



## AUDIT QUALITY AND VALUE OF SELECTED MANUFACTURING FIRMS: NIGERIAN EXPERIENCE

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### AUTHORS' CONTRIBUTIONS

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### ABSTRACT

This article uses an ex-post facto and cross-sectional research approach to investigate the effect of audit quality on the value of selected manufacturing companies listed on the Nigeria Exchange Group's floor for a ten-year period spanning 2011 to 2021. Using audit quality proxies such as auditor independence, audit firm size, audit group qualification, audit experience, and Tobin's Q, the study analyzes the value of listed companies in Nigeria. We used panel multiple regression to examine the non-homogeneity of firm data, which is why we used Hausman effect tests on secondary data taken from the annual reports and accounts of 34 manufacturing firms. These tests included descriptive analysis, correlation analysis, and a variance inflation factor. The Hausman specification test results indicated that the random panel Least Square (RPLS) regression solution was most acceptable for the dataset. There is statistically significant beneficial impact on the value of Nigerian manufacturing enterprises, according to the panel regression results that showed auditor independence had a favorable impact on firm value. Contrarily, audit experience has a non-significant negative correlation with Tobin's Q, whereas audit firm size and qualifications of audit group have a negligible positive correlation with the value of Nigerian manufacturers. Firms should work to improve auditor independence since it has a large and beneficial impact on audit conclusions. This study's findings imply that auditor independence has a considerable impact on stock market prices, consequently enhancing its monetary worth.

**Keywords:** Firm value; auditor independence; audit firm size; qualification of auditor group and audit experience.

### 1. INTRODUCTION

Profit margin expansion, capital investment decisions, and capital structure decisions all play a major role in maximizing shareholder wealth in a corporation. A company's potential to create profits from its assets or its investment policy is taken into account when

calculating its "firm value," which is an economic concept. According to Sucuahi and Cambarihan [1], the company's ability to maintain trustworthy audit quality has a significant impact on the company's value, which in turn increases the company's shareholders' well-being. The higher the company's ability to sustain quality of their audit, the more significant the potential increase in corporate assets,

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which means the higher the value and the welfare of shareholders. Dang, Vu, Ngo and Hoang [2] explained that any effort to maximize firm value must be a continuous business process. Elliott, Fanning and Peecher [3] state that the firm value estimate influences investors' willingness to buy company shares. Investors may have different interpretations of the information available in the financial statements, but the quality of the financial statements has been theorized to be a factor affecting firm value. Investors in the market can expect more credible and quality information if the audit is of high quality, allowing them to make more accurate business decisions.

Similarly, Lin and Hwang [4] explained that external auditing is an effort from the principal to control agent behaviour in the agency relationship. The auditor will verify the financial statements prepared by management as an independent party. Audit quality is a very important aspect for those directly or indirectly related to the substance of the company's financial statements. With an external quality audit, it is expected that the credibility and quality of financial statements will increase, thereby increasing the value of firms. The above assertion was confirmed in the words of Elliott et al. [3] that the effect of the quality of financial statements on firm value will be strengthened by the quality of the audit process.

A high-quality audit procedure and more conservative financial statements can only be ensured by auditors, according to Liao and Radhakrishnan (2016). As stated by Rodriguez and Alegria [5], the risk of information leaking can be reduced by improving audit quality. To put it another way, the researcher thinks it's crucial that industrial companies listed on the Nigerian Stock Exchange Group have high-quality audits. On that note, we tried to explore different spheres of audit quality such as auditor independence, audit firm size, qualification of auditor group and audit experience that are likely to influence firm value. Some of the audit quality attributes that influences value includes but not limited to auditors independence, audit firm size, tenure, specialization, fees charged, audit opinion and so on. They stated that larger audit firms tend to give higher-quality audit services while Farouk and Hassan (2014) discovered that the size of audit companies and the independence of auditors had a substantial impact on the firms' value. These different findings lead to inconclusive results and mixed outcome.

It is long been known that audit quality has an effect on corporate value, as evidenced by the numerous studies that have examined the topic [6, 7]. The

impact of audit quality on corporate value has only been investigated in depth in a few research. Some studies have examined the relationship between audit quality and corporate value, but in general, the majority of research has examined the relationship between audit quality and financial performance, as well as the quality of financial reports [8,9]. Because of the importance of audit quality, a lot of focus has been placed on a company's financial success, but data on value is still lacking. One of the most common findings in the literature is that audit quality has a direct impact on the financial success of a company. There have been a number of studies that have sought to establish a link between the length of time an auditor has worked for a company and the quality of the earnings they report. These studies include: Piot and Janin [10] Yuniarti [11]; and Enofe, Ngbame, Okunega, and Ediae [12]. Yuniarti [11] found a link between audit fees and audit quality, while Enofe, Ngbame, Okunega, and Ediae [12] found that auditor independence increases audit quality. These disparate findings from previous studies resulted in mixed findings and, as a result, inconsistencies in their conclusions.

However, Inconclusive results can be attributed to a variety of factors, including study design, sample size, data collection instruments, and analysis procedures. Furthermore, these studies were undertaken before IFRS adoption, thus they may not provide a complete picture of the situation. Again, most prior studies have focused on foreign nations. Due to outcomes obtained from the following studies Enofe, Ngbame, Okunega, and Ediae, [12]; more research into the direction of the association between audit quality and firm value is needed. As a result, this research paper is aimed at investigating the effect of audit quality on the value of selected manufacturing companies in Nigeria concentrating on auditor independence, audit firm size, qualification of auditor group and audit experience. Considering this, the following goals were established to steer this research. Specifically, we set to:

- i. Investigate the effect of auditor independence on value of quoted manufacturing firms in Nigeria.
- ii. Evaluate the effect of audit firm size on value of quoted manufacturing firms in Nigeria.
- iii. Examine the effect of qualification of auditor group on value of quoted manufacturing firms in Nigeria.
- iv. Ascertain the effect of audit experience on value of quoted manufacturing firms in Nigeria.

## 2. REVIEW OF RELATED LITERATURES AND HYPOTHESES DEVELOPMENT

### 2.1 Firm Value

It is the value of a company at any given point in time that is depicted by the value of its firm. In theory, it's the amount needed to buy or take over a business. Like an asset, the value of a company can be evaluated by looking at its book value or its market value. A company's market value, however, is the most common definition. In order to maintain a successful business and achieve a competitive advantage, company managers strive to maximize resource use. Even while no single manager may directly influence shareholder value, managers can influence characteristics of the firm that propel shareholder value. To calculate a company's value, researchers Ishaku, Musa, and Mubarakaku [13] used its assets, tax benefits gained from its debt, and bankruptcy expenses linked with its debt. Firm value shows investors' appreciation in the Nigerian capital market for its manager's performance manifested by changes in the company's stock price. Based on Wang and Huang [8,9], the firm value in this study's analysis is proxied by the Tobin's Q formula. Tobin Q measures firm value by comparing the equity market value plus total debt, divided by the company's total assets.

### 2.2 Auditor Independence and Firm Value

Audit independence is described by Okolie and Izedonmi [14,15] as an auditor's unbiasedness in making choices during an audit. Independence entails being free of inspiration, stimulus, or guidance, and the usefulness of audit function will be severely compromised if independence is not achieved. According to previous research, a large audit fee given by a corporation to its external auditor strengthens their economic links and, as a result, may jeopardize the auditor's independence [12]. An auditor's lack of independence creates the perception that he or she lacks objectivity. A breach will likely go unreported if it is discovered by an auditor. If a company's external auditors charge too much for their services, this could compromise the auditor's impartiality, according to past studies [14,15]. Logs of audit fees and remunerations are used to evaluate audit independence. Managers can influence auditor decisions when financial operations are functioning smoothly, and management will retain one auditor. In reality, based on the foregoing explanation and the findings of previous studies, our study does not seek to predict any sign for audit fee; rather, we hypothesize that audit independence and firm value have a significant relationship (Hypothesis 1).

### 2.3 Audit firm Size and Firm Value

Lawrence, Minutti-Meza, and Zhang (2011), as well as Awa and Obinabo [16], agreed that larger firms give better audit quality than smaller firms. As a result, De Angelo [17] theorizes that larger organizations execute better audits since their reputation is on the line. Larger companies can recruit more highly trained individuals since they have more resources at their disposal. Others have argued that large auditors can charge more because of the lower danger of lawsuits for their clients. There are some who say that there is no true difference in audit quality, but that the illusion occurs because huge companies are well-known and have a reputation for excellent quality. As a result of the findings, large audit firms are perceived to promote auditor independence and firm value, whereas large clients are perceived to damage auditor independence. The evidence is equivocal on the whole, but it appears that there is a relationship between audit firm size and audit quality. However, because there are some contradictions in the literature, the current study will not propose any sign; rather, we will hypothesize that there is a significant relationship between audit company size and business worth (Hypothesis 2)

### 2.4 Qualification of Auditor Group and Firm Value

An auditor's or audit partner's level of education might have an impact on the quality of the audited financial results. The quality of financial reporting will be affected by the quantity of qualified auditors in a group. A high level of auditor education is an important factor in improving audit quality. Since auditors with a post-graduate degree have greater knowledge, they provide more qualified audit work than those with a bachelor's degree. There is also a belief that educated auditors are more capable, competent, and put in more effort [18, 19, 20]. Educated auditors tend to be more conservative in their approach to auditing because of their training and experience, and this might help them make better use of their limited time. According to studies by Che et al. [19] and Lai, Sasmita, Gul, Foo, & Hutchinson [21], highly educated auditors put in more effort, which is likely to increase audit quality. Taking into account the contradictory theoretical reasoning, this study does not forecast any sign for the effect of auditor group qualification on firm value, but propose that there is a strong relationship between auditor group qualification and firm value (Hypothesis 3)

### 2.5 Audit Experience and Firm Value

This is defined as the period between auditor-client contacts [14,15], which is not otherwise obtained

through auditor tenure. It includes the auditors' work experience as well as the professionalism gained from years of auditing. A long-term relationship between the auditor and his client may compromise the auditor's ability to be innovative because of the danger of familiarity creeping in. Internal control and risk sources may not receive as much attention if the interaction is prolonged [14,15]. Financial reporting quality is determined by the audit firm's experience. Experiences gained by an auditor while working in a global setting have a bearing on the quality of the audited financial results. Auditors are more objective when they are first hired, but their objectivity erodes over time and is at its worst after 20 years on the job [14,15]. There is evidence that auditor tenure does not have a deleterious effect on audit quality. A correlation between audit tenure and audit quality has been identified in previous studies. Some research [22, 23] reveal a positive correlation, while others document a negative or no link [22-25]. A three-year limit on auditing tenure is mandated in Nigeria, however this appears to be largely ignored. Nevertheless, considering the contradicting theoretical argument, this paper does not predict any sign for the effect of audit experience on firm value but propose that *there is a significant effect between audit experience and firm value (Hypothesis 4)*

## 2.6 Theoretical Framework

This paper was based on the signaling theory, which states that high-value corporations leverage the quality of audited financial information presented to transmit market signals. Investors and other interested parties may suspect a company is trying to hide something if it doesn't keep up with the level of transparency set by its peers. This has been proved in previous study to be the case. As a result, a high-quality audit sends a signal to the market that the financial statements it reviews are more reliable than those of lower quality auditors. As a result, larger audit companies and more experienced auditors are rewarded (punished) by the market with larger gains (or losses) in share prices [16]. This means that signalling might theoretically alter the demand for audit quality as well as monitoring. Business value and audit quality are linked because of the transparency and credibility it delivers to the market, as well as the assurance it provides to stakeholders concerning audit quality.

**Empirical Studies:** Awa and Obinabo looked into the impact of audit quality on the profits of Nigerian listed industrial goods companies on shareholders' dividends [16]. Nigerian listed industrial products businesses were studied for the impact of auditor independence, audit firm size, and auditor tenure on

earnings. The study examined data from 2012 to 2018 using an ex post facto methodology and a panel data regression model with statistical software called E-view 9.5. Listed industrial goods firms in Nigeria benefited from auditor independence and audit firm size, however auditor tenure had a negative and minor influence on the profitability of listed industrial goods companies in Nigeria, according to the study. In light of the findings, investors and other stakeholders should pay close attention to the duration of the audit tenure of companies audited by independent auditors and large audit firms (the Big 4), as a longer audit tenure may affect audit quality and hence the dependability of reported earnings.

It has been found that audit quality is linked to firm value in Nigeria's publicly traded insurance enterprises, according to Ishaku, Musa, and Mubarakaku [13]. For five years (2015-2019), annual reports and financial statements for listed insurance businesses were used to gather data. It was discovered that the size of an audit firm has a statistically significant negative impact on the value of the company. Although there is a correlation between audit firm lifetime and firm valuation, the association is not statistically significant. Audit fees increase a company's value in a good and significant way. An increase in the size of a firm can have a significant impact on its value. In contrast, there is a positive correlation between a company's age and its firm worth, which is not statistically significant. For insurance companies, it is recommended that they keep their audit company in place for as few years as possible, according to a new study.

Between 2013 and 2017, Wijaya [26] examined the influence of audit quality on the firm value of all Indonesian Stock Exchange-listed manufacturing enterprises. Secondary data were examined through the use of multiple regression analysis. According to the data, the stock market value of Indonesian manufacturing firms benefits from high audit quality. On the Indonesian capital market, companies with higher-quality audits are well-received. Increased audit quality reduces agency costs, reduces information asymmetry, and increases the value of the organization. Companies in Indonesia's capital market should hire better auditors in order to increase their worth.

In Nigerian consumer products enterprises, Ekwueme et al. [27] investigated the effect of external auditor independence on earnings management. A multivariate technique uses secondary data from various organizations' financial statements to determine and measure the degree of earnings manipulation. Over a ten-year period from 2010 to

2019, the Nigerian Stock Exchange's consumer products companies were studied. Ex-post facto and longitudinal designs were used in this investigation. It was determined that the annual reports of chosen consumer goods companies contained three (3) specific aims and hypotheses that could be tested using a variety of statistical methods. There is a positive non-significant association between audit tenure and the amount of discretionary accruals in Nigerian consumer goods companies, while company size and the joint supply of audit and non-audit services are both negative and significant.

A high quality audit can have a considerable impact on the relationship between international diversity and firm value in Jordanian publicly listed firms, according to Alsmairat and Yusoff and MdSalleh [28]. Comparing financial and non-financial industry data, the researchers discovered that Jordanian enterprises' firm value is lowered as a result of international diversification.

Regression and covariance analysis was employed by Ugwunta, Ugwuanyi, and Ngwa [29] to assess the impact of audit quality on the share prices of Nigerian listed oil and gas companies. In Nigeria, the composition of the audit committee and the type of auditor chosen have a considerable impact on oil and gas market pricing. When it comes to the stock market, external auditors have a negative impact on stock prices, whereas the type of auditing company (BIG4/NONBIG4) and auditor independence have a positive and considerable impact. As a result, the share prices of listed Nigerian oil and gas businesses will rise as a result of their cooperation with the BIG4 external auditors.

Many Nigerian banks were examined to discover if audit quality had an impact on their financial results. Using the statistical regression tool in SPSS Version 20 for the period 2008-2017, data was retrieved from bank financial records. According to the study's findings, the return on assets and independence of the audit committee of listed Nigerian banks have a significant impact on their equity. An audit firm's competence and reputation are important considerations for selecting the size of its audit committee, according to studies on the profitability of Nigerian banks.

### 3. METHODOLOGY

Our study adopts cross sectional and *ex-post facto* research design because this design enables us to test the effect between audit quality and value of manufacturing firms in Nigeria without altering or manipulating what has already been documented. The population of the study comprises all the sixty-one (61) quoted manufacturing firms in Nigeria as at 31 December, 2021. The sample, on the other hand, is made up of 34 listed manufacturing companies chosen based on data availability. The thirty-four manufacturing companies chosen for the study are those who provide complete information about their auditors, to enable us measure the study variables. Because of the vast representation of the population that is the hallmark of sampling, the sample represents 58 percent of the research population, which is considered adequate. Secondary data was gathered from the sampled companies' annual reports and accounts for a ten-year period spanning 2011 to 2020. With the use of Eview software, the data acquired for the study was analyzed using the panel multiple regression technique. The study variables and their measurement are presented in Table 1.

**Table 1. Operationalization of variables and their measurements**

<b>Variables</b>	<b>Acronyms</b>	<b>Measurement</b>
Firm Value captured using Tobin's Q	<b>FMVAL</b>	Total market value of the firm/total assets value of the firm (inspiration drawn from prior studies like; Tyokoso, U-ungwa and Ojonimi, [29])
Audit Independence	<b>AUDIND</b>	Quantum of audit fees received (inspiration drawn from prior studies like; Okolie; [14,15], Ekwueme, Anichebe and Orjinta, [27])
Qualification of auditor group	<b>QUALAG</b>	Auditors or audit partners with post-graduate education measured as a dichotomous variable 1 if the auditor has post-graduate education qualification and 0 if otherwise (inspiration drawn from prior studies like; [30])
Audit Experience	<b>AUDEXP</b>	Length of auditor client relationship measured as a dummy variable 1 if a particular auditor has audited the firm for more than three years and 0 if otherwise (inspiration drawn from prior studies like Okolie; [14,15])

Source: Researchers' Ideology (2022)

The linear relationship between the dependent and independent variables is represented in the panel multiple regression model below:

TOBIN'S

$$Q_{it} = \beta_0 + \beta_1 \text{AUDIND}_{it} + \beta_2 \text{AUDFSZ}_{it} + \beta_3 \text{QUALAG}_{it} + \beta_4 \text{AUDEXP}_{it} + \epsilon_{it} \dots \dots \dots (1)$$

Where,

Tobin's  $Q_{it}$  stands for the proxy for measuring Firm value for firm  $i$  in time  $t$ ,

$\text{AUDIND}_{it}$  stands for Auditor Independence for firm  $i$  in time  $t$ ,

$\text{AUDFSZ}_{it}$  means Audit firm size for firm  $i$  in time  $t$ ,

$\text{QUALAG}_{it}$  connotes Qualification of auditor group for firm  $i$  in time  $t$

Subscripts  $i$  denote number of firms,  $t$  denotes years or time-series dimensions ranging from 2011-2020,  $\epsilon$  is the error term of the model capturing other unexplanatory variable and  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  stands for regression model coefficients.

#### 4. RESULTS AND DISCUSSION

Studying publicly traded manufacturing organizations from 2011 to 2020, we examined the connection between audit quality and firm valuation over that time period. Descriptive statistics, correlations, and variance inflation factor (VIF) analyses were conducted as part of preliminary data testing. The descriptive data of the selected consumer goods firms that make up our sample are shown in the table.

Table 2 above shows the mean values for each variable, as well as their maximum, minimum, standard deviation, and Jarque-Bera values, which show the data's normalcy. Results offered insight on the nature of Nigerian manufacturing businesses that were studied. Accordingly, the purpose of descriptive statistics was to provide an overall description of the data's distributional characteristics, as well as identify any anomalies or patterns that would be problematic for future studies. Because of this, the study's data was first analyzed using simple descriptive approaches to describe and summarize the data collected. Table 2 summarizes the study's objectives, and the information in this section reflects those findings. For the purpose of this study, we sought to establish how audit quality and company value vary across the 34 selected Nigerian manufacturing enterprises.

Firm value was computed as the market capitalization divided by the value of all company assets, with an average value of 1.013 as the dependent variable. It was found that over the period under examination, an

average positive value of 1.013 was found among the companies sampled. For the time period under consideration, the firms' values range from 2.930 to 0.510. There is a large gap between the maximum and least firm value, which suggests that the expected earnings of each firm are not homogeneous across the time period in question. The standard deviation of the firm value is 0.3388. Data on firm valuation had a skewness of 2.47, which indicated that most values grouped to the left. Value 11.88 has an above-average (more than 3) kurtosis, suggesting that the distribution is leptokurtic, with a small number of outliers.

The audit fee was used to measure audit independence, and the mean value was 1.650, with a standard deviation of 7.133, indicating that audit fees are highly concentrated around the mean value. The greatest and smallest numbers are 48.107 and 0.00, respectively, in this range. As can be seen by looking at the Jacque-Bera statistic of 18082 and the accompanying significance level, the data appear to be normal. Audit company size (BIG4) has an average value of 0.562 with a standard deviation of 0.496, which is similar to the previous point. There are two dichotomous points: 0 and 1. Big4 auditors' service was 56.2 percent of the time during the trial, with a 49.6 percent departure from the mean This indicates that the data does not meet the symmetrical distribution criteria because of the value of skewness of -0.248. A non-Gaussian distribution of audit company size is also indicated by a coefficient of Kurtosis of 1.061.

With a standard deviation of 49.4 percent and a minimum and a maximum qualification of auditor group (QUALAG) as determined by dichotomous variable of 0, the summary descriptive statistics in Table 2 above show that on average, 42.1% of auditors had post-graduate degree qualifications. There is a 49.4 percent discrepancy between data from the sample firms and the mean in this study The coefficient of skewness 0.321 indicates that the data is positively skewed, which means that the majority of the values were clustered to the left. According to the kurtosis for auditor education and qualifications, which is less than 3, the distribution can be described as platykurtic, which means there are fewer outliers.

According to this study's findings of audit experience, 58% of the audit firms in the sample have been working with their audit firm for more than three years. In addition, the standard deviation of 0.492 suggests that there are a significant number of enterprises in the distribution. There is a maximum and lowest value for the dichotomous variable of long-serving auditor, which is 0 and 1. This means that the data from the sample firms differs from the

mean by 49.2 percent. Skewed data indicates that the majority of the values clustered to the right of a distribution, and the skewness for audit experience was -0.358. This indicates that the distribution of audit experience is platykurtic with a few outliers because the Kurtosis for audit experience was 1.128. Data are normal, as suggested by the Jacque-Bera statistic and the p-value (0.000).

For the most part, JB Probability values of 0.0000 suggest that all variables have a regular distribution at a 1% significance level. As a more accurate indicator of outliers, it suggests that all variables are roughly typical. As a result, this shows that there are no outlier variables, or if there are, they will have little effect on the conclusion and are therefore reliable. Using panel least squares estimate techniques is also appropriate in this scenario. Therefore, any recommendations made would, to a large extent, represent the actual characteristics of the research population.

**4.1 Pearson Correlation Matrix**

Pearson’s correlation matrix was applied to check the degree of association between audit quality components and value of quoted manufacturing firms in Nigeria so as to determine the nature or degree of association i.e. positive or negative correlation. Correlation coefficient measures the direction and degree of association between two or more variables. Therefore, in examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix) and the result is presented in the Table 3.

The above results show that there exists a positive but weak association between firm value and audit firm size while a negative and very weak association exists between firm value, audit independence and qualification auditor group respectively. It was discovered that another negative and strong association exists between auditor independence and

other explanatory variables while a very positive and strong association exists between audit firm size and audit experience. There exists a weak and negative association between qualification of auditor group audit experience. As a result, while screening for multicollinearity, the researchers discovered that no two explanatory factors were perfectly or highly correlated in the correlation table above, ruling out the possibility of an outlier. This shows that the model employed for the investigation does not have a multicollinearity problem. This also explains why panel regression analysis and the variance inflation factor were used (VIF).

**4.2 Test of Multicollinearity or Variance Inflation Factor (VIF)**

Multicollinearity was tested using the Variance Inflation Factor (VIF) and its reciprocal, or tolerance. These diagnostics examine how closely the regressors are linked to one another in terms of the stability and volatility of the regression estimates. Variance Inflation Factor (VIF) was used to check for multicollinearity and to test if the independent variables were perfectly correlated. The following table 4 shows the outcome of the Variance Inflation Factor (VIF).

Table 4. VIF results show that the mean coefficient of the independent variables is less than ten. A multicollinearity effect is insignificant, as VIF values for all variables are less than 10. This suggests that the variables did not have any multicollinearity issues, and as a result, all of them were kept in the regression model. Audit company size (2.01) was followed by auditor independence (1.057) and the qualifications of the auditor group (1.024) in the table, which all had variance inflation factors (VIFs) of less than 10: (1.987). As a result, all the variables were included in the regression model, implying that there was no problem with multicollinearity. This signifies that

**Table 2. Descriptive statistics analysis**

	<b>FMVAL</b>	<b>AUDIND</b>	<b>AUDFSZ</b>	<b>QUALAG</b>	<b>AUDEXP</b>
Mean	1.013000	1.650896	0.561765	0.420588	0.588235
Median	0.940000	0.073600	1.000000	0.000000	1.000000
Maximum	2.930000	48.10780	1.000000	1.000000	1.000000
Minimum	0.510000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.338846	7.133636	0.496902	0.494381	0.492878
Skewness	2.477790	5.854638	-0.248966	0.321731	-0.358569
Kurtosis	11.88239	36.75349	1.061984	1.103511	1.128571
Jarque-Bera	1465.607	18082.41	56.72110	56.81845	56.90085
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Observations	340	340	340	340	340

Source: Researchers’ summary of descriptive result (2022)

**Table 3. Correlation analysis result**

	FMVAL	AUDIND	AUDFSZ	QUALAG	AUDEXP
FMVAL	1.000000				
AUDIND	-0.064090	1.000000			
AUDFSZ	0.123987	-0.229472	1.000000		
QUALAG	-0.051577	-0.067251	-0.100054	1.000000	
AUDEXP	0.095202	-0.239661	0.790688	-0.049848	1.000000

Source: Researcher's summary of correlation result (2022) using E-view 10

**Table 4. Variance inflation factor result**

Variance Inflation Factors			
Date: 03/05/22 Time: 23:32			
Sample: 2011 2020			
Included observations: 340			
Variable	Coefficient	Uncentered	Centered
	Variance	VIF	VIF
C	0.002343	2.436605	NA
AUDIND	9.41E-06	1.084056	1.057379
AUDFSZ	0.005517	3.822310	2.011414
QUALAG	0.001364	1.275255	1.024355
AUDEXP	0.004211	3.503431	1.987708

Source: Researcher's summary of VIF result (2022)

**Table 5. Hausman effect tests**

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.372163	4	0.9847

Source: Researcher's summary of Hausman effect tests result (2022)

there are no outliers and no correlations between the variables. Using Jacque Bera (JB) in descriptive analysis to check for the problem of normalcy and multiple collinearities is also supported by this evidence. As a result of our findings, panel least square estimation methods are now justified. As a result, any recommendations given would be representative of the genuine population under investigation, and hence may be utilized to draw relevant conclusions.

**4.3 Regression Results and Discussion of Findings**

In order to examine the relationship between the dependent variable (FMVAL) and the independent variables (AUDIND, AUDFSZ, QUALAG and AUDEXP) and to test the formulated hypotheses, we employed panel regression analysis since the data had both time series (2011-2020) and cross sectional data properties (34 quoted manufacturing firms). However, the study recognizes the non-homogeneity of the firms, necessitating the necessity to examine its

impact on the data. To determine which effect to explain, the Hausman effect test has to be used. Because our data is a panel data with comprehensive information, this is whether fixed effect or random effect should be utilized in interpreting the regression result or determining which is the best to use for the study.

A chi-square statistic value of 0.3721 and a probability value of 0.9847, which is larger than 5%, indicates that the data collected by the firms is not homogeneous. In this case, the Chi-square (Prob) value is more than 5%, so the random effect is accepted and its regression is interpreted, but the fixed effect is rejected.

The R. squared value was found to be 0.364 (36.4 percent) and the R-squared corrected value to be 0.273, as shown above (27.3 percent). There were 36.4% of the systematic fluctuations in individual dependent variables explained by the model during a 10-year period while 64.4% of the total variations remained unaccounted for and were thus captured by



the stochastic error factor. R-squared was 36.4%. F-statistics value of 2.92 and probability value of 0.000 show that the overall audit quality model utilized for the analysis was statistically significant at a 1% level of probability. This supports the validity of the model we employed to conduct the investigation. Durbin Watson's 1.623 statistic again demonstrated that the model is well-spread since the value is roughly 2 and that there has been no self or auto correlation problem and that error are independent of each other.

In addition to the above, the specific findings from each explanatory variable were provided as follows:

**Ho<sub>1</sub>: Auditor independence has no significant effect on firm value of quoted manufacturing firms in Nigeria.**

Based on the regression result above, it was found that audit fee which measures auditor independence has a positive and statistically significant effect on firm value having recorded a positive coefficient value of 2.004 and probability value of 0.0536 ( $\beta_1 = 2.004, p = 0.0536 < \alpha = 0.05$ ). The value  $\beta_1$  was positive showing that audit fee has a positive effect on value of listed manufacturing firms in Nigeria hence when audit fee increases by one naira, auditors independence is affected thereby increasing the value of firms. This empirically validates the argument that higher fees may result in impairment of auditor independence and hence create greater opportunities for value creation.

When auditors independence is enhanced by payment of higher fees, the auditor puts in his best to ensure that value is maximized thereby improving the value of quoted manufacturing firms. This suggests that, a N1 increase in total audit fees increases firm value by 2.004%. A positive relationship between audit fee and firm value implies that higher audit fees tend to increase auditors independence and when independence is achieved, value is maximized.

**Ho<sub>2</sub>: Audit firm size does not significantly affect value of quoted manufacturing firms in Nigeria.**

Audit firm size which was measured using BIG4 audit firms was found to have a positive but insignificant effect on firm value having recorded a positive coefficient value of 0.125 and p- value of 0.2142. This implies that the large reputable audit firm with relevant expertise do not compromise independence in the course of their audit exercise, as indicated by a positive effect on firm value, but the result is not statistically significant at all levels. Though not statistically significant, the result is consistent with the proposition that BIG4 audit firm has higher chances of improving firms market value. Based on this, the study fails to reject the null hypothesis two (H<sub>02</sub>) which states that, audit firm size has no significant effect on the value of manufacturing firms in Nigeria.

**Table 6. Regression result**

Cross-section random effects test equation:				
Dependent Variable: FMVAL				
Method: Panel Least Squares				
Date: 03/05/22 Time: 23:31				
Sample: 2011 2020				
Periods included: 10				
Cross-sections included: 34				
Total panel (balanced) observations: 340				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.972479	0.053400	18.21128	0.0000
AUDIND	2.000429	3.003533	2.121371	0.0535
AUDFSZ	0.125130	0.100519	1.244835	0.2142
QUALAG	0.021073	0.038401	0.548766	0.5836
AUDEXP	-0.034342	0.070339	-0.488236	0.6257
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.364107	Mean dependent var		1.013000
Adjusted R-squared	0.273947	S.D. dependent var		0.338846
S.E. of regression	0.307968	Akaike info criterion		0.587370
Sum squared resid	28.64299	Schwarz criterion		1.015311
Log likelihood	-61.85282	Hannan-Quinn criter.		0.757886
F-statistic	2.929338	Durbin-Watson stat		1.623922
Prob(F-statistic)	0.000000			

Source: Researcher's summary of regression result (2022)

**Ho<sub>3</sub>: Qualification of auditor group does not significantly affect value of quoted manufacturing firms in Nigeria.**

From the regression result above, it was discovered that qualification of auditor group has a positive but statistically insignificant effect on value of manufacturing firms in Nigeria having recorded a positive coefficient value of 0.0210 and probability value of 0.5836 ( $\beta_3 = 0.0210$ ,  $p = 0.5836$ ). The value of  $\beta_3$  which was positive showing that auditor education level has a positive effect on value of listed manufacturing firms in Nigeria hence when an auditor obtains an additional qualification, auditors independence is boosted as these qualifications make them more conservative when they perform audit tasks thereby improving firm value by 0.0210 magnitude. This suggests that, a 1% increase in auditors' educational level maximizes firm value by 0.0210. One of the most important factors that improves audit quality is the level of education of the auditor (Yan & Xie, 2016). As a result of possessing more information, being more knowledgeable and competent, and putting more effort, auditors with a post-graduate degree provide more qualified audit work than auditors with a bachelor's degree. When performing audit jobs, educated auditors are more cautious because of their qualifications. According to the findings of Che et al. [19] and Lai et al. [21], better educated auditors put in more effort because a higher level of audit effort is likely to improve audit quality and thus firm value [31].

**Ho<sub>4</sub>: Audit experience has no significant effect of value of quoted manufacturing firms in Nigeria.**

The random panel regression result above revealed that audit experience has negative effect on value of quoted manufacturing firms in Nigeria with a negative coefficient value of -0.0343% and t-statistics value of -0.488 and a probability value of 0.6257 which is statistically insignificant. This implies that when auditor length of service is elongated by one year, value of firms tends to decrease by 0.034 degree, indicating that the more time an audit firm spends with the client, the more auditor independence decreases, and the greater the possibilities of not discovering any material misstatement. This implies that, the more audit firm stays with a client the value decreases, suggesting that audit experience gotten by lengthy service and/or familiarity between audit firm and the client did impairs auditor independence in the manufacturing companies in Nigeria during the period of the study. That is to say that long-tenured auditors are less likely to issue a modified audit opinion because they are less independent in a long-term relationship. This relationship supports the view of

regulators of mandatory audit rotation. Hence, the null hypothesis of a no significant relationship between audit experience and firm value is accepted [32,33].

**5. CONCLUSION AND RECOMMENDATIONS**

The quality of reported earnings and the audit function's capacity to successfully increase the value of industrial companies across the country are now seriously in doubt. Quality of audited reported accounting information, and how it relates to corporate value, is a major source of concern. This raises the question of whether company failures and stock price volatility are not the result of a bad audit function, particularly when it comes to catching earnings falsification. This research examined the impact of audit quality on the value of a company. It was found that auditor independence has an enormous impact on the value of publicly traded companies, therefore making them more valuable.

Conclusively, the proper valuation of a company is largely determined by investors' perceptions of the company's audit fundamentals. Given the beneficial and large impact of auditor independence, companies should aim to improve the auditor's unbiasedness in making choices during audits. This will improve audit quality and, as a result, firm value. Although the size and qualifications of the external auditor have a minor impact on firm value, firms should strive to work with the BIG4 external auditors in Nigeria, with a focus on their level of education, as such an association could improve the audit process' credibility and, by extension, their market value.

Furthermore, because auditing listed companies involves a complex auditing environment that necessitates independence, experience dynamics, qualification, and the use of a Big 4 audit firm, auditors should gain experience in a specific sector on their own to better understand the scope of business and financial statements of listed companies.

**COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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**APPENDIX**

**Descriptive analysis output**

	<b>FMVAL</b>	<b>AUDIND</b>	<b>AUDFSZ</b>	<b>QUALAG</b>	<b>AUDEXP</b>
Mean	1.013000	1.650896	0.561765	0.420588	0.588235
Median	0.940000	0.073600	1.000000	0.000000	1.000000
Maximum	2.930000	48.10780	1.000000	1.000000	1.000000
Minimum	0.510000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.338846	7.133636	0.496902	0.494381	0.492878
Skewness	2.477790	5.854638	-0.248966	0.321731	-0.358569
Kurtosis	11.88239	36.75349	1.061984	1.103511	1.128571
Jarque-Bera	1465.607	18082.41	56.72110	56.81845	56.90085
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	344.4200	561.3048	191.0000	143.0000	200.0000
Sum Sq. Dev.	38.92274	17251.29	83.70294	82.85588	82.35294
Observations	340	340	340	340	340

**Correlation result**

	<b>FMVAL</b>	<b>AUDIND</b>	<b>AUDFSZ</b>	<b>QUALAG</b>	<b>AUDEXP</b>
FMVAL	1.000000	-0.064090	0.123987	-0.051577	0.095202
AUDIND	-0.064090	1.000000	-0.229472	-0.067251	-0.239661
AUDFSZ	0.123987	-0.229472	1.000000	-0.100054	0.790688
QUALAG	-0.051577	-0.067251	-0.100054	1.000000	-0.049848
AUDEXP	0.095202	-0.239661	0.790688	-0.049848	1.000000

Variance Inflation Factors  
 Date: 03/05/22 Time: 23:32  
 Sample: 2011 2020  
 Included observations: 340

Variable	<b>Coefficient</b> Variance	<b>Uncentered</b> VIF	<b>Centered</b> VIF
C	0.002343	2.436605	NA
AUDIND	9.41E-06	1.084056	1.057379
AUDFSZ	0.005517	3.822310	2.011414
QUALAG	0.001364	1.275255	1.024355
AUDEXP	0.004211	3.503431	1.987708

**Correlated Random Effects - Hausman Test**

Equation: Untitled

Test cross-section random effects

Test Summary

	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.372163	4	0.9847

**Cross-section random effects test comparisons:**

Variable	Fixed	Random	Var(Diff.)	Prob.
AUDIND	-0.000429	-0.001196	0.000003	0.6618
AUDFSZ	0.125130	0.101046	0.004587	0.7221
QUALAG	-0.021073	-0.024424	0.000111	0.7505
AUDEXP	-0.034342	-0.022710	0.000736	0.6681

Cross-section random effects test equation:

Dependent Variable: FMVAL

Method: Panel Least Squares

Date: 03/05/22 Time: 23:31

Sample: 2011 2020

Periods included: 10

Cross-sections included: 34				
<b>Total panel (balanced) observations: 340</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.972479	0.053400	18.21128	0.0000
AUDIND	2.000429	3.003533	2.121371	0.0535
AUDFSZ	0.125130	0.100519	1.244835	0.2142
QUALAG	0.021073	0.038401	0.548766	0.5836
AUDEXP	-0.034342	0.070339	-0.488236	0.6257
<b>Effects Specification</b>				
<b>Cross-section fixed (dummy variables)</b>				
R-squared	0.364107	Mean dependent var	1.013000	
Adjusted R-squared	0.273947	S.D. dependent var	0.338846	
S.E. of regression	0.307968	Akaike info criterion	0.587370	
Sum squared resid	28.64299	Schwarz criterion	1.015311	
Log likelihood	-61.85282	Hannan-Quinn criter.	0.757886	
F-statistic	2.929338	Durbin-Watson stat	1.623922	
Prob(F-statistic)	0.000000			

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