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## Audit Quality and Accrual Quality in Nigerian Quoted Manufacturing Firms

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### **Abstract:**

*The impact of an audit on the accounting information quality stem from its role in mitigating the falsification of the economic and financial reality of the firm. Accordingly, the financial information audited by an external auditor is inclined to have better information content, helping users in making better decisions and as such generating greater economic benefits. However, the series of corporate failures in the world has made financial report users question the audit quality for decision making. The quality of an audit has been a debated issue in recent times and evidences put forward show that lack of audit quality is among the most significant reason for financial and corporate scandals. This study investigated the effect of audit quality on accrual quality of Nigerian listed manufacturing firms. The study employed ex-post facto research design. The population of the study was 53 manufacturing firms listed on the Nigerian Stock Exchange as at 31<sup>st</sup> December 2017. A sample of 30 firms for a period of 10 years (2008-2017) was selected purposively. Data were analyzed using mean, percentages, pooled OLS, random effect, fixed effect and generalized least square method. The study found that audit firm size and audit committee expertise exerted a significant positive influence on accrual quality, size exerted a significant negative influence on accrual, audit tenure and sector based specialization had insignificant negative effect on accrual quality, while audit firm independence and age had insignificant positive effect on accrual quality while. But the relationship between the number of audit firm engaged and accrual quality is in doubt, this relationship could not be proved or disproved based on the regression analysis result. This study concluded that audit firm size, audit tenure, sector based specialization, audit firm engaged, audit firm independence, audit committee expertise after being controlled by size and age of the firms bring about accrual quality. The study recommended that in relying on the financial report to take decisions, users of these statements should consider these major audit attributes which have been found to greatly improve the accounting numbers.*

**Keywords:** Audit quality, accrual quality, accounting information, corporate failure, decision making

### **1. Introduction**

The impact of an audit on the accounting information quality stem from its role in mitigating the falsification of the economic and financial reality of a firm Dechow Ge & Schrand (2010). Accordingly, the financial information audited by an external auditor is inclined to have better information content, helping users in making better decisions and as such generating greater economic benefits (Iana, Paulo & Edilson, 2013). However, the series of corporate failures in the world has made financial report users question the audit quality thereby bringing a need for an evaluation of the audit quality. The quality of an audit has been a debated issue in recent times and evidences put forward show that lack of audit quality is among the most significant reason for financial and corporate scandals (Soltani, 2014). According to Adeyemi, Okpala & Dabor (2012), empirical studies need to be carried out in respect of ascertaining how audit quality may likely have severe consequences for the Nigerian Capital Market.

Li, Stokes, Taylor and Wong (2009), opine that the observable attributes of audited financial data reflect the fact that financial statements are a joint product of management representations and the audit process. According to them, while the quality of the financial report and the quality of the audit are distinct properties, it also follows that judgments about the quality of the financial report will be influenced by the perceived level of audit quality attached to the report. The quality of an audit is recognized to influence the financial reporting and strongly impact on investors' confidence (Levitt, 1998).

Audit quality according to some studies has been assessed to be based on two basic concepts such as the auditor's competence and independence (De Angelo 1981). De Angelo (1981) defines audit quality from these two dimensional definition by the first, focusing on detecting misstatements and errors in financial statement while the second, looked at reporting these material misstatements and errors. Also Bing, Huang, Li and Zhu (2014), classified various defining terms of audit quality into two broad categories, direct definition and indirect definition. 'Direct' category if the authors define

audit quality looking at financial reporting compliance with General Acceptable Accounting Principle (GAAP), quality control review, bankruptcy, desk review and Stock Exchange performance (Chadegani 2011) without relying on any proxies.

Conversely, recent financial scandals and the collapse of one of the audit giants, "Arthur Anderson's firm" showed the incapacity of these concepts to understand the audit quality on their own (Smii, 2016). Thus, it is necessary to reconsider the current valuation rules and propose new measures that take into account the complexity of the audit work (Carcello & Nagy, 2004). In this regard, other criteria appeared to be reliable indicators of the audit quality (Smii, 2016). According to Fujio (2016), studies have widely used five proxies for audit quality being an unobservable variable. Also accounting literature highlighted several measures of the audit quality, such as: auditors' reputation, audit firm size, auditor independence, audit committee expertise, sector based specialization, audit tenure, concentration of audit firm; which has been categorized as the indirect measures as they are built on some research results and findings or the definition implicitly implied from the contents (Chadegani 2011).

For the purpose of this study, the indirect category was used like past researchers who used different proxies to measure audit quality such as (Lennox 1999; Li et al. 2009; Matoke & Omwenga, 2016, Smii, 2016). The effect of these measures were examined on the accrual quality. The adoption of IFRS was used as proxy for the quality of financial reporting by some studies, but this may not be an appropriate measure, as this proxy is qualitative in nature. For determining financial reporting quality, the accrual method of measuring earnings quality used by (Dechow & Dichev, 2002) and modified (McNichols & Stubben, 2008) was adopted. Firm age and size was used as control variables and their influence was analyzed on the accrual quality.

Empirical research provides mixed results as regard the significance and direction of the relationship between the audit quality and accrual quality, as such this study has also contributed to literature in this respect. For instance, empirical results on the impact of audit quality on accrual quality are mixed about the relationship arguably reflecting challenges to measuring audit quality. Few studies investigated the effect of audit quality (using single or in some cases combined proxies) on accrual quality and provide mixed evidence. Studies such as those carried out by (Tennader & Olsson, 2010; Reza, 2014; Ojeka, Iyoha & Asaolu, 2015; Smii, 2016) provide results which proved that audit quality has a significant relationship with accrual quality. On the other hand, studies of (Kabir, Sharma, Islam & Salat, 2011; Aerts, 2012; Hamadan, Mushtaha & Al-sartami, 2013; Ahmed & Hasnah, 2015) reveals either a no or mixed relationship.

Additionally, this study is related to many works, but distinct from, prior studies that researched on audit quality (AQ) and accrual quality (ACQ) (Reza, 2014; Farouk & Hassan, 2014; Coulton, Livne, Pettinicchio & Taylor, 2014; Okolie, Izedonmi & Enofe, 2013; Ojeka et al, 2015; Smii, 2016; Matoke & Omwenga, 2016; Eriabie & Dabor, 2017). Some of these studies examined whether one or two proxies of audit quality improves financial performance (using ROA, Share price as proxies), some focused on audit quality and earnings management, some examined the characteristics of audit quality, some focused on the financial sector, while some on the cement industry (which is just one of the many industries in the manufacturing sector in Nigeria). Based on the researchers' knowledge, there are paucity of academic papers which analyzed the relationship of audit quality and accrual quality (using a combination of the identified proxies for audit quality) in and outside the Nigerian context. This study therefore form part of reinvigorating academic research and debate on ways by which audit quality can improve the quality of financial reporting of manufacturing companies listed on the Nigeria Stock Exchange (NSE) within a 10year range.

## 2. Literature Review

The word "audit" comes from the Latin word *audire*, meaning "to hear" "to listen". According to Rahimi and Amini, (2015) auditing is the inspection seeking for accounting evidences and other documents of an organization to ascertain how far the financial statements present a true and fair view of the concern. Auditing has its history determined by the history of accounting, as it latter transformed and culminated with the development of the world economy (Tanko, 2011). External audit play a strong role in supporting transparent financial reporting, (Ashbaugh & Warfield, 2003). This external independent process is particularly essential to corporate governance and the oversight of companies (Francis, 2004). Auditors play a fundamental role in bridging the gap between the management of an organization and the users of the financial report. As such as advocated by some auditing scholars that the main aim of audit assignment is to generate a report with good and acceptable quality (Onadapo, Ajulo & Onifade, 2017). According to Rostami (2009), it is the auditor based on his professional code of ethics and regulation that authenticates the correctness of financial information that is passed to the end users.

Audit quality is difficult to observe and as such challenging to measure, as a result a number of proxies have been employed to measure it (Fujiao, 2016). According to the Financial Reporting Council, (FRC, 2006b), there is no single agreed definition of audit quality that can be used as a 'standard' against which actual performance can be evaluated. Different definitions of audit quality have been put forward such as the assurance that the relevant information about the firm's underlying economic conditions, the firm's distinctive features and financial reporting practices are faithfully represented in the financial statement (DeFond & Zhang, 2014). It is also regarded as a continuous concept that maps closely into financial reporting quality (Eguasa & Urhoghide, 2017). Masood and Afzal, (2016) pointed it out that it is necessary to maintain the quality of audit because it helps to minimize the agency problem.

According to prior studies accrual quality is used as proxy for financial reporting quality because accruals incorporate the effects of accounting estimates and judgments made by management (Becker, Defond, Jiabalvo, & Subramanyam, 1998; Francis, 2004). One of the functions of the accrual-basis accounting tool is the ability to provide the forecasting of better future cash flows, when the current net income is informative about future cash flows, financial reporting quality is deemed higher (Hope, Thomas & Vyas, 2011).

In literature various models have been used to measure accruals quality, such as, Deangelo (1986) that treat total accruals as discretionary. Jones (1991) used firm-specific regressions of accruals on changes in revenue and property, plant and equipment (PPE) and treats the residual from the model as discretionary. A performance- matched accruals models was recommended by (Kothari, Leone & Wasley, 2005). Dechow and Dichev (2002) explained accrual quality measure as a frequently used proxy for earnings quality, which is based on how well accruals map into cash flows. This measure defines accrual quality on a past, current, and lagged cash flows as the error variance from a regression of working capital accruals. The accrual quality approach of measuring the quality of financial reporting focuses on the level of uncertainty of an entity's cash flow to the accrual. Dechow and Dichev's (2002) model was extended by McNichols (2002) by incorporating changes in sales and PPE as additional independent variables.

According to (Pounder, 2013), the quality of an entity's accounting is lower when there is variability between the accruals and the cash flows in an entity, which makes the entity's accrual quality lower. Hashim, (2012) posit that measurement error in accruals created by assumptions and estimate affects the accrual quality and that this should be corrected. Gul, Fung & Jaggi, (2009) concluded that there has been no definite accruals model to best measures accruals quality. There are several studies on audit quality and accrual quality such as Tennander and Olsson (2010), where a study was carried out on audit quality and accrual persistence in U.S listed firms between 2002 -2008. Investigating whether the definition of audit quality as both audit size and audit fee could yield a higher accrual persistence. Secondary data were gathered from Thomson Reuter's Data stream with 8798 firm year observations and regression analysis were used. Their results show that audit fees do not affect the persistency in accruals for firms audited by Big 4. On the other hand, for firms audited by Non-Big 4, audit fees seem to affect the persistency in accruals where higher audit fees are documented to increase the persistence accruals. The findings that clients of Big 4 auditor firms seem to have higher persistency in accruals than clients of Non- Big 4 auditor firms which support the results presented by (Krishnan, 2003).

Kabir, Sharma, Islam and Salat (2011) carried out a study to examine the association between Big 4 affiliated auditors and accruals quality in Bangladesh. Absolute discretionary accruals and signed discretionary accruals was used as proxies of accruals quality and a sample of 382 firm-year observations which covers fiscal years 2000 to 2003 was used. The study finds that the association between Big 4 affiliates and accruals quality in Bangladesh depends on measures of accruals quality and accruals models used. Big 4 affiliates do not have a positive impact on accruals quality of their clients in Bangladesh.

Aerts (2012), examine the relationship between firm tenure and earnings quality for 380 Dutch publicly listed firms. Secondary data were collected from the Dutch publicly listed firms retrieved from Orbis for which the required data was available for the 2002-2011 period. The study was investigated in a non-mandatory setting. Earnings quality was proxied by discretionary accruals using the modified Jones model and adjusted for performance. The results revealed that earnings quality does not change with firm tenure.

In the study of Son (2013) on how audit fees affect accruals quality, it was examined whether the Sarbanes-Oxley Act (SOX) and auditor tenure moderate the association between auditor fees and accruals quality using a large sample of firms. The study confirms the findings of Srinidhi and Gul (2007) that in the pre SOX years, audit fees are positively associated with accruals quality, while non-audit fees are negatively associated with accruals quality.

Hamdan, Mushtaha and Al-Sartawi, (2013) carried out a study on audit committee characteristics and earnings quality. The study aims to explore the status of forming audit committees in the Jordanian industrial companies after a series of laws and legislation were issued by Jordan in this respect. Earnings continuity and absolute value of discretionary accruals were used as an indicator of earnings quality. Data were collected from 50 Jordanian industrial companies from 2004-2009. The findings of the study show that the Jordanian industrial companies meet the demands of forming auditing committees stipulated in Jordanian legislation. But it was also revealed that the size of the audit committee is inversely related with earnings quality.

Also no significant relationship exists between the independence of members of the audit committee and earnings quality. Members of the audit committees of Jordanian industrial companies were not independent. As for the financial experience of members of the audit committee to improve earnings quality, there was no significant relationship. In respect of the role of the numbers of meetings of audit committees to make them more active in monitoring and improving their earnings quality measured through continuity, their result shows that the increase in the number of meetings helps improve earnings quality. Finally, it was also found that stock ownership by members of the audit committee reduces their independence and limits their ability to improve earnings quality.

Reza (2014), investigated the relationship between the quality of financial reporting and the quality of auditing companies on the Tehran stock exchange. 110 companies were examined between 2006 and 2011, three proxies were used for the quality of the audit (industry expertise, reputation and the tenure of the auditor) and the financial reporting quality was measured using accrual quality. The findings of the research indicate that between the industry expertise and financial reporting quality there is a significant positive relationship. According to the researcher the findings was in line with (Myers & Majluf 1984; Das & Pandit 2010; Bae & Choi ,2012). Also, there was a significant positive relationship between financial reporting and auditor reputation and the results obtained was in line with the findings of Ahsen (2011). Finally the results showed that between financial reporting and Auditor tenure, there is a significant relationship. The results obtained were consistent with Das and Pandit (2010), Badaor (2013).

Umaru (2014) carried out a study on the effect of audit attributes on financial reporting quality of listed building material firms in Nigeria. Audit fee, audit firm's independence, big four audit firms, and the joint audit was used to proxy audit quality while accrual and earnings quality was used to proxy financial reporting quality. A sample of four listed building material firms for the period of ten years (2002-2011) was used for the study. Ordinary Least Square (OLS) multiple regression technique was employed in the analysis of the panel data collected for the study. It was found out that

audit fee and audit firm independence have significant positive impact on the financial reporting quality of quoted building material firms in Nigeria. While Big4 audit firms has no significant effect on the financial reporting quality of quoted building material firms in Nigeria. And in addition joint audit has no significant positive effect on the financial reporting quality of listed building material firms in Nigeria.

Ahmed and Hasnah (2015) carried out an investigation between internal and external audit attributes, audit committee characteristics, ownership concentration and discretionary accruals which was used to proxy earnings quality. A sample of 508 firms listed on the Malaysia Main Market from 2009 to 2012 was used for the study. Two measures of discretionary accruals are used, Modified Jones model by Dechow, Sloan & Sweeney (1995); and extended Modified Jones Model by Yoon, Miller, & Jiraporn (2006). The results of the study revealed that outsourcing internal audit function, investment in internal audit function and external audit fees are related to higher earnings quality. On the other hand, large audit committee size, more frequent audit committee meetings, having a senior or former audit partner as audit committee chairman and ownership concentration are associated with lower earnings quality.

Ojeka et al, (2015) evaluated the effect of audit committee financial expertise on the quality of financial reporting. Financial reporting quality was measured by reliability accrual quality and audit report lag. Secondary data were collected from fifteen money deposit banks for the period 2003 to 2012. Correlation, Ordinary Least Square and Panel Lest Square were used in analyzing the data. The result of the study revealed , after controlling for firm size, audit type, age of firm, audit committee meeting and audit committee size, that, audit committee financial expertise has a positive significant on accrual quality and audit report lag in Nigeria. According to them, their findings was consistent with (Kalbers & Fogarty 1998; SOX, 2002; SEC Code, 2011) where great emphasis was placed on the presence of financial experts in audit committees.

Cho, Ki and Kwon (2015) carried out a study on the effect of accruals quality on audit hours and audit fees on non-financial companies traded on the Korean Stock Exchange from a period of 200 to 2012 using secondary data and found a negative relationship between accruals quality and audit hours/fees, indicating that auditors increase their audit efforts by modifying audit procedures and substantive tests and charge higher fees for the increased cash flow risk. Their result also revealed that both innate accruals quality and discretionary accruals quality are negatively related to audit hours and fees but that innate accruals quality is more likely to influence audit hours and fees than discretionary accruals quality. Their findings show that auditors include the cash flow risk associated with accruals quality but that their response varies according to the source of accruals quality.

Furthermore, in the study carried out by Smii (2016), on the impact of audit quality on that of the accounting profits also proxied by accrual quality on Tunisian firms listed on the TSE for the period (2005-2009), as earlier stated revealed that the auditors' belonging to an international network (Big), the reputation of the audit firm, the co-statutory (joint) auditor, the existence of an accounting expert in the audit committee, sector-based specialization of the audit firm, the existence of an audit committee and the size of the audited company have a positive impact on the relevance of the accounting profits. Lim and Tan (2010) in their study reported that there is a positive relationship between industry specialist auditors and the quality of financial reporting.

### *2.1. Theoretical Development of Hypothesis*

Agency theory and lending credibility theory provide the basis on which the hypothesis of this paper was developed. The separation of the role of managers from the owners brought about the need for financial reporting. Agency theory helps predict behaviour when the principal delegates work to another, the agent with the expectation that the agent will make decisions that are in the best interest of the principal (Jensen and Meckling 1976). Sarens and Abdolmohammadi (2007), states that according to the agency theory, a company consists of a set of linked contracts between the owners of economic resources and managers who are charged with using and controlling these resources. According to them agents have more information than principals and this information asymmetry adversely affects the principals' ability to monitor whether or not their interests are being properly served by the agents. Eisenhardt (1989), stated that agency theory centers on resolving two issues in the agency relationship: agency problems and the problem of risk sharing. Agency problem occurs when the interests of the principal and agent conflict and it is difficult or costly for the principal to monitor the agent's actions. Problem of risk sharing occurs on the other hand, when the principal and agent have different attitudes towards risk.

Agency cost arises as a result of structuring, monitoring and bonding a set of contracts among agents with conflicting interests (Fama & Jensen, 1983). Lopes & Martins (2005), explains that a firm's goal is to lessen the numerous costs related with contracts, the operation of which can be affected in the absence of adequate information. This theory proposes that agency costs drive client's demand for audit quality (DeFond & Zhang 2014). Dang (2004), argument from an agency theory perspective, explains that audited financial statements are a monitoring mechanism to provide assurance for users of financial information. Monitoring is used by the principal to reduce agency costs, although this also may involve costs.

According to Beaver (1989), the monitoring attempts to resolve problems that arise due to moral hazard and information asymmetry between the agent and the principal. Moral hazard involves the agent retaining superior information and thereby having the opportunity to use it selfishly at the expense of the principal. To prevent this, an independent actor can be contracted to inspect the information environment. In this case, auditing is one form of control for the monitoring hypothesis, whereby audit decreases the risk of the agent withholding substantial information from the shareholders (Beaver 1989). In addition to the monitoring hypothesis is the information hypothesis, which involves providing information that is useful to investors' for their decision-making. An audit is viewed by investors as a means of improving the quality of financial information (Wallace, 2004). On the other hand, Hayes, Dassen, Schilder and Wallage,

(2005), opine that, one of the reasons for the demand of audit services is based on the lending credibility theory which explains that the main purpose of the audit is to add credibility to the financial report and the reduction of information asymmetry. In other words, credibility is the major focus of the service rendered by the auditor to their client. The confidence in the figures presented by the management in the financial statement increases as a result of the element of credibility seen to be contained in the audited financial statements (Okpala, 2015). In view of this, the auditor is making the financial statement reliable. Audited financial statements are supposed to heighten the confidence of financial statement users in the accounting numbers presented therein (Ittonen, 2010). A reliable financial information has great benefits to users in that it helps to improve the quality of their investment decisions.

So the hypothesis below was considered:

- $H_{01}$ : Audit quality does not significantly influence the accrual quality of listed manufacturing companies in Nigeria

Audit studies often use several variables to minimize the effects of endogeneity on the results (Lennox, Francis, & Wang, 2012; Iana et al, 2013). This study included as control variables size (SIZE) and age (AGE) of the listed companies. This study used the logarithm of the total assets of client (LnTA<sub>it</sub>) to measure the size of the companies in accordance with previous study such as (Fortin & Pittman, 2007; Iana et al, 2013). The logarithm of total assets aims to control for the size of the audited company. On the other hand, firm age is measured as the number of years the company has been publicly traded as used by (Ojeka Iyoha, Obigbemi, 2014; Ojeka et al, 2015).

### 3. Methodology

The ex-post facto research design was adopted in this study. As such, secondary data were extracted from the annual reports and accounts of thirty (30) companies for a period of 10 years (2008-2017). Purposive sampling method was used to select the sampled firms from the total population of fifty three (53) manufacturing firms listed on the Nigerian Stock Exchange. Data were analyzed using mean, percentages, pooled OLS, random effect, fixed effect and generalized least square method with the aid of Stata 11. To achieve the objective of this paper, three variables were identified and discussed in this section. These are: dependent variable which is represented by accrual quality, Independent variable of Audit Quality proxied by audit firm size, audit tenure, audit firm independence, audit committee expertise, audit firm engaged and sector based specialization; and control variables of Age and size. The measurement procedures of each of these variables are discussed as follows:

#### 3.1. Measurement of Variables and Model Specification

##### 3.1.1. Accrual Quality

In determining accrual quality, the accrual quality model of Dechow and Dichev's (2002) modified by McNichols (2002) was adopted. McNichols (2002) documents that the explanatory power of the modified Dechow and Dichev's (2002) model is higher than that of the Dechow and Dichev's (2002) model and the Jones (1991) model, and concludes that both the Dechow and Dichev's (2002) model and the Jones (1991) model are probably mis-specified. The model is specified as follows. The residual value of the model estimates the extent of the deviance from the expected level of investment. The deviation is captured by the positive or negative residuals from the expected accrual model and is denoted as the level of high and/or low earnings quality. The model adopted is mathematically presented as follows:

$$TCA_{jt} = \alpha_0 + \beta_1 CFO_{jt-1} + \beta_2 CFO_{jt} + \beta_3 CFO_{jt+1} + \beta_4 \Delta REV_{jt} + \beta_5 PPE_{jt} + \mu_1$$

Where:

All variables are scaled by assets

Where  $TCA_{jt} = \Delta CA_{jt} - \Delta CL_{jt} - \Delta CASH_{jt} + \Delta STDEBT_{jt}$  = total current accruals in year t,  $CFO_{jt} = NIBE_{jt} - TA_{jt}$  = firm j's cash flow from operations in year t,  $NIBE_{jt}$  = firm j's net income before extraordinary items in year t,  $TA_{jt} = (\Delta CA_{jt} - \Delta CL_{jt} - \Delta CASH_{jt} + \Delta STDEBT_{jt} - DEPN_{jt})$  = firm j's total current accruals in year t,  $\Delta CA_{jt}$  = firm j's change in current assets between year t-1 and year t,  $\Delta CL_{jt}$  = firm j's change in current liabilities between year t-1 and year t,  $\Delta CASH_{jt}$  = firm j's change in cash between year t-1 and year t,  $\Delta STDEBT_{jt}$  = firm j's change in debt in current liabilities between year t-1 and year t,  $DEPN_{jt}$  = firm j's depreciation and amortization expense in year t,  $\Delta REV_{jt}$  = firm j's change in revenue between year t-1 and year t,  $PPE_{jt}$  = firm j's gross value of property, plant and equipment in year t.

##### 3.1.2. The Model

The research hypothesis that is presented above is examined using the following regression equation:

$$ACQ_{it} = \beta_0 + \beta_1 AFS_{it} + \beta_2 AT_{it} + \beta_3 SBS_{it} + \beta_4 AFE_{it} + \beta_5 AFI_{it} + \beta_6 ACE_{it} + \beta_7 AGE_{it} + \beta_8 SIZE_{it} + \mu_1$$

Where ACQ is the accrual quality measured as stated above,

AFS is the audit firm size, size of the audit firm takes the value 1 if the firm is audited by the "Big4" and 0 otherwise (DeAngelo, 1981; Chalmers & Godfrey, 2004).

Audit Tenure measured as number of consecutive years the client has retained a particular audit firm (Zgarni, Hlioui & Zehri, 2012; Chinga, Tehb, Sanc & Hoed, 2015).

Sector Based Specialization 1 if MS > 10 percent, and 0 otherwise. Where: MS = m-firm sales ratio =  $\sum S_{ij} / S_1$  ( $S_{ij}$  = firm i's sales, while firm i is audited by auditor j and  $S_1$  = the sum of sales for all firms in the industry (Ferguson & Stokes, 2002; Zgarni et al, 2012).

Audit Firms Engaged measured by dichotomous variable ("1" if a company is audited by more than one audit firm and "0" otherwise) (Maosyi, et al, 2015).

Audit Firm Independence measured by natural log of the audit fees paid by the company (Okolie et al, 2013)

Audit Committee Expertise measured by the number of individuals on the audit committee who

are experienced and financially literate (Ojeka, Iyoha & Asaolu, 2015)

Firm Age is the number of years from the date of incorporation to the end of year covered by the study (i.e. 2017).

Size of the firm is the natural log of total assets over the period of study (Okolie et al, 2013).

#### 4. Analyses, Results and Discussion

In this section, the descriptive and empirical analyses are presented thus;

##### 4.1. Descriptive Statistics

Variables	Mean	Minimum	Maximum	Std.Dev
ACQ	6.58	-0.62	0.86	0.16
AFS	0.68	0	1	0.47
AT	6.71	1	18	4.39
SBS	0.63	0	1	0.48
AFE	1.03	1	2	0.18
LAFI	7.11	5.88	8.47	0.50
ACE	0.86	0	4	0.97
AGE	46.2	3	93	17.27
SIZE	10.10	7.88	13.40	0.78

*Table 1: This Table Summarizes the Descriptive Statistics from All Variables Collected from The Annual Report of The Firms.  
Source: Data Analysis (Excerpts from Stata/IC 11.0 Output)*

Table1 presents the descriptive statistics for the main variables. The table reports that the residual of accrual quality has a mean (std dev) of 6.58(0.16), and the absolute value of the residual ranges from -0.62 to 0.86. Audit firm size has mean (std dev) of 0.68(0.47) while audit tenure has a mean (std dev) value of 6.71(4.39). Sector based specialization, number of audit firm engaged, audit firm independence and audit committee expertize have mean (std dev) values of 0.63(0.48), 1.03(0.18), 7.11(0.50) and 0.86(0.97) respectively. Age of the firm reports a mean (std dev) of 46.2(17.27) and ranges from 3 to 93 while Size of the firms ranges from 7.88 to 13.40 with a mean (std dev) of 10.10(0.78).

##### 4.2. Multicollinearity Test

Variance Inflation Factor test and correlation matrix test were carried out to determine whether the series in the distribution are correlated and the results presented in Table 2 and 3 respectively.

Variables	VIF	I/VIF
AFS	2.87	0.35
AT	1.22	0.82
SBS	1.72	0.59
AFE	1.20	0.83
LAFI	5.45	0.18
ACE	1.21	0.83
AGE	1.08	0.93
SIZE	4.01	0.25
Mean VIF	2.34	

*Table 2: Result of the Variance Inflation Factor (VIF) Test  
Source: Data Analysis (Excerpts from Stata/IC 11.0 Output)*

The Variance Inflation Factor (VIF) result as presented in Table 2 are lesser than the threshold of 10 (Baltagi, 2015), which show that there is no problem of multi-collinearity among the series in the distribution. This confirms that there are no unhealthy relation among the series.

Variables	AFS	AT	SBS	AFE	LAFI	ACE	SIZE	AGE
AFS	1							
AT	0.33	1						
SBS	0.62	0.25	1					
AFE	0.12	0.29	0.14	1				
LAFI	0.67	0.24	0.39	-0.02	1			
ACE	0.09	0.06	0.16	-0.16	0.31	1		
AGE	0.18	0.04	0.04	-0.06	0.10	0.12	1	
SIZE	0.51	0.13	0.34	-0.13	0.85	0.29	0.14	1

Table 3: Result of Pearson Correlation Matrix Tests  
Source: Data Analysis (Excerpts from Stata/IC 11.0 Output)

The result of the correlation matrix as shown in Table 3 aligned with the result of the Variance Inflation Factor as presented in Table 2. The series have no multicollinearity problem, that is, there is no unhealthy association among the explanatory variables and that the series are suitable in running the regression analyses without producing a bias results.

#### 4.3. Analysis of Hypothesis

The regression analysis in determining the effect of the audit quality proxies on accrual quality (with the consideration of the effect of control variables) was carried out using (Pooled OLS, Fixed Effects and Random Effect). The result of the regression analysis, the Hausman Test, test parameters, Rho test as well as Diagnostic tests (Serial Correlation, Cross sectional dependence and heteroskedasticity) are presented in Table 4

Method	With Control Variables								
	Pooled OLS			Fixed Effects			Random Effects		
ACQ	Coeff	T	Prob	Coeff	T	Prob	Coeff	T	Prob
Constant	-0.091	-	0.619	0.808	1.73	0.085	0.068	0.30	0.768
		0.50							
AFS	0.0370	1.16	0.246	0.077	1.73	0.085	0.062	1.75	0.080
AT	0.0013	0.59	0.558	-0.002	-	0.429	-	-	0.832
					0.79		0.0005	0.21	
SBS	0.0315	1.32	0.188	-	-	0.999	0.019	0.69	0.489
				0.00003	0.00				
AFE	0.0409	0.76	0.447				0.050	0.64	0.520
LAFI	0.0561	1.37	0.173	0.073	0.95	0.343	0.057	1.19	0.234
ACE	0.0072	0.72	0.472	0.052	2.65	0.009	0.020	1.59	0.111
SIZE	-0.043	-	0.059	-0.143	-	0.003	-0.060	-	0.035
		1.89			2.97			2.10	
AGE	0.0005	0.88	0.381	0.0007	0.15	0.879	0.0003	0.41	0.682
	Adj. R <sup>2</sup> = 0.0473			Adj R <sup>2</sup> (Overall) = 0.0164			Adj R <sup>2</sup> (Overall) = 0.0644		
	F <sub>(8, 291)</sub> = 2.86			F <sub>(7, 263)</sub> = 3.09			Wald Chi <sup>2</sup> (8) = 17.34		
	Prob > F = 0.0045			Prob > F = 0.0038			Prob > Chi <sup>2</sup> = 0.0268		
Hausman Test: Chi <sup>2</sup> (7) = 17.26, Prob > Chi <sup>2</sup> = 0.0158									
Test Parameters : F <sub>(29, 255)</sub> = 2.40, Prob > F = 0.0029									
Rho Test: F <sub>(29, 255)</sub> = 2.65, Prob > F = 0.0000									
Wooldridge Test (Autocorrelation): F <sub>(1, 29)</sub> = 4.429, Prob > F = 0.0441									
Pesaran Test (Cross Sectional Dependence): Chi <sup>2</sup> = -1.193, Prob > Chi <sup>2</sup> = 0.2331									
Modified Wald Test: Chi <sup>2</sup> <sub>(30)</sub> = 2427.44, Prob > Chi <sup>2</sup> = 0.0000									
No of Observation = 300									

Table 4: Analysis of Hypothesis  
Source: Data Analysis (Excerpts from Stata/IC 11.0 Output)

Hausman test was carried out in order to determine the most appropriate method of estimating the regression model among pooled OLS, fixed effects and random effects. The result of the test revealed that fixed effects is the most appropriate and so, test parameters and fixed effects rho test were further conducted to confirm the result of the hausman test as presented in Table 4

The Hausman test showed a p-value of 0.0158 that is 1.58% which is lesser than the 5 percent level of significance chosen for the study. This point out that fixed effects is the most appropriate estimator. The Hausman test result which revealed the appropriateness of the fixed effects was confirmed using 'testparm' and rho tests. These tests help to decide the most appropriate model between the fixed effects and Pooled OLS regression. The results of both tests (testparm and rho) show a p-value of 0.0029 and 0.0000 respectively, which is lesser than the significance level of 5 percent. This

indicates that the coefficients of all the explanatory variables are unequal to zero (0), thus, the study do reject the null hypothesis which implies that fixed effects is the most appropriate estimator for the model.

Also, the model was tested for heteroskedasticity, cross sectional dependence and autocorrelation to examine the robustness of the model. As posited by Baltagi, (2015), long time series as obtained in this study with a 10 year time frame may have the possibility of a macro panel, that is, correlation problem among the residuals across firms. The null hypothesis of the test is that the residuals of the model are uncorrelated over time. Pesaran CD test was conducted yielding a result with a p-value of 0.2331, that is, 23.31 percent, which is greater than the 5 percent level of significance selected for this study. This indicate that the standard errors of the model are not correlated over time, implying that the model has no cross-sectional dependence problem.

To determine whether the variations in the residuals of the model are constant over time or not Heteroskedasticity test was conducted. Breusch- Pagan/Cook- Weisberg test was carried out and the result of the heteroskedasticity revealed a p- value of 0.000 (that is 0 percent) which is lesser than 5 percent significance level, which is an indication that heteroskedasticity is present, implying that the residuals of the model are not constant over time. Additionally, serial correlation test was carried out to determine the existence of autocorrelation among the residuals and the coefficients of the model. Baltagi (2015), opine that autocorrelation problem causes the standard errors of the coefficients to be smaller than their actual value and the coefficient of determination (R-squared) to be higher than normal. The test was conducted using Wooldridge test and the result revealed a p-value of 0.0441 (that is, 4.41 percent) which is lesser than the significance level of 5 percent, which indicate that serial correlation problem is in the model.

Conclusively, the diagnostic tests carried out show that there is presence of heteroskedasticity and correlation problems in the model. As such, the OLS, Fixed effects and Random effects would be inappropriate to estimate the model. Thus, to correct these problems among the model residuals and coefficients, the fixed effects regression cluster was used as presented in Table 4

#### 4.3.1 Test of Hypothesis

According to the results of the diagnostics test, Regression Result (Fixed effects- cluster) was used to test the effect of Audit Firm Size (AFS), Audit Tenure (AT), Sector Based Specialization (SBS), Audit Firm Engaged (AFE), Audit Firm Independence (LAFI) and Audit Committee Expertise (ACE) with the effect of the control variables (AGE, SIZE) on Accrual Quality (ACQ) and the result is presented in Table 5

	With Control Variables			
ACQ	Coeff	Std. Err	T	Prob
Constant	0.808	0.468	1.73	0.085
AFS	0.077	0.044	1.73	0.085*
AT	-0.0019	0.002	-0.79	0.429
SBS	-0.00003	0.033	-0.00	0.999
AFE				
LAFI	0.073	0.077	0.95	0.343
ACE	0.052	0.019	2.65	0.009***
SIZE	-0.143	0.048	-2.97	0.003***
AGE	0.0007	0.005	0.15	0.879
AdjR <sup>2</sup> (Overall) = 0.0164				
F <sub>(7, 263)</sub> = 3.09				
Prob > Chi <sup>2</sup> = 0.0038				

Table 5: Regression Result (Fixed Effects – Cluster)  
Source: Data Analysis (Excerpts from Stata/Ic 11.0 Output)

##### 4.3.1.1. Interpretation

Fixed Effects (with Cluster) Model:

$$ACQ = \beta_0 + \beta_1 AFS_{it} + \beta_2 AT_{it} + \beta_3 SBS_{it} + \beta_4 AFE_{it} + \beta_5 LAFI_{it} + \beta_6 ACE_{it} + \beta_7 AGE_{it} + \beta_8 SIZE_{it} + \varepsilon_{it} \dots 1$$

$$ACQ = 0.808 + 0.077 AFS_{it} - 0.0019 AT_{it} - 0.00003 SBS_{it} + 0 AFE_{it} + 0.073 LAFI_{it} + 0.052 ACE_{it} + 0.0007 AGE_{it} - 0.143 SIZE_{it} + \varepsilon_{it} \dots 1$$

##### 4.3.1.2. Regression Results (Fixed Effects (with Cluster))

According to the regression analysis result of the fixed effects(with Cluster) presented in Table 5, the probabilities of the t-statistics of the regression analysis revealed that audit firm size (AFS) (with p-value = 0.085<0.1) and audit committee expertise (ACE) (with p-value = 0.009<0.05) positively and significantly influence ACQ at 10 percent and 5 percent significant levels, while SIZE (with p-value = 0.003< 0.05) exert negative but significant effect on ACQ. The logarithm of audit fee, LAFI (with p-value = 0.343>0.05), and AGE (with p-value = 0.879> 0.05) exert positive but insignificant effect on ACQ. Contrariwise, audit tenure (AT) (with p-value = 0.429>0.05) and sector based specialization (SBS) (with p-value = 0.999>0.05) influence ACQ negatively but insignificantly. Based on the regression analysis result, the relationship between the number of audit firm engaged and the quality of financial reporting is in doubt, this relationship could not be proved or disproved.



Also confirmed by the t-statistics results, the result revealed that AFS, with  $t_{cal}(1.73) > t_{tab}(1.645)$  significantly influence ACQ at 10 percent significant level; ACE, with  $t_{cal}(2.65) < t_{tab}(1.96)$ , SIZE, with  $t_{cal}(2.97) < t_{tab}(1.96)$  significantly influence ACQ at 5 percent significant level therefore, the study do reject the null hypothesis that AFS and ACE has no significant effect on ACQ, it implies that AFS, ACE and SIZE significantly influence on ACQ. On the contrary, AT, with  $t_{cal}(0.79) < t_{tab}(1.96)$ ; SBS, with  $t_{cal}(0.00) < t_{tab}(1.96)$ ; LAFI, with  $t_{cal}(0.95) < t_{tab}(1.96)$ , and AGE, with  $t_{cal}(0.15) < t_{tab}(1.96)$  have insignificant influence on ACQ; therefore, the study do not reject the null hypotheses that AT, SBS, LAFI and AGE have no significant effect on ACQ.

The magnitude and the direction of the association between the explained and the explanatory variables is measured by the coefficient of the regression result thus; AFS with a coefficient of 0.077 indicate that a positive change in AFS would yield 7.7 percent increase in ACQ; AT with a coefficient of -0.02 implies that a unit increase in audit tenure would lead to 2 percent decrease in ACQ; SBS has coefficient of -0.00003, which means that as specialist auditors increase by a unit, ACQ would decrease by 0.003 percent.; AFE with a coefficient of 0 indicate that a unit increase in AFE would result to 0 percent decrease in ACQ; LAFI with a coefficient of 0.73 implies that a unit increase in audit fee would lead to 73 percent increase in ACQ; ACE with coefficient of 0.052 indicate that as the number of audit committee expertise increases by a unit, this would lead to 5.2 percent increase in ACQ, SIZE with coefficient of -0.143 implies that as SIZE of listed manufacturing companies increase by a unit, this would lead to 3 percent decrease in ACQ and AGE with coefficient of 0.007 implies that as the AGE of listed manufacturing companies increase by a unit, this would lead to 0.7 percent increase in ACQ.

The explanatory power of combined AFS, AT, SBS, AFE, LAFI and ACE with the influence of the control variables SIZE and AGE on the ACQ (that is the coefficient of determination) as shown in Table 4.5b is 0.0164, which implies that 1.64 percent change in the ACQ is caused by the combined influence of the explanatory variables (AFS, AT, SBS, AFE, LAFI and ACE) while the remaining 98.36 percent is as a result of other determining variables which were not included within the scope of this study. This is an indication that the combination of the explanatory variables do not strongly influence the value as measured by ACQ. Also, the result of the F-statistics with p-value of 0.0038 (3.8 percent which is less than 5 percent) significance level, implies that all the explanatory variables (AFS, AT, SBS, AFE, LAFI and ACE) jointly and significantly influence the explained variable (ACQ).

## 5. Discussion

The summary of the regression results carried out showed that audit firm size positively and significantly influence the accrual quality of Nigerian listed manufacturing firms with the inclusion of the control variables; the findings corroborated the reports of previous studies carried out in other countries as in Korea by An (2009); United States by Tennader and Olsson (2010); in Tehran by Kheirollahi, et al, (2014); in Tunisia by Smii (2016). On the other hand, Kabir et al, (2011) discovered that audit firm size does not have a positive effect on accrual quality in Bangladesh. The contradictory result could be due to the measurement of accrual quality used. In the Nigerian context, Umaru (2014) reported an insignificant relationship for building material firms in Nigeria.

From the regression analysis result of this study it was discovered that audit tenure negatively and insignificantly affect accrual quality of Nigerian listed manufacturing firms with the inclusion of the control variables. This implies that an increase in audit tenure do not bring about accrual quality. Similar result was obtained by Aert (2012) in Dutch, by Cho et al (2015) in Korea; reported an inverse relationship. Contradictory report was given by Reza (2014) in Tehran. The regression analysis result of this study indicate that sector based specialization negatively and insignificantly affect financial reporting quality of Nigerian listed manufacturing firms with the inclusion of the control variables. This implies that specialist auditors do not bring about a better financial report. Lim and Tan(2010) and Smii (2016) found a positive impact between sector-based specialization and accrual quality. The relationship between the number of audit firms engaged and the accrual quality is in doubt, this relationship could not be proved or disproved based on the regression result.

According to the regression analysis result of this study, it was revealed that audit firm independence measured by the log of audit fees has a positive and insignificant relationship with accrual quality of Nigerian listed manufacturing firms with the inclusion of the control variables. The finding supported the result obtained by Son (2013) in the United States, which found that in the pre SOX years, audit fees are positively associated with accruals quality. Also Umaru (2014), found out that audit fee and audit firm independence have significant positive impact on the accrual quality of quoted building material firms in Nigeria. Ahmed and Hasnah (2015) in Malaysia found that external audit fees are related to higher earnings quality. Contrarily, the findings of this study negates the reports of Tennader and Olsson (2010) in the study carried out in United States; Choi et al (2015) in Korea, found a negative relationship between accruals quality and audit fees in the study carried out in Korea.

From the result obtained from the regression analysis conducted in this study, it was found that audit committee expertise exert a significant positive influence on the accrual quality of Nigerian listed manufacturing firms with the inclusion of the control variables. In the Nigerian context, Ojeka et al, (2015) evaluated the effect of audit committee financial expertise on the quality of financial reporting of money deposit banks, the result of the study revealed, after controlling for firm size, audit type, age of firm, audit committee meeting and audit committee size, that, audit committee financial expertise has a positive significant on accrual quality and audit report lag in Nigeria. Also, Smii (2016), in Tunisia found that audit committee financial expertise is associated with higher financial reporting. Contrarily, Hamdan, Mushtaha and Al-Sartawi, (2013) in Jorrdan found that there was no significant relationship between financial experience of members of the audit committee and earnings quality.

Regarding the control variables, the results obtained suggest a positive insignificant relationship between age of the listed manufacturing firms and accrual quality and a negative significant relationship between size of the listed manufacturing firms and accrual quality respectively. These results imply that these elements contribute both positively and negatively to the improvement of accrual quality.

Conclusively, the probability of the F-test with 0.0038 with the inclusion of the control variables indicates that all the explanatory variables (audit firm size, audit tenure, sector based specialization, audit firm engaged, audit firm independence and audit committee expertise) might not individually exert significant influence on the accrual quality proxies but compositely influence the accrual quality of listed firms in Nigeria. This implies that all the factors are important and need to be critically considered in taking decision by the shareholders towards the achievement of a qualitative financial report.

## 6. Implications

Based on the evidence presented, it was implied that the accrual quality of listed manufacturing firms in Nigeria is greater when companies are audited by (Big 4) independent auditing firms than smaller ones (non-Big 4). Thus, the largest independent accounting firms, have higher audit quality, which positively affect the accrual quality of listed manufacturing firms in Nigeria. Also, the evidence presented in this study, indicates that the existence of an audit committee expertise influence accrual quality of listed manufacturing firms in Nigeria. Hence, this corporate governance mechanism do contribute immensely to the quality of financial reporting and, consequently, the management of firms. The result of the audit tenure presented here indicate that accrual quality is affected negatively though insignificantly by the number of consecutive years during which the client company is audited by the same audit firm. The study also implied that audit firm independence have positive and insignificantly impact on accrual quality. From the findings it was also implied that audit tenure, audit firm independence, joint audit services and sector based specialization do not matter with regard to accrual quality.

Regarding the control variables, the obtained results suggested a positive relationship between accrual quality and the company's age while on the contrary a negative relationship between the quality of the firm's financial reporting and the company's size. These results imply that the ages of the companies contribute to the improvement of accrual quality while on the other hand the size of the companies do not contribute to the firm's accrual quality, that is, as the companies size increase, there is possibility of the firm manipulating their financial records.

## 7. Conclusion and Recommendations

The study concludes that audit quality have significant relationship with the accrual quality of listed manufacturing firms in Nigeria. And that improving this quality could enhance the financial reporting in general. The study therefore recommends that in order to achieve financial report of better quality which will be void of errors, faults, and misstatements, representatives in the audit committee should be financial experts as it has been found that financial expertise of the audit committee positively and significantly affect the quality of the financial report. Also, that big 4 audit firms or their affiliate are appointed to audit company's financial statement.

## 8. Suggestion for Further Studies

This study focused on sample subjects which cut across different sectors of the Nigerian economy such as consumer goods, conglomerates, health care, industrial goods. Similar studies should be carried out considering other sectors of the Nigerian economy such as the financial sector and other sectors not covered in this study as well as other economies of the world. Also, there is need to conduct similar research using different source of data, employing other financial reporting quality measures and audit quality proxies, and using different scales of measurement of variables and techniques for data analysis. It is further suggested that future studies should cover a wider scope in terms of time frame and sample size.

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