing Ratio

5. Conclusion and Recommendations

This study investigated the relationship between gender diversity of the corporate board and market value of the firm listed on the Nigeria stock exchange using information disclosed in the audited financial statement of 163 listed companies of different sizes in Nigeria during 2006 to 2015. Specifically, the study investigates whether adoption of female CEO, female chairman of board, female chairman of audit committee, female chairman of risk committee, female chairman of remuneration committee as well as percentage of female director on board, audit committee, remuneration committee and risk Committee influence the market value of the companies in the sample for this study.

The study reported a negative result for the relationship between the gender diversity and share price, indicating that the presence of female director on the board may cause a reduction in share price. However, it was observed that gender diversity favors shareholders' fund. This evidence is important because many investors place higher priority on the shareholders' fund as a measure of firm value as it speaks more about the long term survival of the firm. Furthermore, this study also produced an evidence that the presence of female director on the board led to reduction in capital gearing. This result implies that firms with lower female director are more reckless in acquiring debt which may and may not be used in the best interest of the stakeholders. We therefore conclude that gender diversity is a sensitive corporate governance variable.

Generally, the findings of this study raises several issues for practical, regulatory and policy formulation. Obviously, certain nations have understood the significance of gender-balanced board of directors, but the corporate governance discourse in emerging economy paid a rapt attention to the independence of the board of directors. Thus, virtually all the code of corporate governance especially those who tailored their code alongside the OECD code of corporate governance address the need for listed companies to have a board composed of independent non-executive directors. However, not many code of corporate governance address boards' gender diversity. Therefore, considering the findings of this study that a more gender-diversified board produced a better firm value, corporate governance codes preparer in Nigeria should give at least the same attention to gender diversity as they have given to the structure of board independence.

Furthermore, our findings support Hofstede's Model which perceived women as risk averter because of their low tolerance for uncertainty (strong uncertainty avoiders), agency theory and resource dependency theory. One major assumption in agency theory is the role of the board of directors in monitoring and controlling managers (Adams and Ferreira, 2009). An agency-theoretic rationale for gender equality is that female directors may bring different perspectives on complex issues, which in turn can help resolve informational biases in strategy formulation or in solving problems.

Lastly, the study makes suggestions for further studies. First, this study employed a panel data which is time series and cross sectional in nature, covering a period of ten years. A cross-sectional data, panel studies with longer time spans of about twenty-five years or more would provide greater insights into the proposed relationships. Unfortunately, this data is not available for a significant number of companies in financial sector and few other sectors due to internal restructuring and many other factors. Therefore, an industry based study will be a better alternative as opposed to several industries considered in the present study. Second, the security and exchange code of corporate governance recognized three categories of directors such as executive, non-executive and independent directors. Further research can classify female directors as executive and non-executive as well as independent and non-independent, and therefore providing an extension for this work.

List of Abbreviation

CEO- Chief Executive Officer

EPS- Earnings per Share

NSE- Nigerian Stock Exchange

OECD- Organization for Economic Commission and Development

OLS- Ordinary Least Square

References:

- Adams, R., & Ferreira, D. (2009). Women in the Boardroom and Their Impact on Governance and Performance. *Journal of Financial Economics*, 94, 291- 309.
- Agrawal, A. & Knoeber, C.R (1996). Firm value and mechanisms to control agency problems between managers and shareholders, *Journal of Financial and Quantitative Analysis*, 31, 377-397.
- Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *Quarterly Journal of Economics*, 127(1), 137-197.
- Ahern, K. & Dittman, A. (2012). The Changing of the Boards: The Impact on Firm Valuation of Mandated Board Representation, *Quarterly Journal of Economics*, 129 (1), 137-197.
- Bøhren, Q & Staubo, S. (2014). Does mandatory gender balance work? Changing organizational form to avoid board upheaval. *Journal of Corporate Finance*, 28, 152-168.
- Bøhren, Q, & Strøm, R.Q. (2010). Governance and politics: Regulating independence and diversity in the board room. *Journal of*

- Business Finance & Accounting*, 37(2), 1281-1308.
- Campbell, K. & Vera, A. (2010). Gender Diversity in the Boardroom and Firm Financial Performance. *Journal of Business Ethics*, 8(3), 435-451.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53.
- Carter, D. D'Souza, F. Simkins, B. & Simpson, G. (2010). The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance. *Corporate Governance: An International Review*, 24(2), 396-414.
- Claessens, S. & Joseph P.H. (2002), Corporate Governance in Asia: A Survey. *International Review of Finance* 3(5), 71-103.
- Claessens, S, Djankov, S., Fan, J. & Lang, L. (2000). The Separation of Ownership and Control in East Asian Corporations, *Journal of Financial Economics* 58(1), 81-112.
- Claessens, S, Djankov, S., Fan, J. & Lang, L. (1999). Expropriation of Minority Shareholders: Evidence from East Asia. *The World Bank, Policy Research Working Paper Series* 2088.
- Canyon, M.J. (2006). Executive compensation system and incentives management. *Academy of Management Perspectives*, 20(1), 25-44.
- Denis, D.K. & McConnell J.J (2003). International Corporate Governance: European Corporate Governance Institute, *Finance Working Paper* No. 05/2003.
- Dezso, C. L., & Ross, D.G, (2012). Does Female Representation in Top Management Improve Firm Performance: A Panel Data Investigation. *Strategic Management Journal*, 33, 1072-1089.
- Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, 33, 1072-1089.
- Di Pietra, R., Grambovas, C. A., Raonic, I., & Riccaboni, A. (2008). The effects of board size and 'busy' directors on the market value of Italian companies. *Journal of Management and Governance*, 12, 73-91.
- Doidge, C.G., Karolyi, A. & Stulz, R.M (2004). Why Do Countries Matter so Much for Corporate Governance?" *NBER Working Paper* No. 10726.
- Doms, M.E. & Jensen J.B (1998). Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States. *Journal of Financial Economics* 53(1), 94-122.
- Drago, C., Millo, F., Ricciuti, R., & Satella, P. (2011). The role of women in the Italian network of boards of directors, 2003-2010. *University of Verona working paper* 10.
- Duchin, R., Matsusaka, J. G., & Ozbas, O. (2010). When are outside directors effective? *Journal of Financial Economics*, 9(6), 195-214.
- Durnev, A & Kim H.A (2005), "To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation," *Journal of Finance* 3(6), 1461-1493.
- Dyck, A & Zingales L. (2004). Private Benefits of Control: An International Comparison. *Journal of Finance* 5(9) 537-600.
- Easterwood, J. C., Ince, O. S., & Raheja, C. G. (2012). The evolution of boards and CEOs following performance declines. *Journal of Corporate Finance*, 18, 727-744.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(4), 102-111.
- Faleye, O., Hoitash, R., & Hoitash, U. (2011). The costs of intense board monitoring. *Journal of Financial Economics*, 10(1), 160-181.
- Fama, E.F. & French, K.F (2013). Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3-56.
- Francoeur, C. R. (2007). Gender Diversity in Corporate Governance and Top Management. *Journal of Business Ethics*, 8(1), 83-95.
- Goh, B. W., & Li, D. (2013). The disciplining effect of the internal control provisions of the Sarbanes-Oxley Act on the governance structures of firms. *The International Journal of Accounting*, 48(2), 248-278.
- Kim, J.-B., Song, B. Y., & Zhang, L. (2011). Internal control weakness and bank loan contracting: Evidence from SOX Section 404 disclosures. *The Accounting Review*, 86(4), 1157-1188.
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163-197.
- Lone, C. Huidan, L. Joana, P. Petia and Rima (2016). Gender Diversity in Senior Positions and Firm Performance: Evidence from Europe. *IMF working paper*, 16(50).
- Oyerogba, E.O (2018). Corporate governance practices and foreign direct investment: The case of Nigerian listed companies. *International Journal of Accounting and Finance*, 8(4), 312-339.
- Oyerogba, E.O. Alade, M.E. Idode, P.E. & Ogungbade, O.I. (2017). Impact of board oversight functions on the performance of listed companies in Nigeria. *Journal of Accounting and Management Information System*, 16 (3): 143-151.
- Oyerogba, E.O. Memba, F. & Riro, G.K (2016). Impact of board size and firm's characteristics on the profitability of listed

- companies. *Research Journal of Finance and Accounting*, 7 (4): 143-151.
- Robinson, G. & Dechant, K. (2007). Building a business case for diversity, *Academy of Management Executive* 11, 21-30.
- Shrader, C.B., & Blackburn, V.B (1997). Women in Management and Firm Financial Performance: An Explorative Study. *Journal of Managerial Issues*, 7(9), 355-372.
- SEC (2011). Code of corporate governance for public companies retrieved on 28th August, 2013 from <http://www.sec.gov.ng/>
- Singh, V., & Vinnicombe S. (2004), "Why so Few Women Directors in Top UK Boardrooms: Evidence and Theoretical Explanations", *Corporate Governance: An International Review*, 12, 479-488.
- Smith, N., V. Smith, & Verner, M (2005). Do Women in Top Management affect Firm Performance? A Panel study of 2500 Danish Firms," *Discussion Paper August (Bonn: Institute for the Study of Labor)*.
- Terjesen, S., B. Sealy, F. & Singh P.M (2007). Does the Presence of Independent and Female Directors Impact Firm Performance? A Multi-Country Study of Board Diversity. *Journal of Management & Governance*, DOI:10.1007/s10997-014-9307-8, 8(2), 1-37.
- Zelechowski, D. D., & Bilimoria, D. (2004). Characteristics of women and men corporate inside directors in the US. *Corporate Governance: An International Review*, 12(3), 337-342.
- Adams, R., & Ferreira, D. (2009). Women in the Boardroom and Their Impact on Governance and Performance. *Journal of Financial Economics*, (94), 291-309.
- Agrawal, A. & Knoeber, C.R (1996). Firm value and mechanisms to control agency problems between managers and shareholders, *Journal of Financial and Quantitative Analysis* 31, 377-397.
- Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *Quarterly Journal of Economics*, 127(1), 137-197.
- Ahern, K. & Dittman, A. (2012). The Changing of the Boards: The Impact on Firm Valuation of Mandated Board Representation," *Quarterly Journal of Economics*, Vol. 129 No. 1, pp. 137-197.
- Bøhren, Ø., & Staubo, S. (2014). Does mandatory gender balance work? Changing organizational form to avoid board upheaval. *Journal of Corporate Finance*, 28, 152-168.
- Bøhren, Ø., & Strøm, R. Ø. (2010). Governance and politics: Regulating independence and diversity in the board room. *Journal of Business Finance & Accounting*, 37(9-10), 1281-1308.
- Campbell, K. & Vera, A. (2010). Gender Diversity in the Boardroom and Firm Financial Performance. *Journal of Business Ethics*, (83), pp. 435-451.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53.
- Carter, D. D'Souza, F. Simkins, B. & Simpson, G. (2010). The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance. *Corporate Governance: An International Review*, pp. 396-414.
- Claessens, S. & Joseph P.H. (2002), "Corporate Governance in Asia: A Survey," *International Review of Finance* 3(5), 71-103.
- Claessens, S, Djankov, S., Fan, J. & Lang, L. (2000), "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics* 58(1), 81-112.
- Claessens, S, Djankov, S., Fan, J. & Lang, L. (1999), "Expropriation of Minority Shareholders: Evidence from East Asia," *The World Bank, Policy Research Working Paper Series* 2088.
- Canyon, M.J. (2006). Executive compensation and incentives", *Academy of Management Perspectives*, vol. 20(1): 25-44.
- Denis, D.K. & McConnell J.J (2003), "International Corporate Governance," *European Corporate Governance Institute, Finance Working Paper No. 05/2003*.
- Dezso, C. L., & Ross, D.G, (2012). Does Female Representation in Top Management Improve Firm Performance? A Panel Data Investigation," *Strategic Management Journal*, Vol. 33, pp. 1072-1089.
- Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, 33, 1072-1089.
- Di Pietra, R., Grambovas, C. A., Raonic, I., & Riccaboni, A. (2008). The effects of board size and 'busy' directors on the market value of Italian companies. *Journal of Management and Governance*, 12, 73-91.
- Doidge, C.G., Karolyi, A. & Stulz, R.M (2004), "Why Do Countries Matter so Much for Corporate Governance?" *NBER Working Paper No. 10726*.
- Doms, M.E. & Jensen J.B (1998), Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States *Journal of Financial Economics* 53(1), 94-122.
- Drago, C., Millo, F., Ricciuti, R., & Satella, P. (2011). The role of women in the Italian network of boards of directors, 2003-2010. *University of Verona working paper* 10.
- Duchin, R., Matsusaka, J. G., & Ozbas, O. (2010). When are outside directors effective? *Journal of Financial Economics*, 96, 195-214.
- Durnev, A & Kim H.A (2005), "To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation," *Journal of Finance* 60 No. 3(6), 1461-1493.
- Dyck, A & Zingales L. (2004), "Private Benefits of Control: An International Comparison," *Journal of Finance* 59 537-600.

- Easterwood, J. C., Ince, O. S., & Raheja, C. G. (2012). The evolution of boards and CEOs following performance declines. *Journal of Corporate Finance*, 18, 727–744.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11, 102–111.
- Faleye, O., Hoitash, R., & Hoitash, U. (2011). The costs of intense board monitoring. *Journal of Financial Economics*, 101, 160–181.
- Fama, E.F. & French, K.F (2013), "Common risk factors in the returns on stocks and bonds," *Journal of Financial Economics* 33, 3-56.
- Francoeur, C. R. (2007). Gender Diversity in Corporate Governance and Top Management. *Journal of Business Ethics*, Vol 81, pp.83-95.
- Goh, B. W., & Li, D. (2013). The disciplining effect of the internal control provisions of the Sarbanes–Oxley Act on the governance structures of firms. *The International Journal of Accounting*, 48(2), 248–278.
- Kim, J.-B., Song, B. Y., & Zhang, L. (2011). Internal control weakness and bank loan contracting: Evidence from SOX Section 404 disclosures. *The Accounting Review*, 86(4), 1157–1188.
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163–197.
- Lone, C. Huidan, L. Joana, P. Petia and Rima (2016). Gender Diversity in Senior Positions and Firm Performance: Evidence from Europe, IMF working paper, 16(50).
- Oyerogba, E.O (2018). Corporate governance practices and foreign direct investment: The case of Nigerian listed companies. *International Journal of Finance and Accounting*, 8(4), 312-339.
- Oyerogba, E.O. Alade, M.E. Idode, P.E. & Ogungbade, O.I. (2017) "Impact of board oversight functions on the performance of listed companies in Nigeria", *Journal of Accounting and Management Information System*, vol. 16 (3): 143-151.
- Oyerogba, E.O. Memba, F. & Riro, G.K (2016) "Impact of board size and firm's characteristics on the profitability of listed companies", *Research Journal of Finance and Accounting*, vol. 7 (4): 143-151.
- Robinson, G. & Dechant, K. (2007). Building a business case for diversity, *Academy of Management Executive* 11, 21–30.
- Shrader, C.B., & Blackburn, V.B (1997). Women in Management and Firm Financial Performance: An Explorative Study", *Journal of Managerial Issues*, 9, 355-372.
- SEC (2011). Code of corporate governance for public companies retrieved on 28th August, 2013 from <http://www.sec.gov/ng/>
- Singh, V., & Vinnicombe S. (2004), "Why so Few Women Directors in Top UK Boardrooms: Evidence and Theoretical Explanations", *Corporate Governance: An International Review*, 12, 479-488.
- Smith, N., V. Smith, & Verner, M (2005). Do Women in Top Management affect Firm Performance? A Panel study of 2500 Danish Firms," Discussion Paper August (Bonn: Institute for the Study of Labor).
- Schwartz-Ziv, M., (2013). Does the Gender of the Directors Matter?" Working Paper No. 8, Edmond J. Safra Center for Ethics Working Paper Series, Harvard.
- Terjesen, S., B. Sealy, F. & Singh P.M (2007). Does the Presence of Independent and Female Directors Impact Firm Performance? A Multi-Country Study of Board Diversity," *Journal of Management & Governance*, DOI:10.1007/s10997-014-9307-8, pp. 1–37.
- Zelechowski, D. D., & Bilimoria, D. (2004). Characteristics of women and men corporate inside directors in the US. *Corporate Governance: An International Review*, 12(3), 337–342.