Effect of Board Independence and Ownership Structure of Listed Non-Financial Firms in Nigeria on Audit Pricing

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ABSTRACT

This study investigated the effect of board independence and ownership structure of audit pricing of listed non-financial firms in Nigeria. Two research questions and hypotheses were formulated in line with the objectives of this study. Anchored on Resource Dependency theory, the study used Ex-post facto research design. 77 listed non-financial firms in Nigeria were purposively selected as the population sample. The data used secondary data and were drawn from 2014 to 2023. The secondary data collected were analyzed using descriptive statistics, data normality test, correlation analysis and regression analysis. The results indicated that Board Independence has non-significant effect on audit pricing among listed non-financial firms on the Nigerian Exchange Group. This outcome also suggests that variations in the proportion of non-executive directors on the board do not have a meaningful influence on the audit fees paid by firms. The study also found that ownership structure proxied by institutional ownership has a significant positive effect on audit pricing among listed non-financial firms in Nigeria. This indicates that, holding other factors constant, a unit increase in institutional ownership will yield a statistically significant increase in the audit fees paid by firms. It was concluded that the positive association of factors like institutional ownership with audit fees suggests that certain governance structures can drive demand for more rigorous audits, reflecting the increased oversight expectations of stakeholders. The study therefore recommended that stakeholders should implement stronger internal control systems and corporate governance frameworks. Additionally, the use of the Least Squares Dummy Variable (LSDV) regression estimator enhances the robustness of the findings, as this method effectively controls for unobserved heterogeneity among firms, leading to more reliable results.

Keywords: board independence, ownership structure, audit pricing, governance

INTRODUCTION

Background to the Study

The role of audit stands paramount in ensuring the reliability and transparency of financial information. The Institute of Chartered Accountants of Nigeria (ICAN) and the Financial Reporting Council of Nigeria (FRCN) provide guidelines for audit pricing, ensuring that auditors adhere to professional standards and ethical practices. In Nigeria, listed non-financial firms are subject to audit pricing, which is the process of determining the fees payable to auditors for their services. Auditing is a vital component of corporate governance, as it provides stakeholders with an independent opinion on the fairness and accuracy of a company's financial statements. The audit market in Nigeria is dominated by the Big Four audit firms (Deloitte, EY, KPMG, and PwC), which audit the majority of listed companies. The pricing of audit work has been a central issue that previous studies were motivated to examine the determinants of audit fees (Al-Harshani, 2008). Chersan (2019) maintained that amount paid for audit is questioned as the audit quality provided by the financial auditors has become a growing issue over the last few years, especially due to the financial scandals, where the role of auditors has sometimes been direct. In compliance with the regulatory authorities of accounting and auditing profession, firms engage external auditor that command high level of audit fees. Lai, et al. (2020) argued that companies tend to compare the auditors to speed up the audit process especially where the audit pricing is high. Given the robust audit fees paid to auditors, there is still a high level of financial reporting lag among quoted companies in Nigeria. In the opinion of Habib, et al. (2019), corporate organizations intend to offer audit firms high fees for quick completion of audit procedures. The role of the external auditor has been deemed to be very vital as they are tasked with independently assessing a company's financial statements to ensure accuracy and compliance with accounting standards. Therefore, when auditors fail to perform their duties effectively (irrespective of the fees being charged), it compromises corporate governance, leading to potential financial misstatements, undetected risks, and ultimately, corporate collapses (Okpala, 2012) which suggest the dire need to critically examine the literature of audit pricing. Bala, et al. (2018) established that the size of the audit firm determines amount charged. However, big audit firms attract higher audit fees compared to smaller audit firms because these firms possess better resources, reputation and higher litigation risk.

Objectives of the Study

The broad objective of this study was to examine the board independence and ownership structure of audit pricing among listed non-financial firms in

Nigeria. The specific objectives were to:

1. Investigate the effect of board independence on audit pricing of listed non-financial firms in Nigeria.

2. Analyze the effect of ownership structure on audit pricing of listed non-financial firms in Nigeria.

Research Questions

1. What is the effect of board independence on audit pricing of listed non-financial firms in Nigeria?

2. To what extent does ownership structure affect audit pricing of listed non-financial firms in Nigeria?

Research Hypotheses

$H0_1$: Board independencehas no significant effect on audit pricing of listed non-financial firms in Nigeria.

$H0_{2:}$ Ownership structure has no significant effect on audit pricing of listed non-financial firms in Nigeria.

Review of Related Literature

Board Independence

Board independence is an effective element of corporate governance which helps to provide a degree of confidence that is necessary for the proper functioning of a market economy. It refers to the ability of a company's board of directors to make decisions without being influenced by management or other external parties. Farooq, et al. (2018) argued that board independence is refers to as non-executive directors sitting in the corporate board which is entrusted with monitoring function in order to protect shareholders interest against the managerial opportunistic behaviour by top management. Board independence enhance corporate performance that connotes the ability of a business to efficiently utilize the available resources to achieve targets in line with the set plans of the company, keeping in mind their relevance to the users. In the opinion of Sanyaolu, et al. (2021) maintained the independent main responsibility is to check and balance management's action towards wealth maximization for the shareholders rather than managerial interest. An independent board is essential for ensuring that the interests of shareholders and stakeholders are protected.

Berghe and Baelden (2005) examined the issue of independence as an important factor in ensuring boardeffectiveness through the monitoring and

strategic roles of the directors. The ultimate factor for the board independence is by acquiring enough numbers of the independent directors on board. They stated that the director's ability, willingness and board environment might lead to the independent attitude of each director.

Independent non- executive directors with the right skill sets, who have no business and other relationships which could interfere with the exercise of independent judgment or the ability to act in the best interest of the shareholders, are viewed to be in a better position to monitor management than inside directors. Ibadin, et al. (2012) added that proportion of independent non-executive directors with the correct arrangement of skills, which have no business that could meddle with the activity of an independent decision, are seen to more likely check the activities of the managers than internal directors.

Ownership Structure

The issue of managerial ownership has remained a major pillar in the implementation of best practice corporate governance (Addae-Boateng, et al., 2015). Ownership structure is the rudiment principle of corporate governance for minimizing the conflicting of interests between controlling shareholders and minority shareholders in order to influence auditor pricing (Abdullah, et al., 2018). Ishaka, et al. (2023) affirmed that ownership structure may be concentrated when there is high percentage of shares by majority shareholders held in a firm. Ownership is always regarded as the corporate owners, while directors are agents or representatives of shareholders who are supposed to allocate business resources in a way to increase their wealth. Ownership structure of the firms that are traded in the capital market is complex and challenging based on the facts that companies are always changing their ownership from one majority shareholder to another.

Anwar (2019) posited that ownership structure is the distribution of ownership within firm's stakeholders to reduce agency problem for the ability and incentives to control the management. This problem is even more conflicted when some of the stakeholders of the company are also managers of the company. Ownership structure is the strategic decisions taken by investors who own or who would own shares and measure ownership structure as the combination of board ownership, institutional ownership, and foreign ownership. However, ownership structure will be proxied by institutional ownership in this study. Institutional ownership as an equity holding entitle to investment firms, banks, insurance companies, and other institutional entities from a proportion of stock held by institutional investors.Aryani, et al. (2023) defined institutional ownership as a form of ownership structure which is fully concentrated and has the tendency of

feeding the management favorable incentives in order to maximize the value of the firm by bridging the gap between management and shareholders' interests. Maqbool, et al. (2021) added that majority of the institutional investors are skewed to deposit money banks.

According to Orumo (2018), institutional ownership is the proportion of shares held by institutional ownership to total number of shares issued by a firm at given period of time. This denotes the sum of money and invested in corporate firm in terms of securities, real property and other investment assets. Institutional ownership has the opportunity, resources, and ability to monitor, discipline, and influence managers to deliver the performance that would be beneficial to both the large and small investors. Okere, et al. (2018) opined that institutional investor in distributing their funds take rational decisions because of the power of portfolios commanded in the firm. They normally participate in board meeting thereby influence board decisions through the active roles of ownership display in the firm, and the power to monitor and discipline management is outside their reach. The concentration of ownership to institutional investors is the basis for reducing agency problem through effective monitoring of managerial activities. Ma (2019) asserted that institutional ownership carries out strong monitoring mechanism in the growth of the firm in terms of earnings in order to maximize their wealth.The relationship between ownership structure and the performance of firms is an important and continued subject in the field of financial management for analyzing this relationship, up till now different aspects of ownership structure are considered, for instance being insider or non-insider shareholders, shareholders concentration or dispersion, being whole or retail, being internal (domestic) or being foreign shareholders, being institutional or individual shareholders (Amoako-Tuffour, et al., 2022). The stakeholder commits financial resources to the managers to drive the performance of the firm through proactive strategies in implementing policies that can maximise their interests (Alregab, 2021).

Audit Pricing

Audit pricing is defined as the sums payable to the auditor, for carrying out audit services offered to the client (company) (Akrawah & Akhor, 2016). Ohidoa and Okun (2018) also see audit pricing as the amount of fees received by an auditor for carrying out an audit assignment on the accounts of the client firm. The size of audit fee is a major explanatory factor for the ability of the auditor to resist the pressure of management to issue misleading report, regardless of the provision of advisory services. Urhoghide and Izedonmi (2015) defined audit pricing as the payments made directly to the auditor based on the audit function. In the opinion of Soltani (2007), audit pricing is the cost associated with companies that perceived to experience weak internal

control process.

In the opinion of Okoli (2021), audit pricing is the memorandum of determining auditor's remuneration. Audit pricing is the amount of money paid to audit firm by the client firms for the services rendered. The audit pricing is the sum payable/paid to the auditor, for carrying out audit services offered to the auditing company (client). The price of audit is the amount of money the client pays to external auditor for auditing the financial statements of the company (Urhoghide & Izedonmi, 2015).

The company may change services of the audit firm for the purpose of reducing audit fee competition (Oladipupo & Emina, 2016). Therefore, large fees paid to auditors, particularly those that are related to NAS (Non audit services) make auditors more economically dependent on their clients. Such financial reliance may induce a relationship whereby the auditor becomes reluctant to make appropriate inquires during the audit process for fear of losing highly profitable fees. Akhor, et al., (2018) posited that audit related litigation risk is primarily determined by the features of the audit engagement. Audit pricing simply refers to payments made to the auditor during the course of carrying out the audit function and non-audit fee is the payments for other non-audit services carried out by the auditor which may not be part of the audit engagement negotiation. Audit fees refer to the money paid to the auditors for their professional services deteremined by the complexity of the services provided and the level of expertise required to carry out the services of proficiency level, the cost structure of the firm concerned and other professional considerations (Sukrisno Agoes, 2012). The pricing of an audit depends on various factors, including: type and complexity of the audit, size and industry of the organization, location and geographical scope, auditor's expertise and qualifications, time and resources required, level of risk involved, regulatory requirements, competition and market rates.

Theoretical Framework

Resource Dependency Theory

Resource dependency theory, introduced by Pfeffer and Salancik (1978), serves as a foundational theoretical framework for understanding the influence of external resources on organizational behavior, including how such dependencies shape strategic decision-making and outcomes. The theory posits that organizations are not self-sufficient; rather, they rely on external entities for critical resources, which creates dependency relationships that can significantly influence organizational policies and practices. Resource dependency theory assumes that the extent of dependency is determined by factors such as the importance of the resource (Hessels & Terjesen, 2010), the

degree of control exerted by the resource provider, and the availability of alternatives. In the context of institutional ownership and audit pricing, resource dependency theory provides a robust space through which to examine the power dynamics and resource dependencies between firms and their institutional shareholders. Institutional owners often wield considerable influence over governance practices due to their significant financial stakes, thereby impacting audit-related decisions, including pricing. The theory aligns with this investigation as it highlights the linkage between resource providers (institutional owners) and resource-dependent entities (firms) in shaping audit pricing as a governance mechanism. The theoretical alignment is further reinforced by empirical and theoretical contributions of Hillman, Withers, and Collins (2009), who extended resource dependence theory to elucidate how firms manage dependencies by employing strategies such as board composition. As resource dependency theory underscores the influence of external pressures on organizational behavior, its application to the study of audit pricing determinants offers clearer insights into how firms navigate institutional demands to secure legitimacy and operational efficiency, making it another compelling theoretical choice.

Empirical Review

Hobaishi, et al. (2024) did a study on the impact of certain fundamental characteristics of audit firms and their clients on the application of the business risk audit approach based on audit fees determination in Yemen. A descriptive research design was employed to administered structure questionnaires to 60 auditors' sample from 42 audit firms and 8 individual offices and analysed using descriptive statistics and OLS regression technique. The findings revealed the audit firm size exhibit a significant impact on business risk audit approach based on audit fees determination.

Indriasih et al. (2023) examine the relationship between audit complexity, company size, audit risk,company risk and audit fee in Indonesia. Ex-post facto research design was used to sample 16 companies of trading, serviceand investment listed on the Indonesia Stock Exchange for the period of 2017 to 2021 through purposive sampling technique.The descriptive statistics and multiple regressions used in the analysis of data. The results showed that audit complexity and audit risk had a significant negative relationship with audit fee whileauditee size had a significant positive relationship with audit fee.

Munisi (2023) carried out empirical study in Sub-Saharan Africa countries to examine the relationship between ownership structure and audit fees. The study made use of panel research design to sample 106 non-financial firms with 531 observations for the period of 2005 to 2009. The results showed that

foreign ownership exert a positive and significant relationship with audit fees while managerial ownership and concentrated ownership exert a negative significant relationship with audit fees.

Kaloja, et al. (2022) conducted a study on the influence of audit fees in Nigerian banking industry. The aim of the study is to examine the influence of board size, board independence, bank size, leverage, profitability, audit tenure and joint audit on audit fee. They made use of ex-post facto research to sample 10 deposit money banks for the period of 2006 to 2020 and pooled ordinary least squares regression to analyse the data. They found out that company size, board independence and leverage has a significant positive influence on audit fees while joint audit has a negative significant influence on audit fees. Also, profitability, audit tenure and board size has no significant influence on audit fees.

Lawal and Ibrahim (2022) conducted a study on the determinants of audit fees among listed insurance companies in Nigeria. The study made use of correlational research design to sample 26 listed insurance companies covering the period of 2011 to 2020 through judgmental sampling technique. The data were analysed using random effect Generalized Least Square (GLS) regression technique. The results showed that audit firm size and client size has a significant effect on audit fees while client profitability, client complexity, client underwriting risk, and client liquidity risk has no significant negative effect on audit fees.

Yahaya, et al. (2022) examined the relationship between audit fee, independence and audit quality in Nigeria. The study made use of correlational research design to sample of 12 quoted industrial goods firms for the period of 2006 to 2020 and analysed using descriptive statistics, pairwise correlation and binary regression technique. We provide the first evidence on the effect of audit fees on audit quality. The results showed that there is a significant relationship between audit independence, audit fees and audit quality. The control variable, leverage and firm size is negative and significantly related with audit fees and audit quality.

Orji and Nwaeze (2022) conducted a study on the relationship between audit fee and financial performance in Nigeria. The study made use of ex-post facto research design to sample 10 deposit money banks in Nigeria for the periods of 2014 to 2020 and Generalized Method of Moments (GMM) Model was use to analyse the data. The empirical findings revealed that audit fee exert a significant positive relationship with financial performance while firm size and leverage exert significant negative relationship with financial performance.

Arumona and Nev (2021) did a study in Nigeria on the effect of audit fees on financial performance of quoted consumer good firms. The study made use of ex-post facto research design to sample 20 listed firms for the period of 2014 to 2019 while descriptive statistics, correlation matrix and panel data estimation were used in the analysis of data. They established that audit fees had significant positive effect of financial performance measured by ROA. This means that the higher the audit fees the higher the performance of the firms.

Okoli (2021) examined the effect of corporate governance on audit pricing in Nigeria. The aim of the study is to examine the effect of profitability, firm size and firm complexity on audit pricing. The study used longitudinal research design to sample of thirty (35) listed manufacturing companies in NGX for the period of 2010 to 2017 through simple random sampling technique and analyzed using Pearson correlation, the Breusch-pagan-Godfrey test for heteroscedasticity, the Lagrange Multiplier (LM) test, Ramsey RESET and multiple regressions. The result showed that firm profitability and firm complexity has a significant effect on audit pricing while firm size has no significant effect on audit pricing. This indicates that firm profitability and complexity were the determinants of auditor pricing in Nigeria.

Sanyaolu, et al. (2021) carried out study on the effect of corporate board of directors' attributes on audit fees in Nigeria. They made use of ex post facto research design to sample 10 Nigerian listed Deposit Money Banks (DBMS) for the period of 2012 to 2018 through purposive sampling technique. The data were analyzed using descriptive statistics, correlation analysis and Generalized Method. The empirical results showed that firm profitability and firm size exert a significant effect on audit fee while board independence, board size and board meetings exert no are significant effect on audit fee.

Onatuyeh and Ukolobi (2020) conducted a study on the relationship between tax aggressiveness, corporate governance and audit fees in Nigeria. The aim of the study is to examine the relationship between board gender diversity, audit committee diligence board independence and audit fees. Secondary data were gathered from a sample of 107 firms for the period of 2009 to 2018 while the descriptive statistics, correlation analysis and panel regression technique to analyze the data. The findings revealed that board independence, cash tax rate and audit committee diligence has a significant positive effect on audit fees while board gender diversity has no significant effect on audit fees.

In the same vein, in Nigeria, Ugwu, et al. (2020) carried out an empirical study on the impact of audit quality on financial performance. The aim of the study was to examine the impact of audit firm size, joint audit and audit fees

on FP proxied by ROA. They used ex-post facto research design to sample 15 Deposit Money Banks (DMBs) in Nigeria Exchange Group for the period of 2011 to 2017 while descriptive statistics, correlation matrix and multiple regression technique were adopted in the analysis of data. The result shows that audit fees has no significant impact on financial performance.

Ayoola, et al. (2019) conducted a study on the effect of audit market concentration on audit fees in Nigeria. Panel data were collected from a sample of 16 of 16 listed Deposit money banks for the period of 2006 to 2017 while descriptive statistics, correlation analysis and panel regression model. The results showed that leverage and audit market concentration exert no significant effect on audit fees.

Eniola, and Ajayi (2018) conducted study in Nigeria on the factors determining the choice of an auditor. The study made use of longitudinal research design to sample the 35 manufacturing companies for the period of 2010 to 2016 through simple random sampling technique. The results reveal that audit fees had a significant positive effect on auditor choice proxied by big-4 audit firm at 5% level.

Ohidoa and Omokkhudu(2018) conducted a study in Nigeria on the effect of firms' characteristic on audit fees. Secondary data collected was analyzed using panel least square regression. The findings revealed that firm profitability has no significant effect on audit fees while auditor type, firm size, client complexity, client's firm risk and audit committee independence has a significant effect on audit fees.

Apadore and Letchumanan (2016) examined the impact of determinants of audit fees among listed manufacturing companies in Nigeria. The aim of the study is to investigate the influence of firm profitability, corporate size, complexity, status of audit firm and audit client's risk on audit fees. The ex-post facto research design to sample 15 companies and analyzed using multiple regressions technique. The findings revealed that firm profitability, corporate size, status of audit firm exert a significant influence on audit fees while complexity and client risk exert no significant influence on audit fees.

Elkana (2016) investigated that the determinants of audit fees of listed firms in Nigeria. The aim of the study is to investigate the influence of auditor experience, auditor reputation, Big 4 status, client size, client complexity, reporting time lag, reporting season, client profitability, auditor size and client risk on audit fees. Secondary data through ex-post facto research design and analyzed using multiple regressions technique. The results showed that client complexity, auditor experience, auditor reputation, Big 4 status, client size, and the reporting time lag exert significant influence on audit fees while

reporting season, client profitability and auditor size exert no significant influence on audit fees.

Methodology

Research Design

The *Ex post facto* research design was employed in this study. Since it probes and utilizes existing data that were collected after the event or phenomenon under investigation has taken place. The nature of this study necessitated the use of secondary data. The data for the selected quoted firms were sourced from the Nigerian Exchange Fact Book and the company's annual financial reports and accounts.

Population and Sample

It consists of all one-hundred and nine (109) non-financial companies quoted on the floor of the Nigeria Exchange Group as of 31st December, 2023. This study employed purposive non-probability sampling technique by selecting seventy-seven (77) firms that met specific criteria, including consistent financial statement information release and complete availability of information relevant for this study.

Description of Variable and Measurement

Dependent **a**nd independent variables are identified in the study. Dependent variable which is audit pricing is measured by the natural logarithm value of audit fees. The independent variables are board independence which is measured as percentage of the ratio of non-executive director to total board size; as well as ownership structure which is measured percentage as the proportion of shares held by institutional investors to the total number of shares issued.

Table 3.1 Operationalization of Variables

SN	Variables	Definition	Measurement	Sources	Apriori sign
1	AUDP	Audit pricing (Dependent variable)	Computed as the natural logarithm value of audit fees	Egiyi (2022); Yahaya, et al. (2022)	
2	BDI	Board Independence (Independent variable)	Computedin percentage as the ratio of non-executive director to total board size	Akrawah, et al (2020); Yahaya, et al. (2022)	-
3	OWS	Ownership Structure (Independent variable)	Computedin percentage as the proportion of shares held by institutional investors to the total number of shares issued.	Buertey & Pae, (2020)	-

Source: Researcher's Compilation (2024)

Model Specification

The model for this study was adapted from the similar regression model of

Ohidoa and Omokkhudu(2018). The model was modified to suit the objectives of this study. The model is specified as:

$$AUDFEE_{it} = \alpha_0 + \alpha_1 AUDTYPE_{it} + \alpha_2 CLFIRMSIZE_{it} + \alpha_3 CLFIRMPAT_{it} + \alpha_4 CLFIRMRSK_{it} + \alpha_5 CLFIRMCOMP_{it} + \alpha_6 AUDCOMIND_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots$$

However, the functional form of the determinants of audit pricing is expressed in econometric form as:

$$AUDP_{it} = \alpha_0 + \alpha_1 BDI_{it} + \alpha_2 OWS_{it} + e_t \ldots\ldots\ldots\ldots\ldots$$

Where;
AUDP = Audit Pricing

BDI = Board Independence

OWS = Ownership Structure

α_0 = Constant
α_1 - α_6 =Coefficients
e_t = Error term

Descriptive Statistics Analysis

Using descriptive statistics analysis, each variable is examined based on its mean, standard deviation, maximum and minimum values. Table 4.1 displays the results obtained from the descriptive statistics analysis.

The descriptive statistics from data of non-financial firms listed on the Nigerian Exchange Group (NGX) over the 2014 to 2023 period reveal valuable insights into the financial and corporate governance characteristics of firms across various sectors as presented in table 4.1. In this study, Audit pricing (AUDP) show a mean value of 4.077, indicating a relatively moderate level of audit fees across the firms, with a standard deviation of 0.627 suggesting that audit fees pricing is somewhat consistent across the sample firms. The maximum value of 5.843 shows that some firms pay significantly higher fees, potentially reflecting the larger or more complex nature of their operations, while the minimum of 2.301 suggests that some other firms incur lower costs. The outcome is consistent with previous studies of McMeeking, Peasnell, and Pope, (2007) who documented that audit pricing tends to be higher in firms with larger asset bases and more complex operations, a characteristic common in sectors such as conglomerates and oil and gas.

Descriptive Statistics Result

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
AUDP	758	4.077417	.6275753	2.301	5.843
BDI	758	69.72274	13.49929	16.67	100
OWS	758	47.08179	27.37573	0	98

Source: Authors' Computation (2024)

Data Normality Test

The results of the Shapiro-Wilk normality test provide insights into the distribution of the variables under consideration as presented in table 4.2. Audit Pricing (AUDP), yielded a z-value of 4.102 with a corresponding p-value of 0.00002 indicating that the data for audit pricing deviates significantly from a normal distribution. Given that the p-value is less than the typical significance level of 0.05, it suggests that audit pricing is not normally distributed, which might reflect sector-specific variations in audit fees across non-financial firms. Lack of normality could be due to the wide variation in audit pricing across sectors, such as oil and gas versus consumer goods, where audit complexity and fee structures differ significantly (Usman, Gyar & Ado 2024).

Table 4.2 Data Normality Test Result

Variable	Obs	W	V	z	Prob>z
AUDP	758	0.98910	5.342	4.102	0.00002
BDI	758	0.97688	11.333	5.943	0.00000
OWS	758	0.96322	18.029	7.080	0.00000

Source: Authors' Computation (2024)

The Shapiro-Wilk test outcomes indicate that the data for the variables are not normally distributed. This suggests that the underlying economic conditions and sector-specific factors driving these firms' financial and operational performance are highly varied, leading to skewed distributions.

Correlation Analysis

The Spearman rank correlation analysis displayed in table 4.3, reveals several notable associations between the variables in the context of non-financial firms in Nigeria.

Table 4.3 Correlation Analysis Result

	AUDP	BDI	OWS
AUDP	1.0000		
BDI	0.0603	1.0000	
OWS	0.4116	0.1945	1.0000

Source: Authors' Computation (2024)

Board Independence (BDI) shows weak associations with other variables, such as a small positive association with audit pricing (0.0603). Ownership structure(OWS) also shows a moderate negative association with a correlation of -0.3641 which suggests that firms with higher ownership structure may be

associated with lower operating risks, as institutional investors often demand better corporate governance and risk management practices (Hutchinson, Seamer & Chapple, 2015; Zhang, 2016).The Spearman correlation analysis reveals key associations between variables.

Regression Analysis

Specifically, to examine the effect of the independent variables on the dependent variable, panel data estimations to include fixed and random effects analysis were deployed while Hausman specification test was used to determine the most appropriate of both models. It is worthy to note that the fixed effect model which was determined by the Hausman Specification test statistics was diagnosed for group level heteroscedasticity using Modified Wald test for groupwise heteroskedasticity which assesses whether the variance of the residuals is constant across all firms in the fixed-effects model. The existence of heteroskedasticity can affect the efficiency of the model's estimators and lead to biased standard errors (Kaufman, 2013), thus necessitating corrective measures, such as the inclusion of dummy variables, to ensure accurate inference. The rejection of homoskedasticity is common in panel data analysis, particularly when dealing with firms from diverse sectors, where differences in operational scale and financial structure can lead to varying error variances (Wooldridge, 2019). Further, the absence of multicollinearity in the specified model was established, and the results are presented in Table 4.4.

	Pooled OLS Model	**Fixed Effect Model**	**Random Effect Model**	**Least Square Dummy Variable Model**
BDI	**0.001**	**-0.0003**	**-0.0004**	**-0.0003**
	(0.125)	**(0.535)**	**(0.468)**	**(0.665)**
OWS	**0.001**	**0.0008**	**0.001**	**0.001**
	(0.001) **	**(0.154)**	**(0.030) ****	**(0.032) ****
_CONS	-0.649	1.049	0.236	0.264
	(0.000) ***	(0.000) ***	(0.202)	(0.179)
F-stat/Wald Stat	399.34	21.10	473.48	486.00
	(0.000) ***	(0.000) ***	(0.0000) ***	(0.0000) ***
R- Squared	0.7923	0.1834	0.1822	0.1913
VIF Test	1.12			
Hausman Test	28.22	Test for Random Effects Error	1665.38 (0.0000) ***	Heteroskedasticity (fixed effect)
Prob>chi2	(0.0002)	Test for Fixed Effects Error	29.56 (0.0000) ***	model 72308.88 (0.0000)

Note: (1) bracket () are p-values; (2) *, **, *, implies statistical significance at 10%, 5% and 1% levels respectively**

Audit Pricing Regression Analysis Result

As displayed in table 4.4, the fixed-effects regression model presents an R-squared (Within) value of 0.1834, indicating that approximately 18.34% of the variation in the dependent variable, within individual groups (firms), is explained by the independent variables in the model. This relatively mild within-group R-squared value suggests that while the model captures some of

the within-firm variability over time, a portion of the variation remains unexplained by the included factors. The F-statistic of 21.10, with a Prob > F value of 0.0000, highlights that the overall model is statistically significant. This means that the independent variables, taken together, are significantly associated with the dependent variable, rejecting the null hypothesis that all coefficients are not equal to zero. The very low p-value (0.0000) further strengthens this conclusion, indicating that the model's independent variables contribute to explaining the variance in the dependent variable beyond random chance. The high significance of the F-statistic suggests that, despite the relatively modest within-group R-squared value, the model effectively captures the influence of the included predictors.

The Hausman specification test examines whether the random-effects model or the fixed-effects model is more appropriate by testing if the difference in coefficients is systematic. With a chi-squared value of 28.22 and a Prob > chi2 of 0.0002, the null hypothesis that the difference in coefficients is not systematic is rejected at the conventional significance levels. This result implies that the fixed-effects model is more appropriate, as the random-effects model's assumption that the unobserved effects are uncorrelated with the independent variables does not hold.

In the random-effects generalized least squares (GLS) regression model, the Within R-squared value of 0.1822 indicates that approximately 18.22% of the variation in the dependent variable within individual firms (i.e., across time for the same firm) is explained by the independent variables in the model. While this value is relatively modest, it still suggests that the model captures a portion of the variation that occurs within firms over time. The Wald chi-squared statistic of 473.48 tests the null hypothesis that all the regression coefficients of the independent variables are jointly equal to zero. The associated Prob > chi2 value of 0.0000 indicates that this hypothesis is rejected at the conventional significance level ($p < 0.05$), meaning the model as a whole is statistically significant, and at least one of the independent variables is significantly associated with the dependent variable. Further, in testing for random effect error, the Breusch and Pagan Lagrangian multiplier test for random effects evaluates whether the variance of the unobserved firm-specific effects is significantly different from zero. The $chibar^2(01)$ value of 1665.38, with a Prob > $chibar^2$ of 0.0000, indicates that the null hypothesis (that there are no random effects) is strongly rejected. This result confirms that the random-effects model is appropriate, as the unobserved firm-specific effects are significant and must be accounted for in the model.

In the context of this study, the Panel Least Square Dummy Variable model is employed to address the heteroskedasticity identified in the fixed-effects model. By incorporating firm-specific dummy variables, this model controls for firm-level differences that might cause variations in residuals, thereby improving the reliability of the estimated coefficients. This method provides a more accurate estimation of the relationship between the dependent and independent variables by accounting for unobserved factors unique to each firm, such as management practices or sector-specific dynamics.

Discussion of Result

In the context of Instituitional Ownership (OWS), the positive association with audit pricing can be understood through the lens of Stakeholder Theory. Institutional investors, typically owning significant shares in a firm, are keen on safeguarding their investments by demanding high-quality and transparent audits. Their influence on corporate governance practices often translates into an insistence on more rigorous and comprehensive audits to mitigate financial risk. For Nigerian non-financial firms, institutional ownership is critical because these investors often push for stronger governance frameworks, especially in sectors like ICT, consumer goods, and industrial goods, where firm performance and transparency are closely monitored. As institutional investors like pension funds and mutual funds become more prominent in Nigeria's capital market, their role in influencing audit pricing grows stronger. This result is consistent with earlier studies, such as that of Olusola, (2024) who found that firms with greater institutional ownership paid higher audit fees due to the enhanced audit scope and risk assessments required to satisfy these investors. The Nigerian non-financial sector, with their diverse operations and governance structures, provide fertile ground for institutional investors to push for more extensive audits, as they often demand greater accountability and transparency in firms, they invest in.

Lastly, the effect of institutional ownership on audit pricing also relates to the Resource Dependency Theory, which posits that firms seek to manage external dependencies by aligning with key stakeholders. In this case, institutional owners are external stakeholders who bring in financial resources but demand high levels of corporate accountability. Their influence on the audit process is substantial because they seek to ensure that their investments are protected from mismanagement or fraud, often advocating for robust internal controls and extensive financial scrutiny. For Nigerian non-financial firms, this is particularly relevant in sectors where financial transparency and

governance are seen as indicators of firm value, which institutional investors closely monitor. The increased audit fees associated with institutional ownership, as found in this study, are reflective of the need for more in-depth audits to meet stakeholders' expectations. Okolie (2014) confirm similar trends in Nigeria, where institutional ownership significantly influences corporate governance practices, leading to higher audit fees as firms seek to align with the stringent requirements of powerful shareholders. Such dynamics, especially in a growing economy like Nigeria's, where governance frameworks are still evolving, highlights the critical role of institutional investors in shaping audit pricing and the overall financial accountability of non-financial firms.

Summary

The summary of findings obtained in this study are as follows;

1. Board independence has non-significant effect on audit pricing among listed non-financial firms in Nigeria during the period under study.
2. Ownership structure has a significant positive effect on audit pricing among listed non-financial firms in Nigeria during the period of concern.

Conclusion

The results from the panel least square dummy variable regression analysis highlight the deep intertwine between the variables and audit pricing. Collectively, the findings underscore the multifaceted nature of audit pricing in non-financial firms, particularly in the Nigerian context. The findings provide a more inclusive understanding of the audit pricing landscape, emphasizing the need to account for sectorial differences when analyzing audit fees in Nigeria. This sectorial focus adds depth to the literature, showing that audit pricing determinants are not uniform and must be contextualized according to the unique operational challenges and risks of different industries. The positive association of factors like ownership structure with audit fees suggests that certain governance structures can drive demand for more rigorous audits, reflecting the increased oversight expectations of stakeholders. Overall, this study demonstrates that audit pricing is not influenced by the firm's financial performance but by the broader governance and operational context in which firms operate, contributing to a deeper understanding of how audit fees are determined in practice. The study contributed to knowledge by integrating these variables as the study provides a more holistic view of the factors influencing audit fees, underscoring the

importance of governance in shaping audit pricing decisions.

Recommendations

On the lack of a statistically significant effect of board independence on audit pricing, stakeholders should exercise caution in implementing policies that prioritize increasing board independence solely as a means to influence audit fees. While enhancing board independence is generally regarded as good corporate governance practice, this particular analysis suggests that it may not have a direct, meaningful impact on audit pricing. In sum, while board independence remains important for overall governance health, it should not be relied upon in isolation as a key determinant for reducing or managing audit fees.

To address the issue of rising audit fees in the non-financial sector, particularly in firms with high ownership structure, stakeholders should implement stronger internal control systems and corporate governance frameworks. By improving these internal mechanisms, firms can reduce the reliance on extensive external audits, which are often demanded by institutional investors to ensure transparency and compliance. Additionally, regulators should encourage the adoption of risk-based audit approaches that focus on key risk areas rather than exhaustive audits, which could lead to reduced audit costs without compromising the quality of financial reporting. Firms could also consider negotiating long-term audit contracts with audit firms, which may help stabilize and potentially lower audit fees over time. Finally, fostering transparent communication between institutional investors and management regarding the scope of audits can help align expectations and avoid unnecessary increases in audit complexity and costs.

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