Institutional and Block-holder Ownership and Audit Quality of Listed Manufacturing Firms in Nigeria

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Abstract The credibility of audit quality adds value and assure investors that the investment in the company is secured. However, institutional and block-holder can affect audit quality positively or negatively. The study investigates the effect of institutional and block-holder ownership on audit quality of listed manufacturing firms in Nigeria. Logistic regression model was employed to analyze the data and test the hypotheses. Data were extracted from published audited annual reports and accounts of 32 firms that represent the sample size of the study out of the total of 59 firms. The results show that institutional ownership has negative and significant effect on audit quality while block-holder ownership has positive and significant effect on audit quality. This implies that institutional ownership reduces audit quality while block-holder ownership influences audit quality positively. The study conclude that both institutional and block-holder ownership affect audit quality and recommends that the proportion of shares acquired by institutions should be reviewed downward and that of block-holder ownership should be increased. This will encourage both institutional and block-holder ownership to put in their best to effectively monitor the quality of audit thereby give assurance and confidence to other forms of ownership in the manufacturing firms that their investments is secured.

Keywords: *institutional, block-holder, audit tenure, firm size*

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1. Introduction

The collapse of big corporations both in the developed and developing countries have attracted the attention of owners in taking adequate measures in order to safeguard their investments. This is because when a corporation collapses, the owners' investment affected. As such, shareholders need to take steps to protect the corporation from collapsing. One of these steps is to engage the services of competent independent auditors [1]. However, ownership structure creates several reasons to supervise the financial statement prepared by the management of companies [2]. Firstly, audited financial statement is an important resource for information about the company and the owners (investors) value it in analyzing the accounting information and financial decision makings about audit quality. Secondly, ownership structure is considered as the effective parameters on the developments and economic growth of the companies which can affect firms' financial performance and strategic policies, which in turn may affect audit quality.

Institutional and block-holder ownership is one of the effective variables influencing audit quality, but less attention has been given to it and its effect on audit quality and this has resulted to several financial scandals

experienced in the past such as Enron, Worldcom, Parmalat, Cadbury plc, Oceanic bank plc, Afribank plc, NAMPAK, Lever Brothers Nigeria plc, African Petroleum and others that make audit quality to be much questionable [1,3,4,5,6]. However, the fundamental role of independent auditors is to reduce asymmetric information between the shareholders and managers [4]. This means that audited financial statement provides sufficient information to monitor management which ultimately reduce management opportunistic behaviour. Therefore, this study considered the relationship of institutional and block-holder ownership of listed manufacturing firms in Nigeria.

Institutional ownership is an investment from a group of outside investors or investment owned by a certain institution, which is usually higher than that of individual investor [7,8]. Institutional ownership is an investor who have wealth of financial expertise, skills, greater capabilities and possess certain characteristics that distinguish them from other shareholders, as they have material resources to influence audit quality [7]. This influence may result to positive audit quality. This study therefore, considered ownership as institutional owner where institutions acquired less than 5% equity of a company.

On the other hand, block-holder ownership is a shareholder who own five percent or more of a company's

stock on company outstanding shares [4,9]. These are group of owners who have potentials, beliefs, skills or preferences to influence firms through different channels and can compel the management of the company to maintain firm stock for a long-term in order to make gain or interest for themselves. They are also interested in producing more benefits from their shareholding, and as such they decrease the likelihood of hiring qualified auditors or are less likely to hire a Big 4 audit firm or high quality auditor. Block-holder ownership in this study are referred to individuals, group of investors or institutions that owned 5% and above of company's equity. This action of block-holder ownership may affect audit quality positively or negatively.

There is no agreement or universally accepted indicator that has been introduced as a measure of audit quality. This has made each researcher or scholar to views audit quality according to his/her work or position. For example, Mitra, Hossain and Deis [10] examine the relationship between institutional ownership and audit quality. The authors use audit tenure to measured audit quality. Similarly, Han, Kang and Rees [11] assess the association between institutional ownership and audit quality in Korea. The authors used Big4 audit firms to measured audit quality. Also, Moghadam, Sarang, Sahraneshin and Bahre [12] examine the relationship between Block-holder and audit quality. The authors used audit fees to measured audit quality. This show that there is no generally accepted proxy use to measure audit quality. Therefore, audit tenure is used to measured audit quality in this study [13,14]. However, the general belief of audit quality is understood to be the ability of the auditor to identify material misstatement in the financial statements and their willingness to issue an appropriate and unbiased audit report [15]. This ability and willingness depend on the personal qualities of the auditor which include technical training, experience, independence, mental attitude etc. Also, the ability and willingness of the auditor to disclose material misstatement in the financial statement prepared by management adds a significant value to investors in capital markets because they often use audited financial statements by auditors as the main basis for investment decisions [16].

Manufacturing firm is any company that uses components, parts or raw materials to make a finished goods. This sector converting raw materials, components or parts into finished goods that meet a consumer's expectations or specifications. Manufacturing sector has been accepted as one of the major driving force of the modern economy. It is a sector that serves as the vehicle for the production of goods and services, generation of employment and the enhancement of incomes. hence, described as the heart of the economy [17]. The choice of manufacturing firms is based on the fact that it gives equal opportunity for different forms of auditors to display their potentiality. This allows the services of both big 4 audit firms and non-big 4 audit firms in the sector.

The global corporate scandals and the collapses of several major organizations which have affected most of the world in the past fifteen (15) years including Nigeria have pushed up the demand for high audit quality [8]. These turbulent events (failures or collapses of some of these firms) have dramatically highlighted the importance of credible high quality audit to investors and creditors in Nigeria as it enhance the degree of confidence and reliability to enable them make investment decisions [18]. However, the collapse of major firms on one hand was attributable to poor performance of board of directors, indicating the inability of the boards to carry out effective and efficient monitoring of top management. While on the other hand, it was attributable to poor audit quality, showing that the auditors lack courage to issue out accurate reports when errors/misstatement are found in the financial statement prepared by the company management [19].

In addition, the issue of audit quality have been emerging from USA and other developed countries as constant changes from regulatory and standards setting bodies to improve audit quality has become the norm and quality of audit financial statement remains poor in Nigeria compared with many advanced jurisdictions [20]. However, no settled measures or benchmarks and no agreement about the drivers of audit quality, and as such, there was no consensus among the scholars what constitute audit quality. Similar studies were carried out by Zureigat [8], Enofe, Mgbame, Aderin and Ehi-Oshio [21], Kasai [22], Vlnampy, Sivathaasan, Tharanika & Sinthuja [23], and Akhidime [18] using various proxies to measure audit quality. Therefore, this study examines the effect of institutional and block-holder ownership on audit quality of listed manufacturing firms in Nigeria.

The main objective of this study is to investigate the effect of institutional and block-holder ownership on audit quality of listed manufacturing firms in Nigeria. To achieve this, the study examines the effect of institutional ownership on the audit quality of listed manufacturing firms in Nigeria; investigates the effect of block-holder ownership on the audit quality of listed manufacturing firms in Nigeria.

In line with these objectives, two hypotheses were formulated and tested: H_1: Institutional ownership has no significant effect on audit quality of listed manufacturing firms in Nigeria; H_2: Block-holder ownership has no significant effect on audit quality of listed manufacturing firms in Nigeria.

The findings of the study would be useful to the investors, creditors, regulators, financial analysts and other users of audited financial statements both at national and international level as it will provide a basis to forestall the occurrence of poor audit quality in the future. It will also help policy makers in formulating and administering policies to improve audit quality in Nigeria. The study is also of great importance to academics, students and other researchers, as it adds to the body of existing literature on the subject matter. This is because it will serve as a reference point for further research on ownership structure and audit quality and other related areas, thereby expanding knowledge on the subject.

2. Literature Review

The concepts of ownership structure and audit quality are interlinked. This is because ownership structure is one of the major tools of the corporate governance mechanisms influencing audit quality. However, the

influence of audit quality by ownership structure of the company has been debated theoretically and empirically in corporate finance literature. Prior studies document that since the owners ratified the appointment of external auditors, the auditors seems them as a client and protect their interest [24,25]. This can give an opportunity to shareholders to influence the audit report which in turn may lower audit quality. The fact that auditors act as agents to principals when performing an audit work may induce auditors to establish relationship with principals (owners) in order to build trust and confidence between themselves and principals which may metamorphose into impairment of audit quality.

In addition, the relationship between ownership structure and audit quality has been a controversial research topic for several decades and has generated lots of arguments and counter arguments in the corporate finance literature. Prior studies found that the concept of ownership structure and audit quality was originally drive by segregation of owners from control which results to a conflict of interests between the owners and management [26]. The conflict of interests later metamorphosed into agency theory [27,28], where the sole aim of the owners who are the shareholders of the company is to maximize their wealth while managers prefer self-centred benefits. In the absence of either appropriate motivation or sufficient monitoring, managers can exercise opportunistic behaviour to the detriment of the owners. It is against this backdrop that arose the demand for the services of external auditors as monitoring mechanisms to checkmate the behaviour of managers. The ownership structure considered in this study consists of institutional and block-holder ownership.

In order to link the literature on ownership structure with audit quality, conceptual framework that linked institutional and block-holder ownership with audit quality of listed manufacturing firms in Nigeria which is shown below:
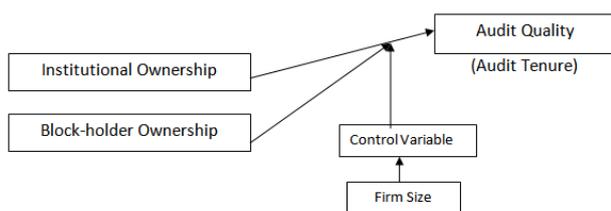
Source: Field Research, 2017

Figure 1. Institutional and Block-holder Ownership and Audit Quality

The above conceptual framework is developed to assess the relationship between effect of institutional and block-holder ownership on audit quality. The independent variables comprise institutional and block-holder ownership while the dependent variable was proxy by audit firm tenure.

There are numerous theories regarding ownership structure and audit quality, but study anchored on two theories. These are policeman theory and Agency theory. The policeman theory stipulates that for police officers to be competent, objective, effective and efficient in carrying out their responsibilities, they are expected to spend three to five years in any community, formation, unit or department. Therefore, If the officer exceeded three to five

years in any command, department or community, it will impair their independence, objective and integrity in carrying out their duties. Applying this theory to auditing as profession, auditors are expected to spend three to five years of one tenure to audit any company. Allowing auditors to exceeded five years and above in audited a company will impair audit quality. This is because the longer the audit firm tenure (length of service), the more likely to compromise on the client's accounting and reporting choices in order to retain the client [29]. This contradicts harmonized Corporate Governance Code (2014) which stipulates ten years maximum tenure (two terms of 5 years each) for external auditors to audited client firms before they can be changed. Therefore, allowing an audit firm for ten cumulative years in any particular client firm will impair the audit quality.

Agency theory suggests that due to information asymmetries and self-interest, the owners lack reasons to trust the management and will seek to resolve these concerns by putting in place mechanisms to align the interests of management with owner and to reduce the scope for information asymmetries and opportunistic. The structural mechanism put in place is the board of directors. However, due to proportion of shares owned by directors in the firms prevent them to summon courage in monitoring management. Therefore, shareholders employ the services of independent auditors to carry out such responsibility. An underlying notion behind this mechanism is the monitoring of the management and the compliance of the relevant regulatory bodies which external auditors would actually contribute to corporate control, thereby increasing the quality of financial statements prepared by the management. This form the bases of investors' decision making regarding the investment in the company, as audit quality give assurance, trust and hope to investors that their investments are secured.

Institutional ownership is the amount of investment in a company that is held by large financial organizations [15,30]. This means that institutions generally purchase shares of a company and can exert considerable influence upon its management and external auditors. According to Bushee [31], and Chen, Firth and Rui [32], institutional ownership are institutions with skills and ability to checkmate management and firms' operational activities and possess certain quality that differentiate them from other forms of owners as they have both human and material resources to influence management accounting policy choice as well as a skill to protest against auditors when they issue irregular financial statement [4,33]. Kane and Velury [34] and Roodpasht and Chashmi [35] in their individual studies assert that the power and incentive to utilize this opportunity depends on the level or amount of shares held/ acquired by the institutions. Therefore, based on the high amount of shares held in the firm, they will influence the board on the appointment of external auditors to their advantage.

Several studies examine the relationship between institutional ownership and audit quality but show inconclusive result. Chan, Lin & Zhang [36] examine the association between institutional ownership and audit quality in China. The findings of the study show that an increase in institutional ownership leads to a general

increase in the demand for higher quality audit in China. Mitra, Hossain and Deis [10] empirically assess the relationship between institutional ownership and audit quality. The study uses audit tenure as proxy for audit quality and find institutional ownership to be significantly and positively related to audit quality. Han, Kang and Rees [11] examine the association between institutional ownership and audit quality in Korea. The study uses Big 4 audit firms as proxy for audit quality and find institutional ownership to be positive and significantly related to audit quality. Contrary to these findings, Rose [37] and Duggal and Millar [38] in their separate studies find negative association between institutional ownership and audit quality. Gorton and Kahl [39] argue that ownership by institutional investors does not necessarily enhance audit quality as they may provide insignificant monitoring role due to their own internal conflict and other shareholders (minority) would require the services of independent auditors in order to resolve the conflicts.

Block-holder ownership represents shareholders who own five percent or more of a company's stock on company outstanding shares [4,9]. Cronqvist and Fahlenbrach [40] and Murya [41] classify block-holders' ownership into various forms, such as individual investors or institutional investors. This suggests that individuals or institutions who acquire five percent or more of a company equity is regarded as block-holder ownership [40]. Ownership concentration is a condition in which a certain amount or proportion of firm stock belong to a majority of stockholders [42]. Choi, Kwak and Yoo [43] suggest that large shareholders may ask for lower audit quality in order to cover up the resources diverted from outside minority shareholders, resulting in lower audit quality . It is assumed that the ownership concentration is a key element of the ownership structure which has a substantial power to influence audit quality [44].

Numerous studies examine the relationship between block-holder ownership and audit quality but empirical findings are mixed. Jusoh, Ahmad and Omar [45] investigate the relationship between ownership block-holder and audit quality among the Malaysian listed companies. The findings show positive significant relationship between ownership block-holder and audit quality. Guedhami and Pittman [46] posit that ownership block-holder will decrease the likelihood of hiring qualified auditors. Lin and Liu [47] find that firms with larger controlling shareholders are less likely to hire a top 10 or high quality auditor, while Ashbaugh and Warfield [48] see positive relationship between dispersed ownership and audit quality. The findings of this study indicate that choosing auditors from the famous big and qualified audit firms or other audit firms depend on ownership block-holder and ownership structure. Nevertheless, Zureigat [8] examines the ownership structure and audit quality and found negative association between ownership concentration and audit quality. This means block-holder ownership affects audit quality negatively.

Peyman and Mina [49] examine the effect of corporate governance mechanisms on audit quality in Iran. The study sampled 94 companies listed in Tehran Stock Exchange for the period 2008-2012. Corporate Governance Mechanisms was the independent variable proxy by institutional and block-holder ownership while audit quality was the dependent variable measured by big4 audit firm and audit tenure. Regression analysis was used to analyzed the data. The findings reveal that both institutional and block-holder ownership has positive and significant effect on audit quality.

Audit firm tenure is the length of the audit firm-client relationship [50]. Long term relationship between auditor and client constitutes a threat to audit quality. This can be possible as personal relationship and familiarity between auditor and client may induce auditors' complacency or hesitancy to challenge appropriately if there are lapses in client company's reports. Several researchers including St. Piere and Anderson [51] and Stice [52] describe audit tenure as short when the same auditor has audited the financial statements of a company for three or five years, and long when the same auditor has audited financial statements of a company for nine or more years. This resulted to arguments and counter arguments among scholars.

The debate on audit firm tenure gives rise to three schools of thought. In the opinion of the first school: proponents of short audit tenure Gul, Jaggi and Krishnan [53]; Azizkhani, Manroe and Shailer [54]; Imhoff [55]; Chan, Cheung, Ariff and Loh [56] and Catanach and Walker [57]. Short audit tenure is one important instrument to curb audit weaknesses in auditing practices as profession and enhance auditor independence, hence audit quality. Secondly, short audit tenure can prevent low-balling practice of audit firms, thereby providing opportunity for audit firms to charge high fee with improve audit quality and to do away with low-balling. Thirdly, audit quality is a product of audit independence and requires short time period. Finally, longer audit tenure affects audit quality due to: (i) creation of economic dependence on the client which may impair audit quality. This would make a client firm to feel that the survival of audit firm depend on them (ii) development of a learned confidence in the client [58,59]. This will make the audit firm to have so much confident on the client due to familiarity which may result in auditor not testing financial assertions of the client (iii) psychological dependence or the development of personal relationship which may lead to acceptance of gifts, opinion shopping, contingent fee arrangements [60]. All these may lure an audit firm into a bond or royalty to the client which in turn impairs audit quality.

In the opinion of the second school of thought Manry, Tiras and Wheatley, [61]; Geiger and Raghunadan [62]; Raghanathan, Barry & Evans, [63]; Magee & Tseng, [64]; DeAngelo, [65]. Longer tenure helps auditors to acquire better knowledge and experience about their customers which may result to increase audit quality. Secondly, short audit tenure would mean a lack of familiarity with the client and its firm-specific risks which is likely to increase the chance of audit failure. This means that there is a high potential that the quality of audit could be lower at the beginning of the auditor-client relationship. Thirdly, longer tenure helps the auditor to develop more skills, expertise, experience and display its potential on the client specific industry. This can be achieved over time as the auditor acquires more knowledge of the client which helps him/her to detect material misstatement in the financial report during the early years of the auditor-client

relationship and the quality increases as the length of auditor tenure increases due to reduction in the information gap.

The third school of thought opponent of both schools: Kwadwo & Mohammad, [66]; Odia, [67]; Patrick & Henning, [68]; Knechel and Vanstraelen [69] posit that long auditor client relationship is either a potential threat to audit quality as it affects auditor independence or a potential benefit with regard to client industry specific knowledge, and concludes that neither short term nor long term audit firm tenure seems to be a significant factor with regard to audit quality. In view of the above argument, the study examine the effect of institutional and block-holder ownership on audit quality of listed manufacturing firms in Nigeria and considered tenure as a proxy for audit quality to determine whether the effect will be positive, negative or has no effect.

The firm size is seen as the characteristics that impacts on the quality of audit (Dechow & Ge, 2006 in Olowokure et al., [70]). This implies that a large firm is expected to have a well defined management team with a good structure that can accommodate, specifically its internal control unit which would add value to its financial statements [71]. The firm size is an important characteristics that affect the quality of audit work positively or negatively [72]. Ben-Amar and Ameur [73], and Khanchel [74] in their individual respective studies found that firm size has a positive influence on the corporate performance and audit quality. This means firm size is an attribute that indicates the amount of firm resources, assets and good management teams which can transform these resources into positive performance .The performance can only reflect in their financial statements prepared and audited by independent auditors.

Researchers over the years have been using the firm size as a surrogate for audit quality [72,75,76]. This is because the large firms were assumed that their management team have portfolios that would influence auditors to succumb to the management requirements [77]. This implies that the firm size is an important characteristic that reflects auditor independence which as well would affect audit quality. This also show that the issue of maintaining auditor independence is more crucial as there is less complexity in smaller firms than larger firms

3. Methodology

The study utilizes a longitudinal/panel research design. A binary logit regression technique was used to examine the effect of institutional and block-holder ownership on audit quality. The study utilizes data from the annual reports and accounts of listed Nigerian manufacturing firms for 12 years period 2005-2016. 59 listed manufacturing firms form the total population for the study (see appendix B).

Three-point filter was employed to consider some firms and eliminate others [4]. Firstly, the filter eliminates all the companies that were listed after 31st December, 2005 as they cannot produce complete data required for the study. Secondly, the filter eliminates all companies that have disappeared from the trading schedule of NSE as at

31st December, 2016. This may be due to mergers and acquisition, voluntary closure or bankruptcy. Thirdly, the filter also eliminates all the companies that experienced technical suspension and were unable to meet up with the Nigerian Stock Exchange requirements within the period. This may be due to change in accounting date, temporary discontinuation of the object of the firm and temporary sanctions by the regulatory body (NSE) as a result of non-compliance with laid down regulations. Therefore, a total of 27 firms were eliminated as they cannot produce data required for the study. Thus, the remaining 32 firms were used for the period 2005-2016 to arrive at 384 firms year observations. The choice of selecting manufacturing firms is that it gives equal opportunity for different forms of auditors to display their potentiality. This allows both big4 audit firms and non-big4 audit firms. Below is the regression:

$$AUDT_{it} = B + B_1 INSO_{it} + B_2 BLHO_{it} + \beta_3 FSIZ_{it} + U_{it}$$

Where

AUDT = Audit quality measured in terms of number of years spent as auditor for sample firms. If between 3 to 5, we assign 1, otherwise 0 (Adeniyi & Mieseigha, 2013; James & Izien, 2014)

INSO = Institutional Ownership measured by proportion of shares held by institutional investors to the total number of company shares (Shehu & Ahmed, 2012)

BLHO = Block-holder Ownership measured by proportion of shares held by major investors exceeding 5% to the total number of company shares (Zureigat, 2011)

FSIZ = Firm Size = Total firm Assets value

U = Error term

it = For sample firm i at year t.

4. Results and Discussions

Table 1.Descriptive Statistics

	Observation	*Mean*	*Std. Deviation*	*Minimum*	*Maximum*
AUDQ	384	.53125	.4996735	0	1
INSO	384	7.8125	4.619975	0	35.92
BLHO	384	23.36036	19.78248	1.23	75
FSIZ	384	6.064794	2.76725	1.00455	33.48248

Source: Stata 11 Output Results

Table 1 reports descriptive statistics with 384 firm observations for the period of 12 years (2005-2016) for 32 manufacturing firms listed on the Nigerian Stock Exchange. The descriptive statistics table shows the dependent and independent variables respectively. The dependent variable, which is Audit Quality is measured by Audit Tenure (AUDT) and the independent variables are Institutional Ownership (INSO) and Block-holder Ownership (BLHO). In addition, the size of the firm (FSIZ) is used as a control variable. The table shows a high result of standard deviation of all the independent variables. The block-holder ownership has a standard deviation of 19.78248 resulting to 1978.2%, while that of institution ownership is 4.619975, amounting to 461.9%.

The high standard deviation show that there is no uniformity in ownership of the listed manufacturing firms in Nigeria. This lead to the wide deviation of variables from their mean. If there was a normal distribution of ownership, the standard deviation would be within the acceptable maximum of 2. The standard deviation of the firm size is 2.76725 resulting to 276.7%. This high standard deviation of firm size may be due to the fact that the sampled firms are of different sizes and maturity.

In addition, Table 1 shows the average mean value of audit firm tenure of 0.53 which is close to the maximum value of 1. The results as shown in Table 1 is in conjunction with the data set of the study, which indicate that if the duration or years covered by audit firm is between 3-5 years, it is coded as 1 and if exceeding 5 years and above, it is coded as 0. The mean audit firm tenure of 0.53 implies that majority of audit firms in Nigeria spend three to five years in auditing Nigerian manufacturing firms. Similarly, the average value of institutional ownership is 7.8125. This suggests that the majority of shareholders in Nigerian manufacturing firms are individuals, family, managerial and so on. This result is not surprising due to the fact that the Nigerian Stock Exchange is still a developing market. This implies that not all shares of listed manufacturing firms in Nigeria are acquired by institutions. The mean of the block-holder ownership is 23.36036. This indicates that other forms of shareholders or ownership constitute a high degree of ownership of the listed manufacturing firms in Nigeria. Moreover, the average value of firm size is 6.064794. This suggests that majority of the manufacturing firms have a high amount of assets, which is the basis of determining their size hence justifying the 3-5 years which an audit firm can render its services to a client before been changed.

Table 2. Result of the Correlation Analysis and Variance Inflation Factor

Variable	Audq	Inso	Blho	Fsiz	VIF	I/VIF
Audq	1.000					
Inso	-0.2339* 0.0000	1.0000			1.02	0.984320
Blho	0.0359 0.4829	0.0389 0.4384			1.00	0.998380
Fsiz	-0.1202* 0.0184	0.1187* 0.0200	1.000		1.01	0.985866
Mean VIF						1.01

Source: Stata 11 Output Results
Note: * represents statistical significance at 5%.

The correlation matrix in Table 2 is used to assess the association between dependent and independent variables and among independent variables themselves. The table shows both positive and negative correlation between dependent the variable, which is audit quality and all independent variables. There is a negative significant relationship between institutional ownership and audit quality. The negative association implies that the more shares acquired by institutions, the less audit quality. There appears to be a positive insignificant relationship between block-holder ownership and audit quality. The positive relationship between block-holder ownership and audit quality indicates that the more share held by block-holder owners, the better audit quality. Similarly, there is negative significant relationship between firm size and audit quality. The negative association between firm

size and audit quality implies that the longer the duration of audit firm in auditing a client, the less the audit quality.

The test for multicollinearity among independent variables was carried using the variance inflation factor (VIF). The result which is shown in Table 2. The criterion for VIF is that there is multicollinerarity where the mean VIF and the tolerance value is greater than 4 and 1 respectively. From Table 2, the mean VIF of 1.01 and the tolerance value were all less than 4 and 1 respectively. Therefore, the results as shown in Table 2 suggest absence of perfect multicollinearity.

Table 3. Regression Results Dep. Variable: Audit Quality

Variable	Model			
	OLS	P-VALUE	FEM	P-VALUE
INSO	-.242922	0.000	-.1355736	0.001
BLHO	.0011271	0.369	.0399832	0.035
FSIZ	-.0168813	0.062	-.437176	0.000
CONS	.07970856	0.000		
Diagnostics				
R^2	0.65			
Adj-R^2	0.58			
Prob F- Stat	0.0000			
D.W-Stat	0.67			
Normalist Test	0.0000			
RAMSEY (F-Stat)	2.67			
Prob > F-Stat	0.047			
H-test (Chi^2)	0.84			
Prob > chi^2	0.35			
Hausman (Chi^2)	15.60			
Prob > chi^2	0.0014			

Note: OLS: Ordinary Least Squares Regression; FEM: Fixed Effect Model; RAMSEY: Model specification error test for omitted variable; H-test: Heteroskedastity test
Source: Stata 11 Output Results

Table 3 reports the result of ordinary least square (OLS) regression conducted for the study (see Appendix B). There appears a negative association between institutional ownership, firm size and audit quality, while there is a positive association between block-holder ownership and audit quality. There is a significant negative relationship between institutional ownership and audit quality with a coefficient value of -.242922 at 5% level of significance. This means that institutional ownership has negative effect on audit quality of listed manufacturing firms in Nigeria. There is insignificant positive relationship between block-holder ownership and audit quality with a coefficient value of .0011271. This implies that block-holder ownership contributes positively to improve audit quality of listed manufacturing firms in Nigeria. There is also an insignificant negative association between firm size and audit quality with the coefficient value of -.0168813. This implies that the size of the firm does not affect the audit quality of listed manufacturing firms in Nigeria. The coefficient value of the constant (CONS) is .07970856 at 5% level of significance. This implies that all other factor remains constant, the impact of board monitoring mechanisms on audit quality have positive significant relationship. The implication of this result is that other variables in the model are relevant to have exhibited meaningful impact on audit quality.

The R^2 (0.65) which is the multiple coefficient of determination gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variables jointly. Hence, it signifies 65% of total variation in audit quality of listed manufacturing firms in Nigeria caused by the total firm size, proportion of shares held by institutional ownership and block-holder ownership. The Adjusted R-square shows that even after adjusting for the degree of freedom the model could only explain about 58% of the total systematic variations in audit quality. This indicates that there are other factors that account for the effect of institutional and block-holder ownership on audit quality of listed manufacturing firms in Nigeria which has been captured by the stochastic disturbance term in the model. The F-statistics and its probability shows that the regression equation is well formulated explaining that the relationship between the explanatory variables combined (that is institutional and block-holder ownership) and audit quality of Nigerian listed manufacturing firms are statistically significant (F-stat = 8.86; F-prob. = 0.0000). The Durbin Watson statistics of 0.67 indicates the absence of first order autocorrelation of the stochastic variables inside the error term in the model within the period of the study.

Table 3 also reports the result of normality test. The test was significant at 5% with a confidence level of 95%. The implication of this result is that the study failed the normality test and as such the null hypothesis, which said that the data for effect of institutional and block-holder ownership on audit quality is normally distributed was rejected and accepted the alternative hypothesis that data for effect of institutional and block-holder ownership on audit quality was not normally distributed. The model specification error test was also conducted as shown in Table 3. The Ramsey F-Stat with its Prob > F-Stat of 2.67 and 0.047 respectively. This signifies that the study has passed the model specification error test as the F-statistics is not statistically significant. Therefore, the null hypothesis that the model has no omitted variables is accepted while the study rejected the alternative hypothesis that the model has omitted variables.

However, this test (logistic regression) was conducted without considering the effect of multicollinearity and heteroscedasticity test which are post regression diagnosis, the presence of which may lead to spurious regression results. To deal with any cases related to multicollinearity and heteroscedasticity in the study, robustness checks were applied to examine the results under different circumstances. The result of heteroscedasticity test as shown in Table 3 indicates H-test chi^2 of 0.84 and Prob > chi^2 0.35 respectively. This implies that the null hypothesis of constant variance is captured and the model is homoscedastic. Therefore, the result of the study as presented in Table 3 show the absence of heteroscedasticity as the variation of the residual or error term is not correlated and would not affect the result of the study. The study further conducted the test of model selection using hausman specification test to determine between random and fixed effects model. The result of the test helps us to accept the fixed effect and reject the random effect model.

A careful examination of Table 3 shows that a unit change in institutional ownership reduces audit quality by -.1355736 and it is statistically significant at 5%. This implies that institutional ownership has the probability of influencing audit quality of listed manufacturing firms in Nigeria. Similarly, a unit change in block-holder ownership increases audit quality by .0399832 and it is statistically significant at 5%. This means that block-holder ownership has the probability of influencing audit quality of listed manufacturing firms in Nigeria positively. In the same vein, a unit change in firm size with negative significance and coefficient value of -.437176 decreases audit quality. This implies that firm size has no probability of influece audit quality.

On the basis of the individual monitoring variables, it was observed that the institutional ownership is statistically significant with the negative coefficient value of -.1355736. On the other hand, block-holder ownership was found to be statistically significant with the positive coefficient value of .0399832, while firm size exhibits a statistically significant and negative relation with audit quality at the coefficient value of -.437176.

The first hypothesis states that institutional ownership has no significant effect on audit quality of listed manufacturing firms in Nigeria. Based on the result of the logistic regression as shown in Table 3 above, the institutional ownership is statistically significant at 5%. This implies that institutional ownership has the likelihood of influencing audit quality. This also suggest that allowing institutions such as banks, insurance companies, pensions fund among others to hold reasonable amount of company shares would enhance audit quality. This provides us with evidence of rejecting the null hypothesis and accepting the alternative that institutional ownership has a significant effect on audit quality of listed manufacturing firms in Nigeria. This finding is consistent with Rose [37] and Duggal and Millar [38], who also found negative association between institutional ownership and audit quality. The finding contradicts the finding of Mitra, Hossain and Deis [10], who found a significant positive relationship between institutional ownership and audit quality.

The second hypothesis states that block-holder ownership has no significant effect on audit quality of listed manufacturing firms in Nigeria. The result of the logistic regression as presented in Table 3 shows that block-holder ownership is positively and statistically significant at 5%. This provides us with evidence of rejecting the null hypothesis and accepting the alternative hypothesis that block-holder ownership has significant effect on audit quality of listed manufacturing firms in Nigeria. The findings are compatible with Ashbaugh and Warfield [48] and Jusoh et al. [45], who also found positive significant relationship between block-holder ownership and audit quality. The finding is contrary to the finding of Guedhami and Pittman [46] and Zureigat [8], who found negative significant association between block-holder ownership and audit quality.

5. Conclusion and Recommendations

In view of the above findings, the institutional ownership of listed manufacturing firms in Nigeria is negatively related with audit quality measured by audit

tenure indicating that at a lower level of shares held by institutional ownership, the level of audit quality could be low. Therefore, increasing the shares held by institutional ownership in the companies to a justifiable proportion by companies' board of directors or companies' management can help enhance institutional ownership contribution toward improving audit quality; and

The block-holder ownership is positively and significantly associated with audit quality measured by audit tenure. This signifies that block-holder ownership contributes positively to audit quality. Thus, reviewing the proportion of shares upward for block-holder ownership by the management or board of directors would encourage block-holder ownership toward sustaining audit quality in the listed manufacturing firms in Nigeria.

In view of the foregoing, the following recommendations are put forward for listed manufacturing firms in Nigeria:

The regulatory authorities particularly the Security and Exchange Commission (SEC) who are responsible for monitoring the compliance of corporate governance by listed companies on the Nigerian Stock Exchange, should come up with policies that will encourage institutional ownership to increase the proportion of shares acquired by them. Based on the data available and extracted from the annual reports of listed manufacturing firms in Nigeria, institutions, such as banks, pensions fund, insurance companies among others have not yet extend their ownership by way of acquiring shares in some listed manufacturing firms in Nigeria. Such policies, if formulated and implemented will go a long way in encouraging the monitoring capability of institutional ownership toward improving audit quality of listed manufacturing firms in Nigeria.

Firms with which block-holder ownership held substantial proportion of shares stand to experience audit quality. This was evidenced by calculated logistic regression result which was statistically significant at 5% level of significance. Therefore, the study recommend that the relevant regulatory body responsible for monitoring and administering the activities of listed manufacturing firms in Nigeria should design policies toward upward reviewing of proportion of shares assigned to block-holder ownership. This will enhance the capability of block-holder ownership to put more effort and commitment for effective monitoring, like any other shareholders, toward sustaining audit quality. This is because block-holder ownership will stand to lose their investment if the firms collapse due to poor audit quality.

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Appendix: Study Results

Appendix B I (Descriptive Statistics)

```
. sum  audt inso blho  fsiz
```

Variable	Obs	Mean	Std. Dev.	Min	Max
audt	384	.53125	.4996735	0	1
inso	384	7.8125	4.619975	0	35.92
blho	384	23.36036	19.78248	1.23	75
fsiz	384	6.064794	2.76725	1.00455	33.48248

Appendix B II (Correlation Matrix)

```
. pwcorr audt inso blho  fsiz, star(0.05) sig
```

	audt	inso	blho	fsiz
audt	1.0000			
inso	−0.2339* 0.0000	1.0000		
blho	0.0359 0.4829	0.0397 0.4384	1.0000	
fsiz	−0.1202* 0.0184	0.1187* 0.0200	−0.0021 0.9666	1.0000

Appendix B III (Ordinary Least Square Regression)

```
. regress audt inso blho  fsiz
```

Source	SS	df	MS
Model	6.25257415	3	2.08419138
Residual	89.3724258	380	.235190594
Total	95.625	383	.249673629

Number of obs =	384
F(3, 380) =	8.86
Prob > F =	0.0000
R-squared =	0.0654
Adj R-squared =	0.0580
Root MSE =	.48496

audt	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
inso	−.0242922	.0054063	−4.49	0.000	−.0349222	−.0136621
blho	.0011271	.0012537	0.90	0.369	−.0013379	.0035921
fsiz	−.0168813	.0090189	−1.87	0.062	−.0346145	.0008519
_cons	.7970856	.0749626	10.63	0.000	.6496921	.9444791

Appendix B IV (Multicollinerity Test)

```
. estat vif
```

Variable	VIF	1/VIF
inso	1.02	0.984320
fsiz	1.01	0.985866
blho	1.00	0.998380
Mean VIF	1.01	

Appendix B V (H-Test)

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of audt

        chi2(1)      =      0.84
        Prob > chi2  =   0.3588
```

Appendix B VI (Ramsey F-Stat)

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of audt
        Ho:  model has no omitted variables
              F(3, 377) =      2.67
                Prob > F =    0.0474
```

Appendix B VII (Normality Test)

```
. mvtest normality audt inso blho  fsiz, bivariate univariate stats(all)
```

Test for univariate normality

Variable	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	─── joint ─── Prob>chi2
audt	0.3092	.	.	.
inso	0.0000	0.0000	.	0.0000
blho	0.0000	0.5243	48.15	0.0000
fsiz	0.0000	0.0000	.	0.0000

Doornik-Hansen test for bivariate normality

Pair of variables		chi2	df	Prob>chi2
audt	inso	463.42	4	0.0000
	blho	872.82	4	0.0000
	fsiz	629.82	4	0.0000
inso	blho	532.88	4	0.0000
	fsiz	375.08	4	0.0000
blho	fsiz	568.95	4	0.0000

Test for multivariate normality

```
    Mardia mSkewness =   13.29604    chi2(20) =  860.276   Prob>chi2 =  0.0000
    Mardia mKurtosis =   53.06305    chi2(1)  = 1689.322   Prob>chi2 =  0.0000
    Henze-Zirkler    =   15.69431    chi2(1)  =  834.291   Prob>chi2 =  0.0000
    Doornik-Hansen                   chi2(8)  = 1017.004   Prob>chi2 =  0.0000
```

Appendix B VIII (D.W-Stat)

```
. estat dwatson

Durbin-Watson d-statistic(  4,    384) =  .6762792
```

Appendix B IX (Fixed Effect Model)

```
Conditional fixed-effects logistic regression      Number of obs     =        372
Group variable: firm                               Number of groups  =         31

                                                   Obs per group: min =         12
                                                                  avg =       12.0
                                                                  max =         12

                                                   LR chi2(3)        =      40.23
Log likelihood  = -173.66636                       Prob > chi2       =     0.0000
```

audt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
inso	-.1355736	.0417323	-3.25	0.001	-.2173675	-.0537797
blho	.0399832	.0189248	2.11	0.035	.0028912	.0770752
fsiz	-.437176	.1010619	-4.33	0.000	-.6352537	-.2390984

Appendix B X (Random Effect Model)

```
Random-effects logistic regression                 Number of obs     =        384
Group variable: firm                               Number of groups  =         32

Random effects u_i ~ Gaussian                      Obs per group: min =         12
                                                                  avg =       12.0
                                                                  max =         12

                                                   Wald chi2(3)      =      18.38
Log likelihood  = -249.92773                       Prob > chi2       =     0.0004
```

audt	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
inso	-.1214266	.0313368	-3.87	0.000	-.1828456	-.0600077
blho	.0073275	.0072796	1.01	0.314	-.0069402	.0215952
fsiz	-.1540826	.0685377	-2.25	0.025	-.2884141	-.0197512
_cons	1.83482	.5256291	3.49	0.000	.8046057	2.865034
/lnsig2u	-1.202567	.7628589			-2.697743	.2926091
sigma_u	.5481077	.2090644			.259533	1.157549
rho	.0836763	.0584919			.0200634	.2894126

```
Likelihood-ratio test of rho=0: chibar2(01) =      3.85 Prob >= chibar2 = 0.025
```

Appendix B XI (Hausman Specification Test)

```
. hausman fe re
```

	―――― Coefficients ――――			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
inso	-.1355736	-.1214266	-.014147	.0275608
blho	.0399832	.0073275	.0326557	.0174688
fsiz	-.437176	-.1540826	-.2830934	.0742704

```
                 b = consistent under Ho and Ha; obtained from xtlogit
       B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

   Test:  Ho:  difference in coefficients not systematic

           chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                   =         15.60
           Prob>chi2 =       0.0014
```