EFFECTS OF ORGANISATIONAL STRUCTURES ON FIRM VALUE IN AFRICA IN 21ST CENTURY: NIGERIAN OIL AND GAS COMPANY

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Abstract
The adverse effects of conflict of interest among several parties involved in African corporations cannot be undermined. This study is prompted by the recent cases of corporate failure in Africa resulting from mismanagement of resources by the parties saddled with the responsibilities of smooth running of corporate entities. Considering Nigeria as one of the largest countries in Africa and oil and gas industry as one of the key contributors to African economy, the study examined the effects of organizational structures on firm's value of listed oil and gas companies in Nigeria. The study adopted ex-post facto research design. The population of the study comprises the 12 listed oil and gas companies in Nigeria while the sample size of 8 was drawn by using convenience sampling technique. Secondary data were utilized for the study and the data were extracted from the sampled annual reports and accounts of the listed oil and gas companies for the period 2008 to 2018. The study employed panel regression technique of data analysis. The findings of the study revealed that managerial ownership has a positive and significant effect on firm value while board size has a negative and significant effect on firm value. More so, ownership concentration has a positive and insignificant effect on firm value, board independence has a positive and insignificant effect on firm value and also, gender diversity has a positive and insignificant effect on firm value of listed oil and gas companies in Nigeria. The study recommended that regulatory authorities such as the Security and Exchange Commission (SEC) should encourage the executive directors to invest more on equity shares in listed oil and gas companies in Nigeria.

Introduction

Corporations are economic entities that carry out operations in order to add value to the firm, nation and the nation as a whole. Over the years, there have been cases of corporate failure which is believed to be as a result of mismanagement by people shouldered with the responsibility, to manage the resources entrusted in their care. Since the era of the separation of ownership from the management, the managers of

corporations are shouldered with the responsibilities of carrying out the operations and decisions of business entities as such; they are expected to report back to the owners of the corporations. Due to the agency problem and conflict between the agents and the principals, the issue of corporate governance came into light to address the aforementioned conflict of interest between these parties.

Organizational structures are organs in an organization that direct the behavior of the management on how the operations of both business and non - business activities should be operated. In other to achieve an effective and efficient operation, there is always the need for control structure which could either be in terms of management or external control. In other to address the issue of agent-principal problems, the code of corporate governance spells out the ways in which such issues can be addressed by involving the management in terms of ownership. The code of corporate governance also controls the organization in terms of the board structure thereby, giving the management an insight on how to strike balance amongst the stakeholders.

Managerial ownership has been identified as an effective corporate governance mechanism as it helps to address the interest of both managers and shareholders (Brickley, Lease, & Smith, 1988), Equity owners and managers have the incentive to monitor firms carefully to ensure higher returns from their ownership (Brickley, Lease, & Smith, 1988). Past studies have shown that high level of managerial ownership is associated with higher firm performance and firm value (Hanson & Song, 2000).

Managerial ownership is important in an organization because its intention is to ensure that the decisions taken by the directors are in the firm's interest. Jensen and Meckling (1976) study the tradeoffs that a manager faces when choosing the managerial ownership, which they define as the fraction of the firm's shares, held by its manager. A manager derives utility from both direct compensations in the form of cash, options, and shares, and from consuming private benefits in his or her position. Ownership concentration is a significant internal governance mechanism in which owners can control and influence the management of the firm to protect their interests. It is simply a case whereby majority of the shares are held by few owners.

The issues of managerial ownership and board structure as corporate governance mechanisms have received considerable attention in recent years from academics, market participants and regulators. It continues to receive attention because the theory provides conflicting views as to the impact of board structure on the control and performance of firms, while at the same time the empirical evidence is inconclusive. To date, the relationship between board structure (as opposed to board

processes) and company performance has been the most studied aspect among all board investigations (Bhagat & Black, 1999).

It is on this note that this study examined the effects of organizational structures on firm's value of listed oil and gas companies in Nigeria with the following specific objectives:

i. Determine the effect of managerial ownership on firm's value of listed oil and gas companies in Nigeria.
ii. Evaluate the effect of ownership concentration on firm's value of listed oil and gas companies in Nigeria.
iii. Examine the effect of board size on firm's value of listed oil and gas companies in Nigeria.
iv. Access the effect of board independence on firm's value of listed oil and gas companies in Nigeria.
v. Examine the effect of gender diversity on firm's value of listed oil and gas companies in Nigeria.

Conceptual Framework

Organisational Structure, Board Structure and Firm Value

Organizational structure in the context of this study can be defined as the way an organization is structured in terms of board and ownership. Organizational structures are organs in an organization that direct the behavior of the management on how the operations of both business and non - business activities should be conducted. Board structure or composition refers to the number of independent non-executive directors on the board relative to the total number of directors. An independent non-executive director is defined as an independent director who has no affiliation with the firm except for their directorship (Clifford and Evans, 1997). There is an apparent presumption that boards with significant outside directors will make different and perhaps better decisions than boards dominated by insiders

On the other hand, firm value can be seen from several approaches. Balance sheet approaches sees company value as value of its assets. This simple method sees company value in balance sheet. The method used to Measure Company's income value was based on income statement. Firm value can be determined by sales, earnings or other indicators. Another approach was goodwill. Firm value was calculated from book value plus goodwill. Firm value was a function of future cash flows and level of return. Brigham (1999) defines company value as the value given to management of financial markets and corporate organizations as a company continues to grow. This value was determined by the market perceptions of

companies' performance and sustainability that represents the market value of shares outstanding.

Determinants of Organisational and Board Structures

Managerial Ownership

Managerial Ownership is also an important characteristic of board structure. It reduces manager–shareholder conflicts in stock ownership by board members (both executive and non-executive). To the extent that executive board members own part of the firm, they develop shareholder-like interests and are less likely to engage in behavior that is detrimental to shareholders. Therefore, managerial ownership is inversely related to agency conflicts between managers and shareholders.

Ownership Concentration

It is believed that one of the most important ways through which a firm maximizes its value is through well-designed ownership structure of the firm's shares. Concentrated equity ownership can be bad for the governance of the firm since it gives the largest shareholders too much discretionary powers of using firm resources in ways that serves their interest at the expense of other shareholders. That is, too much concentrated ownership (the largest shareholders) may accentuate the earnings management (Long, 2011). According to Goldberg, Danko and Kessler (2016), a concentrated ownership system is more common in continental Europe. In this system one shareholder, family or group of shareholders has majority or dominant control of companies.

Board Size

This is considered to be a crucial characteristic of the board structure. Large boards could provide the diversity that would help companies to secure critical resources and reduce environmental uncertainties (Pfeffer, 1987; Pearce & Zahra, 1992; Goodstein et al., 1994). But, as Yermack (1996) said, coordination, communication and decision-making problems increasingly impede company performance when the number of directors increases. Thus, as an extra member is included in the board, a potential trade-off exists between diversity and coordination. Jensen (1993) appears to support Lipton and Lorsch (1992) who recommend a number of board members between seven and eight. However, board size recommendations tend to be industry-specific, since Adams and Mehran (2003) indicate that bank holding companies have board size significantly larger than those of manufacturing firms.

Board Independence

A board composed of members who are not executives of a company, nor shareholders, nor blood relatives or in law of the family (Gallo, 2005). An

independent board is generally composed of members who have no ties to the firm in any way, therefore there is no or minimum chance of having a conflict of interest because independent directors have no material interests in a company (Wolfe, 2005). Dalton, Daily, Ellstrand, and Johnson (1998) and Jacobs (1985) stated that independent directors are important because inside or dependent directors may have no access to external information and resources that are enjoyed by the firm's outside or independent directors (e.g., Chief Executive Officers (CEO) of other firms, former governmental officials, investment bankers, Social worker or public figures, major suppliers). Moreover, for advice/counsel inside or dependent directors are available to the CEO as a function of their employment with the firm; their appointment to the board is not necessary for fulfillment of this function.

Boards mostly compose of executive and non-executive directors. Executive directors refer to dependent directors and non-Executive directors refer to independent directors (Shah, Zulfiqar, Safdar & Saeed, 2011). At least one third of independent directors are preferred in board, for effective working of board and for unbiased monitoring. Dependent directors are also important because they have insider knowledge of the organization which is not available to outside directors, but they can misuse this knowledge by transferring wealth of other stockholders to themselves (Beasly, 1996).

An independent director can be defined as one who is capable of performing his duties independently from the management, controlling shareholders, and the corporation (Gregory, 2000). Independent directors on company boards are believed to be an integral component of internal control and monitoring mechanism. Independent directors are required as members of the Audit, Remuneration, and also Nomination committees. These Committees are established to ensure the integrity of financial statements issued by the company and also to ensure that there are proper internal checks and controls with respect to financial management in the company. In addition, as members of the Remuneration Committee, independent board members ensure that management do not over-pay themselves. The Nomination Committee is responsible for searching and screening incoming directors and filling senior appointments and ensuring that they have sufficient skill, added knowledge and diversity to the board as a whole (Companies Act, 1965).

Gender Diversity

Generally, the debate on gender diversity involves two arguments. The first argument holds the view that women with competent skills, experience and qualifications deserve the opportunity to serve on corporate boards. The second argument suggests that positive gender diversity amongst corporate director results

in better governance and enhances the performance of a firm. This second proposition means that the representation of females on the board should serve solely to improve performance, otherwise firms will be engaging in 'tokenism', which is the practice of representing a small group or minority on a board in order to give an appearance of sexual or racial equality within a workforce (Kanter, 1977). Here, firms make a perfunctory gesture of inclusiveness towards minority groups (Zimmer, 1988). If the nomination committee can argue that it is important to have females on the corporate board, it will be easier for them to build a business case about their competency to the shareholders (Carter et al. 2010; Patterson, 1997).

Another assertion, by Hillman, Cannella, and Harris (2002), argues that women have different backgrounds and characteristics that make them unique when compared with traditional directors. Kramer et al. (2007) indicate that women are known to ask tough questions and bring unity into leadership positions. Terjesen, Sealy and Singh (2009) also reveals that diversity in boards brings unique human capital and helps enhance board independence. This is also supported by McLeod, Lobel & Cox (1996), who argue that individuals with different opinions from diverse groups can improve the quality of decision-making and take into account the views of underrepresented groups. Perryman Fernando and Tripathy (2016) suggested that, the heterogeneity in decision-making by the corporate boards helps to solve problems and enhances the presence of better decision-making because the board can engage in the critical analysis of issues. Studies by (Faff Hallahan, & McKenzie, 2011) using psychometric data indicate that women are more risk averse than men in general business and financial decision making. This makes women less risk tolerant than men during an investment decision. Firms can therefore balance their risk tolerance when they have a combination of female and male on the corporate board for decision making.

Rose (2007) argues that a high degree of board diversity may serve as a positive signal to prospective job applicants looking to join a company. For example, physically disabled people and gender minorities will realize that they have a chance in the highest positions within the firm. This means accesses to a wide pool of talented individuals who are able to apply for positions, thereby increasing transparency and good corporate governance (Davies Report, 2011).

Empirical Review

Bishnu and Le (2014) examined the effects of board structure on firm performance in Vietnam using the fixed effect, the random effect, and the least square dummy variable regression models under the panel estimation methods. The paper adopts both the accounting and the market based measures of firm performance. The

empirical results reveal that the board size and the board independence are positively and significantly associated with the firm performance in Vietnam. By contrast, supervisory board independence and concentration of non-executive directors in the board are negatively associated with the firm performance, implying that they fail to add potential economic value to the firms in Vietnam. Besides, the relationship between board diversity and firm performance is found to be statistically significant only under the Tobin's q. The study, however, does not find any significant relationship between supervisory board size and firm performance. This was inconsistent with previous studies. There is need to extend the frontiers of knowledge in order to accommodate changes that must have occurred which may affect the findings from this study.

Vintila and Gherghina (2014) examined the impact of ownership concentration on firm value. Empirical study of the Bucharest Stock Exchange listed companies over the period 2007 to 2011. Total assets, Leverage, sales, year listed, ownership concentration and firm value were the variables of the study. Several multivariate regression models were estimated for the panel data, unbalanced with fixed effects. However, the findings were influenced by the context of an underdeveloped Romanian capital market, being supported Zwiebel, 1995 pursuant which large shareholders will tend to 'create its own space', discouraging other blockholdings from forming. Distinctly, the ownership of the first, second and third largest shareholder, as well as the sum of holdings of the two largest shareholders and the sum of holdings of the three largest shareholdings was considered. Therefore, the results sustain a lack of influence on firm value exhibited by the first largest shareholder, while the second largest shareholder positively influences firm value. By considering the ownership of the third largest shareholder, a positive influence was identified but down to a level of holding of 13.08 percent, thereupon the influence becomes negative.

Ozcan and Riza (2016) investigated the impact of board size and board composition on performance for a sample of 30 commercial banks from 2008 to 2012 in Turkey. They measure bank performance by two alternative measures widely used in the banking literature, i.e. operating return on assets (OROA) and return on assets (ROA). Controlling for bank size, credit risk, liquidity risk, net interest margin and non-interest income, the results of panel fixed effects regression suggest that board size has a significantly positive effect on bank's financial performance. This means that Turkish commercial banks may improve their financial performance by increasing their board size. Our findings, however, show clearly that there is no significant relationship between board composition (ratio of outside directors on the

board) and banks' financial performance. The study was restricted to banking sector which has different characteristics from that of oil companies.

Nooriha and Karunananda (2017) examined the impact which Ownership Structure has had on firm performance of the Sri Lankan firms which are listed in Colombo Stock Exchange (CSE). This study used Descriptive Statistics, Univariate Analysis, and Ordinary Least Squared Multi Regression Model as techniques and these techniques were applied on 60 top Capitalized companies which are listed in CSE. Annual Reports in 2015/16 Financial year are used to collect data on Ownership Structure and Firm Value. Insider (Managerial) Ownership, Institutional Ownership, Foreign Ownership were used as independent variables. To define the Firm Value Tobin's Q ratio is used as performance measurement. Firm Age and Size of the Board are used as control variables. The empirical regression results of the study indicate that the Ownership Structure has no significant relationship with Firm Value except Foreign Ownership. The research was conducted in Sri Lankan and the data was obtained from Sri Lankan. Since the listed companies in Nigeria differs from that of Sri Lankan and as such the findings are not applicable in Nigeria.

Nilanjan, Imants and Melissa (2017) examined the influence of sample selection on the observed relationship between insider ownership and firm value. An extensive review of the literature reveals that the ownership-firm value relationship appears to be concave for prominent index-listed firms, convex for less prominent and off-index firms, and insignificant for a mixture thereof. We confirm this pattern using a comprehensive sample of US firms. Further, the observed differences in the ownership-firm value relationship cannot be ascribed to firm age or firm size. Index listing appears to be a neglected yet powerful driver of these differences.

Peter and Hannu (2017) examined if the appointment of females (Board Gender Diversity) onto the corporate boards of UK financial institutions can improve the firm's value. The second purpose is to examine if having females on the boards of UK financial institutions can impact the firm's value during the pre/post global financial crisis situation. The paper uses secondary data obtained from DataStream covering 63 financial institutions over a period of 12 years. A number of additional statistical estimations, including Random Effects and Fixed Effects, are conducted in order to test the robustness of the findings. The outcome of this empirical research shows that the presence of females on the corporate boards of UK financial institutions has a positive and statistically significant relationship to the firm's value. Before the financial crisis era, that is, during the pre-crisis situation (2000-2006), our evidence reveals a positive and statistically significant impact on the firm's value. This means that women contributed significantly to the firm's value. However, after the financial crisis period, the presence of females on the board did not make any

significant effect on the firm's value. A reasonable explanation may be that, even though the financial crisis was over from 2009 to 2011, the entire UK economy was still experiencing an economic downturn and financial firms were no exception, irrespective of whether there was female representation on any corporate board. Overall, the findings are consistent with prior studies.

Theoretical Framework

Agency Theory

The agency theory was developed by Jensen and Meckling (1976). The theory states the relationship between principals such as shareholders, and agents such as a firm's senior managers. The principal delegates work to an agent. The theory attempts to deal with first, the agency problem where there is a conflict of interests between a firm's managers and firm's stockholders, and second, that the principal and agent settle for different risk tolerances. Therefore, there are two main agency relationships in a firm that are normally in conflicts; those between the firm's managers and stockholders and between the stockholders and the debt-holders. These agency conflicts have implications on corporate governance and business ethics. Such relationships have expensive agency costs that are incurred so as to sustain an effective agency relationship. Incentive fees paid to agents to encourage behavior consistent with the principal's goals are common examples of agency costs (Bowie & Edward, 1992).

One of the ways of reducing agency problems is debt financing which helps those problems that are normally related to free cash-flow and asymmetric information problems especially in the case of privately held debt. Secondly, conflicts of interests between managers and shareholders also arise from the divisions between ownership and control. Managerial ownership can align the interests between them and owners, hence; reduce the total agency costs. The relationship between managerial ownership and agency costs is linear and the optimal point for the firm is achieved when the managers acquire all of the shares of the company according to Jensen and Meckling (1976). Thirdly, ownership concentration is the other option of reducing agency costs by shareholders proactively taking active roles in monitoring. This is however dependent on the amounts of their equity stakes. The more the investor's stake, the more motivated they are to monitor and protect their investment according to Gilson and Lang (1990).

According to Aggrawal and Knoeber (1996), agents such as company managers will highly unlikely venture into behaviors that are strictly profit maximizing where shareholders are not strictly monitoring their activities. The implication therefore is that, if owner-controlled firms are highly performing than manager-controlled firms,

the assumption is that concentrated ownership of insurance firms provides better monitoring which leads to better performance. Among the previous studies that adopted agency theory in explaining the effect of ownership structure on financial performance are those of Jensen and Meckling (1976), Benjamin, Love, and Dandago (2014), Helen and Bature (2016).Previous studies such as Ohiani, Eniola and Lateef (2018); Helen and Bature (2016); Abdul (2016); Saseela and Thirunavukkarasu (2017) and Benjamin, Love, and Dandago (2014) have empirically confirmed the relationship between public expenditure and economic growth.

Stakeholder Theory

For the sake of this study, the shareholder value theory will be most preferably used. The shareholder value theory is a dominant economic theory in use by business which was originally proposed by Dr. F. Edward Friedman in the year 1970. The noble laureate Milton Friedman (1970) strongly argues in favor of maximizing financial return for shareholders. His capitalistic perspective clearly considers the firm owned by and operated for the benefit of the shareholders. He says 'there is one and only one social responsibility of business - to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud. …' Shareholder value theory states that corporations should pursue shareholder wealth with a long run orientation that seeks sustainable growth and profit based on responsible attention to the full range of relevant stakeholder interests. Essentially, it focuses on generating shareholder value, whilst having regard to the long term external impacts of the wealth generation.

Stakeholder theory begins with the assumption that values are necessarily and explicitly a part of doing business and rejects the separation thesis that assumes that ethics and economics can be neatly and sharply separated (Freeman, 1994). The theory provides a broader view that does justice to business ethics i.e. the moral performance of a business and trade rather than shareholder, single objective view of a business that distinguishes between economic and ethical consequences and value. If the entire set of stakeholder' relationships become strategic for the long-term success of a business, then, the measurement of corporate success cannot be limited to the creation of value for only one stakeholders group (Clarkson, 1995).

According to Freeman (1994), the focus of stakeholder' theory is articulated in two core questions: what is the purpose of a firm? And, what responsibility do managers of firms have to stakeholders? The first question encourages managers to articulate shared sense of the value they create and what brings its core stakeholders together.

It also propels firms forward and allows them to generate outstanding performances (Freeman, Wicks & Parmar, 2004). The second question, however, pushes managers to articulate how they want to do business and specifically the kind of relationships they want to create with their stakeholders.

The stakeholder theory further demands that managers should develop and run their firms in a way that is consistent with the demands of the theory i.e. stakeholders value rather than shareholder's value maximization. In fact, Samuels and Wilkes (1986) posited that a firm has responsibility towards its stakeholders and each of these interest groups sees the role of the company in slightly different ways. A firm value is therefore influenced by the quality of the relationship it maintains with a range of internal and external stakeholders and its ability to communicate its activities and performances effectively with key stakeholders can be critical to its long-term success, viability and growth (KPMG, 2008).

The long-run value of a firm cannot be maximized if the varied interests of its stakeholders are ignored. This was noted by Jensen (2000) when he propounded the 'enlightened stakeholder theory', which posited that the objective function of a firm should be to maximize its total long-run market value and a change in the market value is the scorecard by which the success of a firm is measured. The author further posited that none of the stakeholders is superior or ranks above others and that the value created by firm gives managers a way to assess the trade-offs that must be made among the competing stakeholders' interests.

Equity theory gives support to stakeholder theory by positing that stakeholders do not only evaluate the size of the value created that is distributed to them but also consider the value appropriated to other stakeholders (Huppertz, Arenson & Evans, 1978). This made stakeholders to assume the presence of relative justice in the exchange process such that the absence of relative justice can produce negative sentiments and behavioural responses (e.g. dissatisfaction and withdrawal of contributions towards value creation). However, relative justice is a subjective concept that varies from one firm to the other hence, the need to examine and measure how modern businesses appropriate economic value in order to respond to stakeholders' needs and interests in an effective and equitable manner.

This concern was generated out of the context in which corporate organizations operate and the network of relationship that connects a firm to a greater number of interrelated individuals and constituencies, called 'stakeholders' (Donaldson & Preston, 1995 and Post, Preston & Sachs, 2002). It was also as a result of the relationship that influences the way a business is governed and its short and long-term survival. Therefore, it can be specifically argued that the satisfaction of the

interests of stakeholders of a firm (in form of the economic value created that is distributed to them) does affect its value creation potentials.

Methodology

This study adopted Ex-post facto research design. Ex-post facto research uses data already collected, but not necessarily amassed for research purposes. Ex-post facto literally means from what is done afterwards. The study relied heavily on already existing secondary data of all listed oil and gas companies in Nigeria.

The populations of the study are all the twelve (12) oil and gas companies listed on the floor of the Nigerian Stock Exchange. The total number of firms was derived from the Nigerian Stock Exchange (NSE) fact book as at 2018. The sample size of the study was eight (8) oil and gas companies listed on the Nigeria stock exchange. The eight (8) oil and gas companies selected for the study were selected using convenience sampling technique throughout the period under study.

Convenience sampling (also known as Haphazard or Accidental Sampling) is a type of non-probability or non-random sampling where members of the target population meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Dornyei, 2007).

The study used secondary source of data collection. The data was extracted from the annual reports and accounts of the sampled oil and gas companies, listed on the Nigerian Stock Exchange fact book and other relevant sources for a period of eleven (11) years (2008 to 2018). The firms are public limited companies listed on the Nigerian Stock Exchange. By virtue of being public limited companies and as a requirement of being listed, annual financial report has to be made available to the Nigerian Stock Exchange.

Panel regression technique of data analysis was employed. The technique was used to examine whether each independent variable is associated with the dependent variable. The various hypothesis and variables were combined into a functional equation to explain the relationship between the explanatory variables.

Model Specification

For the purpose of the study a model was specified and estimated.

FV= f(MOWN,OWNCON,BSIZE,BINDP,GEDV,FS)

$FV_{it}= \beta 0 + \beta_1 MOWN_{it} + \beta_2 OWNCON_{it} + \beta_3 BSIZE_{it} + \beta_4 BINDP_{it} + B_5 GEDV_{it} + \beta_6 FS_{it} + \mathcal{E}_{it}$

Where:

FV = Firm Value was proxied by Tobin's Q and measured by the Log ((Market value of equity + book value of assets – book value of equity – deferred tax) / book value of assets) (Schiager, & Haukvik, 2012)
MOWN= Managerial Ownership was measured as the percentage of firm shares held by the managers as a proportion of the number of shares outstanding.
BSIZE = Board Size was measured as the total number of directors on the board of directors of the company
OWNCON = Ownership Concentration was measured as the shareholder's shares as a proportion of the total number of shares.
BINDP= Board Independence was measured as the total number of independent non-executive directors as a proportion of the total number of directors.
GEDV= Gender Diversity was measured as the percentage of women on the board of directors of a company.
FS= Firm Size was measured as the logarithm of the total assets.
β =constant
β0= coefficient of the parameter estimate.
εt= Error term
i = Company
t = Time

Results and Discussion

Table 1 Descriptive Statistics

Variables	Mean	Max	Min	Sd	Skewness	Kurtosis
FIRM VALUE	.4990439	1.47631	.123889	.2193257	1.062785	6.132713
MANAGERIAL OWNERSHIP	.1694489	.592233	.000208	.1114463	.6504446	3.78122
OWNCON	.2016583	.394008	.002352	.1023796	.1572499	2.568239
BOARD SIZE	13.18182	19	6	3.171516	-.5065502	2.553059
BOARD INDEPENDENCE	.431661	.75	.266667	.0950567	.5400175	3.202228
GENDERDIVERSITY	.0570905	.166667	0	.0515627	.0709371	1.517671
FIRM SIZE	7.184344	7.90377	6.6814	.3002009	.2064468	2.159804

Source: STATA Output 2019

Table 1 reports the descriptive statistics for the dependent and independent variables. The table reveals that the mean of the firm value (FV) which is .4990439 as seen above, reveals that on average, the studied companies' firm value realized approximately 50%. The maximum value of firm value is 1.47631, representing the maximum rate of Tobin Q utilized by the listed oil and gas firm in Nigeria while the

minimum value of the firm value is .123889. This is with a standard deviation of .2193257 (22%) implying low rate of variability of firm value in the industry.

More so, from the table above, the mean value of managerial ownership (MOWN) of the listed oil and gas companies that constitute the study sample is .1694489 (17%), the maximum value is .592233 (60%) while the minimum value is .000208 (0.002%). The proportion of managerial ownership represents a relatively negligible amount of the total shares outstanding (less than 1). Whereas, ownership concentration has a mean value of .2016583 (20%). A maximum value of .394008 (40%) and a minimum value of .002352 (0.02%) with the minimum value indicating that there was a particular firm in a certain year within the observations that have 2% ownership concentration.

The table above also shows that the board size (BSIZE) of the listed oil and gas companies in Nigeria has a mean value of 13.18182 (13%) with the standard deviation of 3.171516. This implies that the data in the sampled listed oil and gas companies deviate from the mean by 3.171516. The maximum as well as the minimum are 6 and 19 respectively. The coefficient of Skewness value of -.5065502 implies that the data is negatively skewed, and therefore does not conform to the symmetrical distribution requirement. Similarly, the coefficient of Kurtosis value of 2.553059 also indicates that the board size variable does not meet the Gausian distribution criterion.

The table also indicates that the board independence (BINDP) of the sampled listed oil and gas companies in Nigeria has a mean value of .431661 with the standard deviation of .0950567. This implies that on average .431661 (43%) of the total directors sitting on the corporate board of the oil and gas companies in Nigeria are outside/non-executive/independence directors. The maximum and minimum proportions of BINDP are .75 (75%) and .266667 (27%) respectively. The skewness value of .5400175 indicates that the data is positively skewed, that is, the mean is less than the mode, and thus, the variable does not meet the symmetrical distribution requirement. This is also supported by the coefficient of kurtosis of 3.202228 which implies that the Gausian distribution is not met.

From the table above, we can see that the mean value of gender diversity (GEDV) is .0570905. The proportion of women on the boards range from a maximum of .166667 to a minimum of 0.0000. Which shows that the women representation on the board of the sampled oil and gas companies is very poor. This is because the average representation is only .05%. The minimum of 0.000 proves that some companies did not include women in their team of Board of Directors during the period of the study. And for those that included women, the maximum representation was only 16%. The standard deviation of .0515627 indicates that the deviation between companies are

low. This shows that representation of women on the board is poor across the sampled oil and gas companies. However, representations of women tend to be low even in the developed economies. The coefficient of Skewness value of .0709371 implies that the data is positively skewed, and therefore does not conform to the symmetrical distribution requirement. Similarly, the coefficient of Kurtosis value of 1.517671 also indicates that the gender diversity variable does not meet the Gaussian distribution criterion.

Firm size (FS) has a mean value of 7.184344 (N7.18 billion) and a standard deviation of N.30 billion, representing very moderate level of variations in the size of the listed oil and gas companies under study during the period. a maximum value of about N7.90 billion which indicates the largest possible size of the firms under study and a minimum value of about N6.67 billion which explains minimum size of the firms under study

Table 2 Regression Results (Pooled OLS)

	Coef.	Std. Err.	t	P>|t|
MANAGERIAL OWNERSHIP	.4812474	.1845151	2.61	0.011
OWNERSHIP CONCENTRATION	.2338491	.2026317	1.15	0.252
BOARD SIZE	-.0204601	.0081137	-2.52	0.014
BOARD INDEPENDENCE	.3055675	.2349585	1.30	0.197
GENDER DIVERSITY	.2021886	.3768109	0.54	0.593
FIRM SIZE	.4451616	.0659517	6.75	0.000
_cons	-2.69729	.4780232	-5.64	0.000
R-Square: 0.4511				
F- statistics = 10.82				
Prob > F = 0.0000				

Source: STATA Output 2019

From the regression result presented in table 2, the R2 which is the multiple co-efficient of determination gives the percentage or proportion of total variation in the dependent variable (FV) which is jointly explained by the independent variables to be approximately 0.4511. This signifies that 45% of the total variation in the firm value of the listed oil and gas companies in Nigeria is explained by changes in managerial ownership, ownership concentration, board independence, gender

diversity and firm size while the remaining, which is about 55% is caused by other factors not captured in the model.

The cumulative result holds sway as the F-statistic has a high value of 10.82 which is significant at 5%. This means that the model can be well fitted with the variables selected. It further means that the selected variables are the major determinants of firm value of the listed oil and gas companies in Nigeria. The linear relationships among the independent variables with the dependent variable are discussed below.

The above table reveals that managerial ownership has a positive coefficient value of .4812474 and a t-value of 2.61 which is significant at 5% level of significance. This implies that managerial ownership influences the firm value of listed oil and gas firms in Nigeria, positively. It suggests that 1% increase in managerial ownership will lead to 48% increase in firm value. Therefore, the study rejected the first hypothesis ($H0_1$) of the study which states that managerial ownership has no significant effect on firm value of the listed oil and gas companies in Nigeria.

Moreover, the inferential statistics showed that ownership concentration has a positive coefficient value of .2338491 and a t-value of 1.15 with an insignificant value of 0.252 at 5% level. Which signifies that ownership concentration positively influences the firm value of listed oil and gas companies in Nigeria. This implies that the higher the ownership concentration the higher the firm value. The beta coefficient of .2338491 indicates that firm value increase by 23%.

The regression results further reveals that board size has a negative and significant effect on firm value of the listed oil and gas companies at 5% significant level. This can also be observed from the statistical t-value of -2.52 with probability value of 0.014. Which implies that an increase in board size significantly reduces the firm value of the listed oil and gas companies in Nigeria. The beta coefficient of -.0204601 indicates that firm value will reduce by 2% with an increase of a board of director. The finding serves as a base for the rejection of the null hypothesis three ($H0_3$) which states that board size has no significant effect on firm value of the listed oil and gas companies in Nigeria.

Board independence can be seen to be positively but insignificantly related to firm value, having a coefficient of .3055675 and a p-value of 0.197. An increase in proportion of non-executive directors of a company will increase the firm value of listed oil and gas companies in Nigeria. Based on this, the study fails to rejects the null hypothesis four ($H0_4$) which states that board independence has no significant effect on firm value of the listed oil and gas companies in Nigeria.

The regression results also reveal that gender diversity has a positive and insignificant effect on the listed oil and gas companies. Which can be observed from the statistical t-value of 0.54 with a probability value of 0.593. This shows that an

increase in the proportion of female directors on the board insignificantly affects the firm value of the sampled listed oil and gas companies in Nigeria. The beta coefficient of .2021886 indicates that the firm value will increase by 20% with an increase of at least a female director. The findings serve as a base for the failure to reject the fifth null hypothesis ($H0_5$) which states that gender diversity has no significant effect on firm value of the listed oil and gas companies in Nigeria.

The control variable, firm size has a significant and positive effect on firm value of the listed oil and gas companies in Nigeria, with a t-value of 6.75 and a probability value of 0.0000 suggesting the positive impact.

Based on the above, the study revealed that managerial ownership (MOWN) has a positive and significant effect on firm value of listed oil and gas companies in Nigeria. This result shows that managers in the listed oil and gas companies have the tendency of improving the value of the firms and the funds of the company will be properly monitored and protected. This finding is in line with those of Liman (2009), Noradiva, Parastou and Azlina (2016), Rizqia and Sumiati (2013) and not in line with Abdolkhani and Jalali (2013), Nooriha and Karunananda (2017) and Hakim and Reza (2013)

Also, board size (BSIZE) has a negative and significant effect on the firm value of listed oil and gas companies in Nigeria. That is, the size of the board of the sampled listed oil and gas companies in Nigeria has significantly improved firm value during the period of the study. This finding supports the findings of Amarjit and Neil (2011). On the contrary, the study provide evidence that the size of the board has positive significant statistical impact on firm value in Nigeria which supports the findings of Raluca-Georgiana (2013), Ozcan and Riza (2016) and Gurmeen (2015)

The study revealed a positive and an insignificant effect of ownership concentration on firm value of listed oil and gas companies in Nigeria. The implication of this is that, concentrated owners in the oil and gas companies in Nigeria despite their large funds do not have any influence on firm value of listed oil and gas companies in Nigeria. This finding is in line with Line (2003) and in contrast with Vintila and Gherghina (2014).

The study found that board independence (BIND) has a positive and an insignificant effect on firm value of listed oil and gas companies in Nigeria. That is, the independence of the board of directors of the listed oil and gas companies has insignificantly enriched the firm value in Nigeria during the period of the study. This finding is consistent with the study of Özgür, Mehmet and Cihan (2010), Georgeta and Ştefan (2013), Bishnu, Zunaidah and Fauzias (2008) and Le (2014) while inconsistent with the study of Henk, Rebel, Andy and Madhu (2005)

The study results further revealed that gender diversity has a positive and insignificant effect on firm value of the listed oil and gas companies in Nigeria. This demonstrates that an increase in the proportion of female directors on the board insignificantly affects the firm value of listed oil and gas companies in Nigeria. By implication, even though the percentage of female on the board of the listed oil and gas firms is very low, an increase in female representation on the board will enhance their firm value. This finding confirms the assertion made by Hoa and Robert (2007) and Peter and Hannu (2017).

Conclusion and Recommendations

Based on the findings of this study, the following conclusions were drawn:

i. Managerial ownership has a positive significant effect on firm value of listed oil and gas companies in Nigeria. Therefore, the study concludes that managerial ownership is a significant determinant of firm value of listed oil and gas companies in Nigeria.
ii. Board size has a negative significant effect on firm value of listed oil and gas companies in Nigeria. Therefore, the study concludes that board size is a significant determinant firm value of listed oil and gas companies in Nigeria.
iii. Ownership concentration has a positive insignificant effect on firm value of listed oil and gas companies in Nigeria. Therefore, the study concludes that ownership concentration is a significant determinant of firm value of listed oil and gas companies in Nigeria.
iv. Board independence has a positive insignificant effect on firm value of listed oil and gas companies in Nigeria. Therefore, the study concludes that board independence is a significant determinant of firm value of listed oil and gas companies in Nigeria.
v. Gender diversity has a positive insignificant effect on firm value of listed oil and gas companies in Nigeria. Therefore, the study concludes that gender diversity is a significant determinant of firm value of listed oil and gas companies in Nigeria.

In line with the findings and conclusions of this study, the following recommendations were suggested and deemed necessary:

i. The regulatory authorities such as the Security and Exchange Commission (SEC) should encourage the executive directors to invest more on equity shares of listed oil and gas companies in Nigeria, because 1% increase in managerial ownership will lead to 48% increase in the firm value of listed oil and gas companies in Nigeria, and also because

the findings of the study reveals that managerial ownership has a positive and significant effect on firm value

ii. The study recommends that the listed oil and gas companies in Nigeria should maintain a smaller board size because large board size can reduce the firm value.

iii. The management of listed oil and gas companies should float their shares to individuals that will provide a better monitoring mechanism with the aim of increasing firm value. Better monitoring mechanism is dependent on the amount of their equity stake. The higher their equity stakes, the more motivated they are to monitor and protect their investment which in turn will increase the firm value

iv. The board of directors of listed oil and gas companies in Nigeria should be composed of more independent non-executive directors who are experts in oil and gas industries.

v. The presence of female directors on corporate boards of listed oil and gas companies in Nigeria should be encouraged because individuals with different opinions from diverse background will improve the quality of decision-making and firm value.

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