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Effect of Corporate Governance Structure and Financial Reporting Quality of Quoted Pharmaceutical Companies in Nigeria

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Abstract. *The study investigated the Effect of Corporate Governance Structure and Financial reporting quality of quoted Pharmaceutical companies in Nigeria. A total of ten Pharmaceutical companies were used from 2006-2019. Data were extracted from the annual report and accounts of the Pharmaceutical companies in Nigeria. Financial reporting quality was calculated using Dechow and Dicher's (2002) model. The Housman test of multiple regression analysis was employed to test the hypotheses. The result found that Board independence has a positive effect on the financial reporting quality, Board compositions have a positive and significant effect on financial reporting quality, Board meeting has negative association on the financial reporting quality of pharmaceutical companies in Nigeria. The ownership structure also reflects the positive and significant financial reporting quality of the selected companies. The number of times the risk management committee meets yearly as an indicator of corporate governance structure yield a positive influence on the financial reporting quality of selected pharmaceutical companies. The result for a ratio of female members in the board, i.e. gender composition and numerical strength of Audit committee members each, is yielding positive and significant effect on financial reporting quality. The r-squared outcome of 55% implies the ability of the selected pharmaceutical companies in Nigeria. The regression model is also supported by the outcome of Durbin-Watson statistics which is close to 2, indicating the possible absence of autocorrelated in the regression model. It, therefore, recommends that quoted firms should adhere to the guidelines given by CBN and SEC on the code of corporate governance as it affects their financial reporting quality. Regular and spontaneous supervising functions/checks by the different regulating agencies are also recommended.*

Keywords: *Corporate governance; financial reporting quality; Pharmaceutical firm; Husman test; Dechow and Dicher model.*

Introduction

Financial Reporting is concepts that emerge first from formal record-keeping by organized business and Government. The issue of financial reporting is to provide investors, shareholders, and creditors with information that is useful for decision making, thus, to present users with transparent financial statements enhance decision making and avert business failure, which we have to maintain high-quality financial report.

The recent successive financial crises and the resulting confidence crisis in financial reporting within information and economic framework has drawn the world's attention to the role of corporate governance in ensuring the quality of the financial reporting processes, reducing fraud and false statements. This is especially after the scandals of big companies such as Enron in the United Kingdom and the collapse of WorldCom in the United States in 2001 and 2002, respectively.

One of the implementations of financial statements in the company is to improve business decisions. Investors and creditors use the financial statement as a tool to make investment decisions and loans. The financial statement shows how the company obtains its resources (funding), where and how the resources are used (investment), and how effective the use of those resources (profitability of operational) (Lice & Istian, 2008).

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Following the wave of accounting scandals that occurred recently both in international communities and local, this has raised so much criticism about the financial reporting quality (Agrawal & Chadha, 2008;). The widespread failure in the financial disclosure has created the need to improve the financial information quality and to strengthen the control of managers by setting up a good governance structure (Karamaou & Vateas, 2005). This is because the presentation of credible, acceptable, and reliable financial reports is the fundamental basis of decision-making in any organization (Ojeka, Iyoha, & Obigbemi, 2014). With this, users of financial statements become worried when high-profile businesses collapsed, and financial frauds were reported in renowned firms-including large companies like Enron, WorldCom, Tyco, and Global Crossing (Hwang & Staley, 2005). Following these corporate failures, the governments of different countries came together to form Corporate Governance, which will now look into the affairs of the different businesses so that any financial statement that is coming out will be free and fire without basis. Responding to this, the US congress crested the Sarbanes-Oxley Act in 2002 and introduced a new era of corporate governance, incorporating requirements for auditors' independence, independence of firms audit committee, the responsibility of a firm's Chief Executive (CEO), and Chief Financial officer (CFO) for the financial report and the protection of whistleblowers. This single act made corporate governance in developing and developing countries a crucial mechanism for government regulation of private and public companies. Our country Nigeria is not exempted from fraudulent financial cases, and corporate governance failures were equally reported, such as Cadbury Plc, Nigeria Telecommunication Limited (NITEL), Nigeria Coal Corporation (NCC), and Leventis Plc. The Banking sector is not left along with the unprecedented cases of non-performing loans in the Nigerian banking industry that consumed banks such as International Bank Plc. Oceanic Bank, Bank PHB, and Afribank Plc all led to a significant review of corporate governance regulatory reforms in Nigeria and some other developing economics (Adeyemi, Dabor, & Okpala, 2012).

Corporate governance refers to the process that seeks to direct and control the affairs of an organization, to protect the interest of all stakeholders in a balanced manner with the application of the principles of openness, integrity, and accountability (Obeten, Ocheri, & John, 2014). Gabrielsen, Gramlicn, and Phenbong (2012) defined corporate governance as all encompassing-it concerns how corporate entities are managed and regulated, and involves accountability, trust, honesty, and stewardship on the one hand and supervision, control monitoring oversight, and ensuring quality financial reporting on the other hand.

The Pharmaceutical sector in any economy plays a prominent role in the general health of citizens residing in the country. Nigeria is not an exception, owing to its significance in the general welfare of the economy; it is the imperative general welfare of the economy, this imperative to give serious attention to issues that concern this sector. The Nigeria Pharmaceutical sector is known to be complex as it involves numerous players (Manufactures, national regulators, wholesalers and retailers, government ministries, and other stakeholders). This means that there is a need for these stakeholders to put in additional effort to create an enabling environment to exploit the full potentials of the sector. The pharmaceutical Manufacturers Group of Manufacturers Association of Nigeria (PMG-MAN, 2010) asserted that the Nigerian pharmaceutical sector has the potential to be a leader in the production and distribution of pharmaceuticals in Nigeria.

Although Nigeria has a large human Capital (approximately 190 million people) and vast natural resources, the country is still fraught with poverty, diseases, and malnutrition (World Health Organization, 2103). The World Health Organization (WHO) rated Nigeria's health sector 187th out of 191 members (WHO 2000). The Nigeria business environment is being seen in some quarters as not too conducive for investment to both local and foreign investors. Reasons being the inability of financial reports to meet the needs of different group users. The prevalence of fraud, excessive earnings management, and other financial crimes has reduced the level of confidence reposed in these financial statements.

Hence the study aims to investigate how corporate governance structures affect the financial reporting quality of quoted pharmaceutical companies in Nigeria. The remaining part of the paper is divided into four sections, section two treats a review of related literature, section three is the methodology adopted section four deals with data analysis and five is on summary of findings, conclusion, and recommendations.

Review of related literature

The concept of Corporate Governance

According to Nagw, Hala, and Gamal (2014), corporate governance refers to the structures and processes for the management and control of companies. It involves a set of relationships between a company's management, its boards, its shareholders, and other stakeholders in a way that provides the structure through which the objective of the company is set, and the means of attaining those objectives and monitoring performance are determined. Corporate governance is a mechanism of rights and duties by which firms are controlled and directed (Pacy, 2012). Obeten, Ocheni, and John (2014) define corporate governance as the process that seeks to direct and control the affairs of an organization to protect the interest of all stakeholders in a balanced manner with the application of the principle of openness, integrity, and accountability.

Gabrielsen, Gramlich, and Plenborg (2012) define corporate governance as all encompassing-it concerns how corporate entities are managed and regulated and involves accountability, trust, honesty, and stewardship on the hand supervision, control monitoring oversight, and ensuring quality financial reporting on the other hand.

Components of corporate governance structure

Board Meeting: This has to do with the number of times the board of directors officially meets to discuss issues concerning the company. An important measure of corporate board monitoring power and effectiveness is the frequency of board meetings. The frequency of board meetings measures the intensity of board activity and the quality or effectiveness of its monitoring (Vefees, 1999; Conger, Finegold, & Lawler, 1998).

Ownership structure: This implies the proportion of the total number of common shares owned by the board of directors to the total number of common shares outstanding. Barle and Means (1932) brought to light the principal agency problem when they argued that the separation of ownership from control of modern corporations reduces management incentives to maximize corporate efficiency.

Audit Committee: Section 359 of companies and Allied Matters Acts 1990 expressly provides for the establishment of an audit committee by quoted companies in Nigeria. Usually, the committee is made up (6) six members of equal representation. The Audit Committee serves as a bridge between the external Auditor and Board of Directors. They view the company's position in a detached and dispassionate light and often liaised between the board and external auditors to ensure that areas of differences are resolved.

Board sizes: Board size is the total number of headcounts of directors seated on the company's board. It comprises the number of individuals serving on the board of a firm (Ahmed & Mansur, 2012). The code of governance states that the number of non-executive directors should be more than that of executive directors subject to a maximum board size of 20 directors (CBN, 2006) and 15 directors (SEC, 2003). Both codes recognize large board sizes.

Board Composition: This refers to executive and non-executive directors' representation on the board. Empirical studies on the effect of board membership and structure on firm

performance have revealed mixed or opposite results. Some researchers find that firms with a board of directors denominated by outsiders perform better.

The Risk Management Committee: The Committee assists in the oversight of the risk profile, risk management, and risk-reward strategy as determined by the board. Their function includes, among others, review and approval of the companies' risk management, reviewing the adequacy and effectiveness of risk across the company and the adequacy of prevention, detection, and reprinting mechanism, review laws and regulatory requirements that may impact the company's risk profile.

Board Member Gender: In many countries, the question concerning getting more women on boards and in top executive jobs has become a highly debated issue. It is argued that women directors on corporate boards after many contributions. Corporations can gain a competitive advantage by being receptive to women's contributions at the top. For example, having women on boards impacts the reputation of a company, provides strategic input on women's product/market issues and of board processes and deliberations, and contributes to the firms' female employees.

Concept of financial reporting quality

Verdi (2006) defined financial reporting quality as the exact manner in which it shows information regard business activity and its anticipated cash flow, intending to inform the shareholder about a company's operations. Martinez-Ferrero, Garcia-Sanchez, and Cuadrado-Ballesters (2013) also defined financial reporting quality as the faithfulness of information conveyed in the financial reporting process. Financial reporting is also defined as the degree to which financial statements provide us with information that is fair and authentic about the financial position and performance of an enterprise (Tang, Chen, & Zhijun, 2008). It can be deduced from the above definition that for a financial statement to be regarded as possessing a high-quality attribute, it must be able to provide genuine authentic information about the economic performance of the firm.

According to Hopen and Kemebradikemor (2019), financial reporting is defined as the faithfulness of information conveyed in both the financial and non-financial reporting process. The financial statement of firms at the end of a financial year should have some element of truth in it. This is termed quality to increase the confidence of users.

Methods of measuring the quality of financial reporting

Financial reporting quality can be accessed directly or indirectly. Directly, it can be measured using the Accruals model, the Value relevance model, using specific elements in the annual report, and by operation ling the qualitative Characteristics (Beest, Braam, & Boelens, 2009).

Accruals Model focuses on the quality of earnings measured, and the major assumption it holds is that managers use discretionary accruals to manage earnings (Dechow, Sloan, & Sweeny, 1995; Healy & Wahlen, 1999). Earnings management is assumed to negatively affect the quality of financial report by reducing it decision usefulness. The main merit of this model is that it uses accruals to measure earnings management and is calculated based on the information present in the financial statement (Beest, Braam, & Boelens, 2009). Dechow and Dichev (2002) modified this model called the Jones model, in this modified Jones model, accounts receivables were taken into consideration by this model. Estimating normal accruals in the first stage is similar to the model. The modified Jones reasons that all changes in credit sales in the event period result from earnings management.

The modified Dechow and Dichev's (2002) model is specified as:

$$\Delta WC_t = CFO_{t-1} + CFO_1 + CFO_{t+1} + \Delta Sales_t + PPE_t + \epsilon$$

Where:

ΔWC = Working capital in year t , i.e. Accounts receivables + Δ Inventory – Accounts payable – Taxes payable + other assets (net)

CFO_{t-1} = cash flows from operations in year $t-1$

CFO_t = Cash flow from operation in year t ;

CFO_{t+1} = Cash flows from operation in year $t+1$

$Sales_t$ = Sales in year t less sales in year $t-1$;

PPE_t = Gross property, plants, and equipment in year t

This measure of earning quality capotes the extent to which accrual maps into cash flow realization in the past, present, and future cash flows. The higher the absolute residual for each sample firm, the lower the quality. This model is also supported by the works of Nuraddeen and Hasuah (2014). In which the concluded that the Modified Jones model could detect earnings management better than other models.

Theoretical framework

Stewardship theory

This theory is in contrast with agency theory. Stewardship theorist upholds that directors frequently have interests that are consistent with those of shareholders. According to them, there will not be any major agency cost since managers are naturally trustworthy (Donaldson, 2003). Donaldson and Davis (1991) suggest an alternative model where organizational role holders are reconceived as being motivated by a need to achieve and gain intrinsic satisfaction through successfully performing inherently challenging work, to exercise responsibility and authority, and thereby to gain recognition from peers and bosses. According to them, where managers have served a corporation for several years, there is a merging of individual ego in the corporation.

Stewardship theory postulates that a steward protects and maximizes shareholder wealth through firm performance because by doing so, the steward's utility functions are maximized. The steward derives greater utility from satisfying organizational goals than through self-serving behavior. The theory recognizes the essentials of structures that empower the steward, offering maximizing autonomy built upon trust. The Minimizes the cost of mechanisms aimed at monitoring and controlling behaviors.

Empirical reviews

Hopen and Kemebradikemor (2019) investigated the impact of board characteristics on the financial reporting quality of listed Manufacturing firms. The study made use of a deductive research approach using a Multi-method qualitative research approach and multi-method qualitative research design, while generalized linear model regression was used in testing the hypotheses. Findings revealed that Board expertise was statistically significant and positively related to financial reporting quality at 5% level of significance, while board independence and board diversity were found to be insignificantly related to financial reporting quality at 5% level of significance. The study concluded that board characteristics partially affect financial reporting quality.

Samuel, Mudzamir, and Mohmmad (2017) examined the relationship of audit committee size and financial reporting quality of Quoted firms in Nigeria, from 2011-2015 using 189 companies. Panel data regression was adopted audit committee size was found positive and significant with financial reporting quality. Halder and Mishre (2017) examined the timeliness of financial reporting and corporate governance. In a study of Indian Pharmaceutical industries, the study made use of 50 sample pharmaceutical companies in India; it made use of exploratory study. The result shows that the numbers of days taken by the sample companies are fluctuating, and there is no consistency between reporting companies.

Onuorah and Imena (2016) researched corporate governance and financial reporting quality in a selection of Nigerian companies. The concerning issue was how corporate governance indicators such as structure, audit the quality of external audit quality the quality of external audit, and board independence affect financial reporting quality in selected Nigeria company. The companies selected were from commodities, brewery, banking, oil and gas, and beverages. The period of the study was from 2006-2015. Econometric analysis was used for the study. The study concluded that corporate governance indicators have a positive impact on financial reporting quality measured by the discretionary accruals of a firm.

Ibrahim, Ahmad, John, and Rahma (2016) examined corporate regulations and the quality of financial reporting. A proposed study. The issue of concern was to find out how the new code regarding the independence of the board in relation to the quality of financial information reporting. To find the distinct impact of the code, the paper divided the study into two years pre (2010-2011) and two years post (2013-2014) context of the code. The study made use of 300 non-financial listed companies' financial sectors except banks in Malaysia. The study used Pearson's and spearman's correlation and multiple regressions. The study concluded that corporate regulations have effects on quality

Mubarak(2016) examined the impact of Corporate Governance on the quality of financial reporting in the Nigerian Chemical and Paint industry. The period of the study was between 2009-2103 with a sample of four (4) companies used, and data were analyzed using correction regression and the variable used were Board size, Board independence, and Audit committee. The study concluded that Board size as well as Board impendence has an insignificant effect on the quality of financial reporting in the Nigerian chemical and Paint Industry; it went further to say that non-executive directors in the audit committee have an insignificant effect.

Ahmed, Cheng, Shamsher, and Tanfia (2016) investigated corporate governance reforms and financial reporting quality of Middle East stock markets. The objective was to find out the effect of corporate governance reform and financial reporting quality on non-financial firms listed at the Saudi stock market before and after the reform was applied to the listed firms. The study adopted working capital accruals quality as a measurement of the financial reporting quality. An independent sample t-test was performed to investigate the trend of the FRQ in the selected countries. The result shows that the applied corporate governance reform was efficient, and the FRQ improve for the era after corporate governance reform in the Middle East stock market. The study period was 1996-2011.

Popove, Georgakopoulos, Sotiropoulos, and Vasileirus (2013) investigated the relationship between mandatory disclosure and financial reporting quality using a sample of UK companies included in the FTSE350 index. The findings showed that the average mandatory disclosure index for five years period is 91.51 %(with a minimum of 69.31% and a maximum of 100%).

Hypotheses

Considering the divergent results of empirical works reviewed above, this study hypothesizes that: corporate governance mechanisms (Board independence, Board composition, Number of Board meeting, and Ownership structure, number of Risk Management Committee meetings, Number of female membership, and number of Audit committee members) do not have a significant effect on financial reporting quality of quoted pharmaceutical companies in Nigeria.

Methodology

Research design

The research design adopted for the study was *ex-post facto* as the study used documented dates that were extracted from the annual report and accounts of the sampled firms. Given the use of documented data for the study, the uses of *ex-post facto* research design are thought justified and, as such, are not subject to manipulation. Purposive sampling was used to select ten quoted Pharmaceutical firms in Nigeria that have a complete data point for the relevant number of years. The study period of the research is from 2006-2019.

Source of data

To assess Corporate Governance structure on financial reporting quality, the data selected for the research were secondary in nature and collected from the published audited financial statement of Pharmaceutical firms covering a period 2006-2019.

Operational variables

The study is based on the corporate governance structure and financial reporting quality of listed pharmaceutical companies in Nigeria. Financial reporting quality is the dependent variable. In this study, Modified Accrual Model is used to compute the financial reporting quality proposed by Dechow and Dichev (2002).

The model is operationalized as

Accrual model

$$\Delta WC_t = CFO_{t-1} + CFO_1 + CFO_{t+1} + \Delta Sales_t + PPE_t + \varepsilon$$

Where:

ΔWC = Working capital in year t, i.e. Accounts receivables + Δ Inventory – Accounts payable – Taxes payable + other assets (net)

CFO_{t-1} = cash flows from operations in year t-1

CFO_1 = Cash flow from operation in year t;

CFO_{t+1} = Cash flows from operation in year t+1

$Sales_t$ = Sales in year t less sales in year t-1;

PPE_t = Gross property, plants, and equipment in year t

The independent variables in the study are Board composition, Board Size, the number of Board meetings, Ownership structure, Gender composition, Risk management committee, Audit committee of the selected banks under study.

Model Specification

The statistical tool of the model for testing the hypotheses is expressed as follows:

$$AM = \beta_0 + \beta_1 BC + \beta_2 BC + \beta_3 BM + \beta_4 OS + \beta_4 OS + \beta_5 RMC + \beta_6 GC + \beta_7 AC + \mu \dots \dots 1$$

Where:

Am = Accrual Model - Proxy for Financial reporting quality

β_0 = estimated of the true intercept β_0 , β_1 , β_2 , β_3 , β_4 , β_5 , β_6 and β_7 are parameters to be estimated

μ = stochastic term

BI = Board Independent

BC = Board Composition

BM = Board Meeting

OS = Ownership Structure

RMC = Risk Management Committee

GC = Gender Composition

AC= Audit Committee

Data analyses

In analyzing the effect of corporate governance on the financial reporting quality of quoted manufacturing companies in Nigeria, multiple regression and Pearson correlation coefficients were used to analyze the data with the aid of E views statistical software.

Descriptive analysis for the pharmaceutical sector

The seven corporate governance indicators selected for this study and also accrual, which served as a proxy for financial reporting quality, were extracted from the financial reports of the different pharmaceutical companies in Nigeria to form a panel study data. All the variables were descriptively analyzed to obtain some idea as it pertains to their behavior in terms of spread and variability. The essence is to serve as a guide to further analyses made in the course of this research work. The results of the descriptive statistics for all the variables are shown in Table 1 below.

Table 1. Result of Descriptive Analysis

	BI	BC	BM	OS	RMC	GC	AC	LOGACCRUAL
Mean	1.852917	0.629750	4.066667	0.223302	2.766667	1.824292	5.100000	0.803982
Median	1.600000	0.640000	4.000000	0.217087	3.000000	2.000000	6.000000	0.475671
Maximum	4.500000	0.800000	6.000000	0.337393	5.000000	5.000000	6.000000	2.168792
Minimum	0.800000	0.300000	3.000000	0.178151	0.000000	0.080000	4.000000	0.143015
Std. Dev.	1.014502	0.822736	0.590304	0.889741	1.261807	1.633980	0.990713	0.663804
Skewness	1.189090	1.141644	1.217239	-0.608930	-0.133778	0.338142	-0.200986	1.128208
Kurtosis	3.386955	3.052241	6.488891	2.172374	2.473789	1.867642	1.057691	2.798221
Jarque-Bera	29.02739	16.08066	90.49519	10.84075	1.742421	8.697977	19.67072	25.66063
Probability	0.000000	0.000002	0.000000	0.004425	0.418445	0.012920	0.000054	0.000003
Sum	222.3500	135.5700	488.0000	102.7962	332.0000	218.9150	612.0000	96.47790
Sum Sq. Dev.	122.4765	80.55049	41.46667	94.20503	189.4667	317.7170	116.8000	52.43563
Observations	120	120	120	120	120	120	120	120

Source: Researcher's Eviews Output 2018

The result of the descriptive analyses as contained in Table1 above indicates that board independence is widely varied but not equitably spread its mean. The observations flow from the minimum of 0.80 to a maximum of 4.50 but have an overall tendency towards the minimal level, as is evidenced by its median score of 1.60. this result of the median is even more supported by the outcome of the mean, which is 1.85, thereby suggesting most of our selected pharmaceutical companies for the various years maintained board independence of two non-executive directors to one executive director as against the implication of the maximum outcome which appears to be on a high side of four non-executive directors to one executive director.

Board composition has a considerable level of variability in comparison to board independence. This suggests that the variations in the ratio of non-executive directors to the total number of directors within the pharmaceutical sector in this study are fairly spread, as can be deduced by its median score of 0.64 and mean score of 0.63

approximately. This finding implies that selected pharmaceutical firms in this study maintained a high number of non-executive directors in relation to the total number of directors in each of the firms within the years covered in the study. As suggested in the findings for board independence, this high number of non-executive directors is around two for every one executive director (66%) on average. This is an indication that board compositions across the ten selected pharmaceutical companies in this study were dominated by non-executive directors on average, but at some few points or in some companies, the ratio of the compositions was rather low as depicted by the minimum board composition, which can be interpreted as 3 non-executive directors out of a total of 10 directors.

Board meetings, according to the result obtained in the above Table 1, increased from the minimum value of 3 times per year to a maximum of 6 times in a year across the ten selected pharmaceutical firms. This level of variability is narrower than the range of disparity that was obtained for the board composition, thereby suggesting comparable behavior for selected firms within the pharmaceutical sector in terms of board meeting frequencies. Concerning the spread of the variables around the mean, the results show that board meetings have held an average of four times in year across the ten selected firms in this section of the study. The median outcome of 4.00 approximately also shows that the disparity that could exist in the frequencies of board meetings for pharmaceutical companies selected in this study is evenly spread. So, it can be concluded that board meetings in the pharmaceutical sector were held an average of 4 times within the years covered in this study.

Ownership structure for the pharmaceutical sector, on the other hand, does not possess much variability as its peak is 0.34 approximately with the lowest value of 0.18; thus, the median outcome of 0.22 suggests that the observations for ownership structure are dominantly close to the minimum value than they are to the maximum outcome. It also implies that directors' shareholdings in the selected pharmaceutical firms in this study are more inclined to be around 22% approximately. The implication for the median is also supported by the mean value of 22%, which indicates that an average firm in the pharmaceutical sector has an ownership structure of 22% shareholdings by its directors.

The number of times members of the risk management committee meet on average in a given year is three times approximately, whereas the mid-value of all the observations is also three times annually. However, this general perspective may becloud the cases of extremities in the data range of the whole companies in this sector. Thus, the minimum value of 0.00 reveals that some selected pharmaceutical companies do not have risk committee management meetings throughout some of the years covered in this study, whereas the maximum outcome of 5 times also suggests that some companies had the same meetings for up to 5 times in a year. It is also no Table that risk management committee meetings for the pharmaceutical sector have an average of 3 times per year which suggests that the selected firms in the study each conducts risk management meetings three times on average. The median value also supports this outcome since it implies that between the maximum and minimum, which are five times and nil respectively, more firms in the selection and the years covered are inclined to having the meetings from 3 to 5 times in a year. Hence, we conclude that risk management committee meetings are held three times on average by firms in the pharmaceutical sector and that the observations are considerably tilted to the maximum value.

Gender composition for the pharmaceutical sector shows a maximum value of 5 and indicates that at least one of the selected pharmaceutical companies at some point within the 12 years covered in this work has a composition of 5 female board members to one male. This outcome is rather rare as none of the previous sectors in this work has had up to one female to one male directors' composition. However, the outcomes of both the mean and median scores indicate that more observations for gender compositions of the boards tend towards 2 females to 1 male board member. This result suggests that female members dominate the board compositions of pharmaceutical companies in Nigeria.

Audit Committee membership in the results of the descriptive statistics shown in Table1 above is five members on the average for pharmaceutical companies in this work. The median value of 6.00 as against the maximum of 6 suggests that at least half of the total observations on audit committee members of pharmaceutical companies are six members, whereas the other half may be a combination of 6, 5, and 4, which is the minimum value. This highlights the possibility that most firms in the panel of the ten selected pharmaceutical companies may have maintained audit membership strength of up to 6, whereas lower audit committee strength of 5 and 4 members was only maintained minimally.

The financial reporting quality of selected pharmaceutical companies in this study captured by accrual is not considerably varied considering its minimum logged value of 0.14 as against the maximum value of 2.17 approximately. The observations are not fairly dispersed as its median value of 0.48 approximately suggests that the variable is rather tilted to the minimum value. The results here, therefore, suggest that our selected firms may have few companies with higher accrual values than the rest. It can also mean that some of the selected companies got very high and low accrual outcomes in different years within the years covered in this work.

Discussion of pharmaceutical sector regression results

This section deals with the estimation of the regression analysis for all the corporate governance indicators on the financial reporting quality of selected firms within the pharmaceutical sector, and this was done using a fixed/random-effects model, which makes a selection from two regression estimates based on the outcome of the Hausman test.

The pair of hypotheses proposed by the Hausman test analyses consists of:

H0: Random effect regression model is more appropriate.

H1: Fixed effect regression model is more appropriate.

Table 2. Hausman Test for Fixed and Random Effects Models

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	5.257365	7	0.6286	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var (Diff.)	Prob.
BI	0.052341	0.052276	0.000000	0.8185
BC	0.072058	0.070050	0.000003	0.2527
BM(-1)	-0.004791	-0.004604	0.000000	0.5117
OS(-2)	0.045342	0.046125	0.000000	0.2464
RMC	0.007374	0.007224	0.000000	0.4475
GC	0.016408	0.016346	0.000000	0.8702
AC	0.005474	0.005064	0.000001	0.6037

Source: Researcher's Eviews Computation 2018

According to the result obtained for the Hausman test of the selected companies in the pharmaceutical sector in Table2 above, the result for the Chi-square statistics of the Hausman test is not significant at 5%, so we accept the null hypothesis. The null hypothesis of the above test proposes the acceptance of the random effect model, which assumes a mean value for the intercepts of the various selected pharmaceutical companies, whereas the alternative hypothesis suggests that the fixed effect regression

model is appropriate, including the assumption that though intercepts may differ among the various firms, it remains time-invariant.

However, the result of the Hausman test having a probability value that is more than 5% accepted benchmark will lead to acceptance of the null hypothesis and conclusion that the random effect regression model is the appropriate model for the regression analysis of the pharmaceutical sector.

Table 3. Panel multiple regression of corporate governance indicators on financial reporting quality of pharmaceutical companies in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.761235	0.273608	2.782207	0.0066
BI	0.052276	0.008961	5.833909	0.0000
BC	0.070050	0.025373	2.760819	0.0070
BM(-1)	-0.004604	0.011589	-0.397268	0.6921
OS(-2)	0.046125	0.013634	3.383001	0.0011
RMC	0.007224	0.005792	1.247152	0.2155
GC	0.016346	0.007803	2.094677	0.0389
AC	0.005064	0.014891	0.340083	0.7346
Effects Specification				
			SD.	Rho
Cross-section random			0.783276	0.9960
Idiosyncratic random			0.049788	0.0040
Weighted Statistics				
R-squared	0.552694	Mean dependent var	0.016267	
Adjusted R-squared	0.511051	S.D. dependent var	0.064259	
S.E. of regression	0.049314	Sum squared resid	0.223732	
F-statistic	10.87087	Durbin-Watson stat	1.711553	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.423935	Mean dependent var	0.809422	
Sum squared resid	44.67452	Durbin-Watson stat	1.607570	

Source: Researcher's Eviews Computations 2018

Hence based on the Hausman test results, we use the random effect regression result in Table3 to explain the association of corporate governance structures and financial reporting quality.

According to the regression result, the beta coefficient of board independence yields a positive value which suggesting that board independence of the firms attracts a direct response from the financial reporting quality of selected firms. The implication is that positive variations in the ratio of non-executive directors to the number of executive directors in the pharmaceutical companies' boards will be associated with a corresponding positive reaction from the financial reporting quality of the pharmaceutical companies at a statistically significant level of 1%. Hence the study concludes that board independence has a significant and positive influence on the financial reporting quality of pharmaceutical companies; thus, decisions concerning corporate governance, especially as it concerns board independence, should always consider possible effects it tends to offset on the financial reporting quality of the firm. These results tally's with the findings of Onurorah and Imen (2016). But it remarkably differs from previous studies by Gois

(2014), Uwuigbe, and Oyemi (2014), who found Board independence to be insignificant to the financial reporting quality of pharmaceutical firms.

Board composition also has a positive and significant effect on the financial reporting quality of pharmaceutical companies. The implication is that the financial reporting quality of the selected pharmaceutical firms responds to changes in the board composition of pharmaceutical companies in the same direction as board composition. The finding here is in agrees with the idea proper inclusion of non-executive directors who are not servants of the company into its board will promote decisions made as the non-executive directors tend to judge issues objectively, having no self-review threat when there is a need to appraise team performance. Hence, we conclude in line with the outcome of the beta coefficient (0.05) and probability of the t-statistics (1%) on Table 4.28 above that the board composition of selected pharmaceutical companies in this study has a significant and positive influence on financial reporting. Akeju and Babatude (2017) and Garba (2014) support these findings that Board Compositions help to befit up financial reporting quality.

However, board meetings have a negative association with the financial reporting quality of selected pharmaceutical companies at the lag length of one year. This indicates that frequencies of board meetings for the selected companies in the pharmaceutical sector of Nigeria are associated with a negative reaction in the financial reporting quality after the space of one year. It also implies that the board meetings of the selected companies are not yet optimal to attract a direct reaction from their financial reporting quality even though the t-statistics of the beta coefficient is not within the accepted statistical bound of 5%. The study, therefore, concludes that board meetings of selected pharmaceutical companies in this study have a negative and non-significant effect on their financial reporting quality. This finding is in with Waidi & Karreem (2017) that Board meetings do not have a significant effect on financial reporting quality in that we do not know the quality of meeting they have and the number that attended the meeting, which concluded that Board meetings are a weak predictor of financial reporting quality.

Owners' structure was lagged at the length of two years to obtain a positive influence on the financial reporting quality of the sampled pharmaceutical firms, according to the findings contained in Table 4.28 above. The implication of this finding could be that the more directors are grafted to become financial stakeholders in the companies they are managing, the better their performance in maintaining the quality of the financial reports. The positive association between owners' structure and financial reporting quality of these selected companies in the pharmaceutical sector is also found to be significant at 1%, suggesting that the relationship that flows from owners' structure to financial reporting quality can be relied upon in making statistical predictions and inferences. This result also agrees with the result of the Granger Causality Test, which states that owners' structure has a causal and significant influence on the financial reporting of firms in the pharmaceutical sector. So in the light of these findings, we conclude that owners' structure as a vector of corporate governance has a significant and positive effect on the financial reporting of firms after two years lagged. This result is supported by the works of Adebiyi and Olorokee (2016), Faith (2013), Jamil Al-Suly (2013) found that ownership structure is a determinant of financial reporting quality.

Risk management committee meetings yield a direct influence on the financial reporting quality of selected companies in Nigeria, as shown in Table 4.28 above. This view is obtained from the fact that the beta coefficient for the risk management committee (RMC) is 0.007, approximately suggesting that the frequency of annual risk management committee meetings of the ten selected companies has a positive relationship with the financial reporting quality of the pharmaceutical firms. This finding suggests that the financial reporting quality of companies in the pharmaceutical sector responds positively to the frequency of risk management committee meetings and also implies that the activities of the committee contribute to the effectiveness of financial reporting of the companies even though it is non-significant. So, in consideration of the probability of the

t-statistics of risk management committee meetings which is above 5%, we conclude that risk management committee meetings as an indicator of corporate governance of firms have no significant influence on financial reporting quality.

Gender compositions of selected pharmaceutical companies have a positive and significant effect on financial reporting quality. This outcome implies that the numerical strength of female to male board members yields a significant and positive effect on the financial reporting quality of the pharmaceutical companies in Nigeria. It follows that the dilution of male dominance in the composition of the board of directors of the companies shows a positive and significant effect on the financial reporting quality of the pharmaceutical companies selected in this study.

However, the number of audit committee members of pharmaceutical firms over the selected years in this study, on the other hand, attracts a positive response from the variations occurring in their financial reporting quality. But the association is not statistically significant at 5%; we conclude that the audit committee has a positive but non-significant influence on the financial reporting quality of the firms within the pharmaceutical sector in Nigeria. This is in line with the findings of Oluchukwu and Somtochukwu (2017). Moses, Ofurum, and Egbe (2016) found it to be a poor predictor for financial reporting quality in the pharmaceutical companies selected in this study

The residual statistics of the multiple regression models in Table3 also support the beta coefficients of the individual variables, thereby strengthening the implications of the results. The r-squared of 0.55 suggests that our regression model, which regressed corporate governance indicators on financial reporting quality of pharmaceutical companies, is well-fitted. This is because the r-squared outcome of 55% shows the ability of the selected explanatory variables to predict more than half of the changes that occur in the financial reporting quality of the selected pharmaceutical firms in Nigeria.

The probability value of the f-statistics is significant at 1% supporting the credibility of the regression equation and powers of the independent variables in predicting changes that occur in the financial reporting quality of the selected pharmaceutical companies. The Durbin-Watson statistics which has a value of 1.72 being close to 2 supports the outcome of the regression model and also suggests the near absence of autocorrelation among the series that estimated the above regression model.

Conclusion and recommendations

This study was targeted at unveiling the importance of corporate governance structures in enhancing financial reporting credibility and reducing opportunistic behavior in the Nigeria Pharmaceutical industry. Hausman test of multiple regression was employed to investigate the hypothesized relationship. In line with the previous works, discretionary accrual was used as a proxy for financial reporting quality. Results revealed that Board Independence, Board Computation, Ownership structure, Risk Management Committee, Gender composition, and Audit committee have a positive association, while Board Meeting has a negative impact on financial reporting quality. Based on the findings of this study, the following policy recommendations are proposed: This study recommends that the SEC Code of Corporate Governance (2003) on the attendance of Board meetings. This study also recommends to regulators that in addition to the independence of the Audit Committee, the Chairman of the Audit should be a person with strong financial analysis background or a Professional Accountant. Regular and spontaneous supervision function/checks by the different regulatory agencies are also recommended, while stiff sanctions should be melted out to Boards/Managers who violate these codes of corporate governance.

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