

Effect of Firms' Attributes on Audit Fees of Financial Service Firms in Nigeria

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doi: <https://doi.org/10.37745/ejaaf.2013/vol13n2126>

Published January 25, 2025

Citation: Akininnyi P.E., Umoren A.O. and Ibok N.I. (2025) Effect of Firms' Attributes on Audit Fees of Financial Service Firms in Nigeria, *European Journal of Accounting, Auditing and Finance Research*, Vol.13, No. 2, pp.,1-26

Abstract: *The increasing disparity in audit fees, which represent significant expenses for financial service firms, with rising skepticism regarding the value and quality of audits, underscores the need to examine the effect of firm-specific attributes on audit fees. This study investigates how firm size, board size, firm profitability, and firm leverage influence audit fees among financial service firms in Nigeria. Secondary data were collected from a purposive sample of 15 firms listed on the Nigerian Exchange Group over the 2013–2023 period, comprising 165 firm-year observations. Utilizing descriptive statistics, correlation analysis, the Levin et al., unit root test for data stationarity, and a Panel Least Square Regression Model, the study found that firm size and profitability positively and significantly affect audit fees, while board size and leverage do not have a significant effect. These results suggest that larger and more profitable firms encounter greater audit complexity. The study recommends that managers of large and profitable firms enhance internal controls and risk management practices to maintain audit quality with sustainable fee levels. Additionally, policymakers can use these insights to refine governance guidelines within Nigeria's financial services sector. These findings add to the scarce empirical research on audit fee determinants in Nigeria and provide actionable insights for managers, auditors, and policymakers*

Keywords: audit fees, firms' attributes, Nigerian financial services, agency and growth of the fitters' theories

INTRODUCTION

High-quality financial reporting is a cornerstone of contemporary accounting, with public accountants playing a pivotal role in ensuring stakeholders, including investors,

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creditors, and regulators; have access to reliable and accurate audited reports. These reports provide crucial indicators such as profitability, liquidity, and financial stability, enabling informed decisions on resource allocation, investment, credit evaluation, and tax management (IASB, 2018; Rahmatika & Afiah, 2014). Trust in financial markets depends heavily on transparent and dependable representations of a firm's financial position, reinforcing the role of audits in fostering accountability and market confidence.

Audit fees, which represent the remuneration paid to auditors for their services, are a critical component of corporate financial management. They reflect the scope, complexity, and perceived risk of audit engagements, especially in the highly regulated financial services sector like Nigeria. Institutions such as banks, insurance companies, and mortgage firms play vital economic roles by allocating capital, managing risks, and driving growth, making transparency and thorough auditing essential to their operations (Arens et al., 2012). However, while higher audit fees can enhance audit quality by allocating more resources to rigorous reviews, they also raise concerns about auditor independence, as seen in cases like the Enron scandal (Schilit & Perler, 2010; Penland, 2000). Thus, determining audit fees that balance quality and independence remains a pressing challenge.

The determinants of audit fees, including firm size, board structure, profitability, and risk profiles, significantly shape the scope and complexity of audits (Kikhia, 2015; kajola, 2021; Simunic, 1980). Larger boards often require more extensive oversight, while factors like board independence and expertise can mitigate information asymmetry and reduce audit demands (Martinez & Moraes, 2024; Izzani & Khafid, 2022). Additionally, systemic issues in the financial services sector, such as non-performing loans, liquidity constraints, and capital adequacy concerns, necessitate greater audit effort and costs (Abubakar, 2013). Regulatory reforms in Nigeria, led by the Central Bank of Nigeria (CBN) and the Nigerian Exchange Group, have amplified scrutiny of this sector, characterized by large firm sizes, complex operations, and diverse risk profiles. Despite the systemic importance of the sector, limited empirical research exists on how firm attributes causally influence audit fees in Nigerian financial service firms (Kajola et al., 2022; Olutokunbo et al., 2020; Fields et al., 2004).

Statement of the Problem

The wide variability in audit fees among financial service firms underscores the need to understand the factors driving these disparities. As audit fees represent a significant expense, determining the key drivers of these costs is essential, especially in sub-Saharan Africa, where skepticism surrounds audit pricing due to its intangible nature and wide fee disparities across sectors (El-Gammal, 2012). Nigerian financial service firms, characterized by complex operations, extensive branch networks, large boards, and substantial profits, are among those with the highest audit fees (Abubakar, 2013). Despite engaging "Big Four" audit firms reputed for higher quality audits (El-Gammal & Gharzeddine, 2020), financial distress and failures within the sector persist, raising

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concerns about the effectiveness of audits and the value derived from the high fees paid
(Kajola et al., 2022; Olutokunbo, 2020).

In addition to distress, firms face challenges such as high underwriting risks, strict regulatory compliance, liquidity constraints, operational risks, and non-performing loans, all of which demand greater audit effort and cost (Abubakar, 2013; Apadore & Letchumanan, 2016). These challenges have fueled debates about the justification and quality of audit fees in the sector. Given these concerns, this study investigates how firm attributes, specifically firm size, board size, firm profitability, and firm leverage; affect audit fees of financial service firms in Nigeria. The findings aim to contribute empirical evidence to the discourse on audit pricing and quality, providing insights for corporate governance, regulatory policies, and future audit practices.

Objectives of the study

The main objective of this study is to determine the effect of firm attributes on audit fees of financial service firms in Nigeria. Specifically, the study seeks to:

1. Ascertain the effect of firm size on the audit fees of financial service firms in Nigeria;
2. Examine the effect of board size on the audit fees of financial service firms in Nigeria;
3. Assess the effect of firm profitability on the audit fees of financial service firms in Nigeria.
4. Evaluate the effect of firm leverage on the audit fees of financial service firms in Nigeria.

Hypotheses of the Study

The following null hypotheses was formulated to address the research questions in the study:

H₀₁: Firm size does not significantly affect audit fees of financial service firms in Nigeria.

H₀₂: Board size does not significantly affect audit fees of financial service firms in Nigeria.

H₀₃: Firm profitability does not significantly affect audit fees of financial service firms in Nigeria.

H₀₄: Firm leverage does not significantly affect audit fees of financial service firms in Nigeria.

Scope of the Study

This study investigates the effect of firm attributes on audit fees among financial service firms listed on the Nigeria Exchange Group from 2013 to 2023. The independent variables are firm size, board size, firm leverage, and firm profitability, while audit fees serve as the dependent variable. Using the Panel Least Squares Regression Model, the analysis focuses on a sample of 15 financial service firms selected from the Nigeria Exchange Group during the study period to assess how these firm-specific attributes influence audit fees.

LITERATURE REVIEW

Conceptual Review

This study examined the effect of firm-specific attributes, proxied by firm size, board size, firm profitability, and firm leverage, on audit fees (the dependent variable). The conceptual model for this research is illustrated in Figure 2.1:

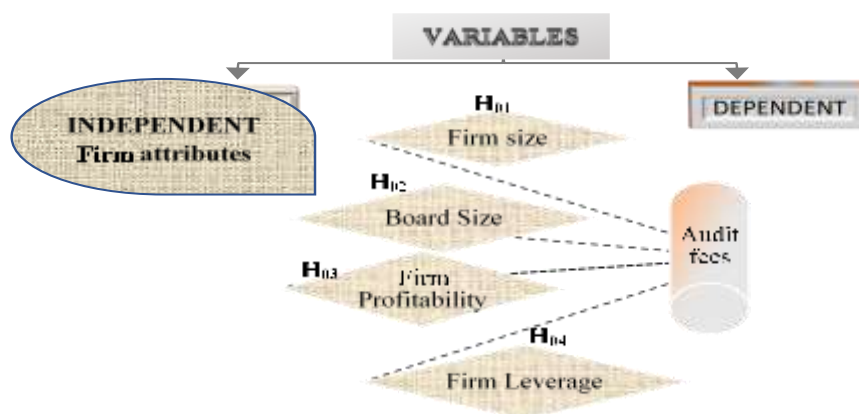


Fig 2.1: Conceptual model

Source: Author's conceptualisation (2024)

Firms' Attributes

Firm attributes are distinctive financial characteristics (e.g., asset utilization, liquidity indicators, profitability measures, leverage indicators, capital structure) and non-financial characteristics (e.g., corporate governance, operational efficiency, risk management framework, regulatory/legal framework, technological capabilities) that define a company's operations, strategic direction, and market position. These attributes shape stakeholder judgments regarding the firm's stability, growth potential, and risk level. According to Rabi (2021), firm attributes encompass variables that signal a company's performance and prospects to stakeholders, remain relatively stable over time, and affect both internal and external corporate decisions.

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Building on Simunic's (1980) foundational work on audit service pricing, extensive research has affirmed that firm-specific characteristics significantly influence audit fee determination. Key attributes such as industry classification, firm size, corporate governance practices, financial performance metrics, operational complexity, ownership structure, risk profile, and the strength of internal controls have been identified as drivers of audit costs (Santhosh & Ganesh, 2020; Apadore & Letchumanan, 2016; Urhoghide & Izedonmi, 2015). These attributes reflect not only the scale and complexity of a firm's operations but also dictate the scope of audit effort required to assess financial accuracy and compliance. In line with these studies, the selected firm attributes for this research are firm size, board size, firm leverage, and firm profitability.

Firm Size

Bennedsen and Nielsen (2010) opined, firm size, indicated by the total assets owned by a company, reflects a greater capacity for enhancing firm value and diversifying operations. Larger firms often possess multiple subsidiaries, diversified activities, and substantial asset bases, necessitating more audit hours and larger audit teams to ensure financial scrutiny and compliance with heightened regulatory standards. These factors increase audit workloads, as complexity, transaction volumes, and operational scope expand with firm size (Uwuigbe et al., 2015). Olawale et al. (2017) argue that larger firms are typically more diversified, better managed, and exhibit greater risk tolerance, while smaller firms may face challenges like information asymmetry, often resulting in poorer performance.

Audit fees consistently rise with firm size due to elevated audit risk and effort (Silva et al., 2020). Larger firms demand extensive audit procedures to address complexities and mitigate information asymmetry, leading to higher fees (Almeida & Silva, 2020). Wilson (2003) confirms this positive correlation, observing that large energy firms pay more for audits than smaller ones. Silva et al. (2020) and Almeida and Silva (2020) further highlight that higher transaction volumes and the need for detailed analysis in large corporations drive proportional increases in audit costs. Thus, firm size remains a significant determinant of audit fees across industries.

Board Size

Nguyen et al. (2016) define board size as the total number of directors, including both external and executive members, serving at a given time. Boards fulfill two key functions: monitoring the company and advising management (Kajola et al., 2022). As a corporate governance mechanism, board size significantly impacts a firm's strategic decisions and audit fee structures. Larger boards bring diverse expertise, enabling better oversight of financial reporting and risk management but may also increase audit complexity and fees due to enhanced scrutiny (Enoidem et al., 2023; Abubakar et al., 2023). However, excessively large boards can hinder decision-making efficiency, reduce accountability, and heighten firm risk. Koufopoulos et al. (2020) note that while larger boards enhance monitoring and access to resources, they may also suffer from inefficiencies, slower strategic actions, and coordination issues.

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Finding the ideal board size requires weighing the skills and expertise directors bring against the potential drawbacks of larger boards. Smaller boards promote agility and quicker decision-making but may lack diverse perspectives, while larger boards support specialized committees and workload distribution but face challenges like groupthink and logistical inefficiencies (Farnham, 2022; Babs, 2023). Stephen (2024) emphasizes that there is no universal consensus on optimal board size, as it depends on factors such as the firm's developmental stage and skills requirements. Farnham (2022) suggests that boards with over ten directors may face higher costs and reduced effectiveness, likening their management to "crowd control." Thus, balancing diversity, independence, and organizational needs is essential to determine the most effective board composition.

Firm Profitability

Huri and Syofyan (2019) define profitability as an entity's ability to generate profit from its operational activities within a specific period. Profitability reflects a firm's capacity to achieve both short-term and long-term objectives (Chibueze et al., 2024), with metrics such as profit for the year, return on assets (ROA), return on equity (ROE), and net profit margin being critical in determining audit fees. Nasution (2020) explains that higher profitability often results in increased audit fees, as auditors must allocate greater resources to ensure accurate and thorough financial reporting. This includes addressing heightened compliance and transparency risks associated with financially stable firms. Firms with strong earnings also attract greater regulatory scrutiny, necessitating more extensive audit procedures to verify compliance with financial reporting standards. Musah (2017) describes profitability as a primary indicator of operational efficiency, noting that profitable firms often disclose more information to showcase achievements, reduce agency costs, and justify higher management compensation. Baldacchino et al. (2014); Ubokudom et al. (2024) similarly point out that highly profitable firms incur larger audit fees due to the increased effort required to validate revenues and costs.

Alhadisa and Yusrianti (2024) observe that management in profitable firms often aims to present favourable financial reports to shareholders, prompting auditors to closely scrutinize disclosed figures. As profitability rises, the demand for more extensive audit evidence and time increases, driving up associated fees. Dekeyser et al. (2019) note that well-compensated management teams in profitable firms may seek to justify their competence through detailed disclosures, intensifying auditing requirements. Kanakriyah (2020) confirms a positive relationship between profitability and audit fees, stating that high-profit firms incur higher fees due to the extended time and effort needed to test audit evidence. Similarly, Hassan and Naser (2013) find that in non-financial firms, greater profitability correlates with higher audit fees. Joshi and Al-Bastaki (2000) further establish that higher earnings result in more rigorous testing of management assertions, leading to increased audit fees. These findings highlight profitability as a significant determinant of audit costs across various industries.

Firm Leverage

In financial services sector, especially banks and insurance companies, leverage often amplifies credit, loan, liquidity, and operational risks as it serves a dual function. It enhances a firm's ability to fund operations and expand through borrowed funds while increasing exposure to risks like credit defaults, loan non-performance, liquidity constraints, and operational vulnerabilities (Onyenwe & Glory, 2017). High leverage can increase credit and loan risks by expanding obligations to creditors, raising concerns about defaults and non-performing assets (Harvey et al., 2004). Excessive reliance on borrowing may also exacerbate liquidity risk, where unexpected cash withdrawals or refinancing challenges strain cash flow and jeopardize stability (Alves, 2021; Al-Najjar & Kilincarslan, 2019). These vulnerabilities often require rigorous audit procedures to evaluate loss provisions, regulatory compliance, and internal controls, resulting in higher audit costs (Cho et al., 2019). Equally, moderate leverage, when coupled with strict debt covenants, can serve as a governance mechanism by promoting prudent risk management and external monitoring (Grossman & Hart, 1982).

An optimal balance between debt and equity is critical for managing risk exposure and ensuring financial stability, particularly in Nigerian financial service firms. Substantial leverage often leads to increased auditor scrutiny of complex loan portfolios and off-balance-sheet items, driving higher audit fees (Griffin et al., 2010). However, excessive reliance on equity may limit growth opportunities. Jang and Park (2011) highlight that while high leverage necessitates enhanced audit vigilance and raises costs, it may also encourage stronger risk controls and transparent reporting. A well-structured capital management strategy aligning with regulatory frameworks, robust risk management, and transparency is essential for optimizing operational efficiency, sustaining growth, and enhancing stakeholder confidence. Such strategies not only balance audit costs but also position firms for long-term success

Audit Fee

Abdul-Rahman et al. (2017) define audit fees as the remuneration paid to external auditors, influenced by audit risk, task complexity, and client firm cost structure. Xin (2020) adds that audit fees reflect compensation for professional services, determined by the specific audit tasks performed. In Nigeria, audit fees also account for compliance with the Companies and Allied Matters Act (CAMA, 2020 as amended), varying with complexity, risk, and required expertise. Morris and Dunne (2008) note that fees correlate with time spent and service value, while Kikhia (2015) highlights that fee are negotiated before audits, factoring in time, service scope, and staff requirements (Willy, 2016; IAPI, 2016, as cited by Mulyadi & Narsa, 2020). Abubakar et al. (2023) emphasize that audit fees are dynamic, changing with assignment complexity and cost structures.

From a financial reporting standpoint, audit fees are shaped by a firm's financial characteristics and performance (FRC, 2020; ICAN, 2020). The Financial Reporting Council Audit Regulations (2020) and ICAN guidelines stress that fees should be fair, reasonable, and aligned with audit scope and risk. Transparent practices are

Publication of the European Centre for Research Training and Development-UK recommended to prevent undercutting and ensure quality (ICAN, 2020). Legenzova and Lialkaitė (2023) assert that audit fees enhance financial transparency and market trust, with higher fees often reflecting greater audit effort and quality (Rajgopal et al., 2021). However, excessive fees may compromise auditor independence due to client ties. Key determinants include firm size, complexity, profitability, and risk (Santhosh & Ganesh, 2020), with complex corporate structures requiring additional resources (Urhoghide & Izedonmi, 2015). Profitability, size, and client risk are significant drivers of fees (El-Gammal, 2012; Apadore & Letchumanan, 2016; Akpan et al., 2024).

Theoretical Framework

The study primarily adopted two theories related to governance and auditing practice. The theories reviewed are: Agency Theory (Jensen & Meckling, 1976), and The Growth of the Fitter theory (Alchian, 1950) aligning with the main objective of the study.

Agency Theory – as opined by Jensen and Meckling (1976)

Agency theory, proposed by Ross (1973) and expanded by Jensen and Meckling (1976), examines the relationship between principals (owners) and agents (managers), highlighting conflicts of interest when agents prioritize personal goals over principals' interests. Jensen and Meckling introduced the concept of agency costs, which include monitoring expenses, bonding costs, and residual losses incurred in aligning agent actions with principal goals. This theory provides a framework for understanding audit cost variability, especially in firms with high agency conflicts. Larger or complex firms incur higher agency costs, necessitating independent audits to monitor agent behaviour and protect shareholder interests. For example, in Nigerian financial service firms, larger boards and intricate structures demand rigorous audits to mitigate agency risks and ensure financial transparency, explaining the higher audit fees in such scenarios.

The Growth of the Fitter Theory – Armen Albert Alchian (1950)

Alchian's Growth of the Fitter Theory (1950) links firm profitability and performance to market survival, asserting that profitable and adaptable firms are better positioned for long-term success. Profitability signals efficient resource allocation and competitive strength, enabling firms to invest in governance mechanisms like robust audits. Non-profitable firms, conversely, face challenges in maintaining standards, often risking market exit. The theory explains why profitable firms incur higher audit fees due to their operational complexity and larger asset bases, requiring comprehensive audits to ensure accurate reporting and compliance. Additionally, profitable firms view audit fees as an investment to signal governance quality and financial health, reinforcing the link between profitability and audit pricing. This theory aligns with research on firm attributes like profitability and leverage in influencing audit fees.

2.3 Empirical Review

Akosu et al. (2024) analyzed the determinants of audit fees for listed manufacturing companies in Nigeria, using data from 30 firms out of 48 listed on the Nigeria Exchange Group between 2018 and 2022. Factors such as client size, client complexity, audit firm size, audit tenure, and profitability were examined through linear regression and

Publication of the European Centre for Research Training and Development-UK correlation analysis. The findings revealed that client size significantly influences audit fees, while other variables did not exhibit a meaningful impact. Similarly, Andika et al. (2024), studying 88 consumer goods manufacturing firms listed on the Indonesia Stock Exchange during 2019–2022, found a positive and significant relationship between firm size (measured by total assets) and audit fees. In contrast, audit complexity, despite having a positive association with fees, lacked statistical significance. These results suggest that larger firms incur higher audit fees due to their scale and associated auditing demands, while audit complexity's influence appears limited in certain sectors.

Martinez and Moraes (2024) extended this analysis to Brazil's basic infrastructure sector, using panel data from 31 companies listed on B3 between 2011 and 2022. Their findings confirmed that company size and engagement with Big Four auditors are positively associated with higher audit fees, while strong corporate governance practices and financial restatements also influence fees. Wahyuni et al. (2024) echoed these findings, emphasizing that firm-specific attributes like size, complexity, and financial performance are critical determinants of audit fees. Regulatory and market dynamics further affect fees, with higher fees reflecting the additional effort required for larger, more complex audits. Similarly, Bunget and Lungu (2023) examined data from 27 firms on the Bucharest Stock Exchange during 2017–2021 and found that total assets and turnover positively influenced audit fees, while market capitalization did not. Indriasih et al. (2023), focusing on Indonesian trading and service firms, confirmed that company size and debt risk positively affect audit fees, highlighting the relevance of total assets and financial risks in shaping audit costs. Conversely, audit complexity and audit risk showed no significant effect, likely due to independent auditing practices among subsidiaries and other mitigating factors.

Musa (2023) examined 53 listed financial service firms in Nigeria from 2007 to 2020 and found that board size and gender diversity positively influenced audit fees, while board diligence had a significant negative effect. Similarly, Musa et al. (2021) highlighted that higher female board representation increases audit fees, while frequent board meetings, ideally at least four per year, reduce fees by enhancing governance and minimizing audit risks. Rizal and Sarundayang (2023) studied 60 consumer goods firms in Indonesia (2019–2022) and concluded that board size and independence significantly impacted audit fees, whereas company size, public accounting firm size, and company risk had no significant influence. These findings emphasize the critical role of board characteristics in shaping audit fee structures across sectors.

Kajola et al. (2022) analyzed Nigerian banks (2006–2020) and found that board independence, bank size, and leverage positively influenced audit fees, while joint audits had a negative effect. However, profitability, audit tenure, and board size were not significant determinants. Similarly, Lasriyani et al. (2022) studied Indonesian technology firms (2016–2020), revealing that the composition of boards of directors and commissioners significantly increased audit fees, while audit committee composition and company size had insignificant effects. These results suggest that while larger boards and stronger governance structures drive higher audit fees, other

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governance elements may have limited or varying impacts depending on the sector and regional context

Alhadisa and Yusrianti (2024) investigated the effects of profitability, company risk, audit report lag, and CEO gender on audit fees for 75 non-financial companies listed on the Indonesia Stock Exchange from 2018 to 2021. Using panel data analysis and paired sample t-tests, the study found that audit report lag significantly increased audit fees, while profitability, company risk, and CEO gender had no notable impact. Notably, profitability and audit report lag showed significant changes before and during the COVID-19 pandemic, but audit fees, company risk, and CEO gender remained stable over the periods. These findings suggest that while audit delays drive audit fees upward, profitability does not significantly influence fee structures in non-financial firms during normal or crisis conditions.

Similarly, Ogiriki and Erebi (2024) examined audit fee determinants in Nigerian consumer goods companies using data from 2012 to 2022. The results revealed that firm size and profitability, particularly measured by return on assets, significantly influenced audit fees, while firm age had no effect. Rimet and Syakirin (2024) extended this inquiry to Indonesia's food and beverage sector, analyzing data from 15 firms over 45 observations during 2020–2022. They found that company complexity and board composition significantly impacted audit fees, whereas profitability and company risk did not. In European mining companies, Mamcarczyk et al. (2023) identified audit fee determinants using data from 62 firms in 2019. Findings indicated that profitability, auditee size, auditor type (Big Four vs. non-Big Four), and the number of disclosed KAMs significantly influenced audit fees, with variations also driven by the stringency of a country's reporting and auditing standards. These results underscore the varying roles of profitability and firm-specific characteristics in shaping audit fees across sectors and regions.

Empirical research examining the relationship between firm leverage and audit fees has produced varied results, reflecting the diverse risk dynamics and regulatory frameworks in the financial services sector. Several studies suggest a negative relationship, highlighting specific contexts where higher leverage coincides with lower audit fees. For example, Ahmed et al. (2018) and Hallak and Silva (2012) report that heightened leverage may lead to reduced audit risk due to strict debt covenants or increased monitoring by creditors, which could lower the scope of auditors' perceived responsibilities. These findings suggest that robust external oversight associated with high leverage might mitigate risks and reduce the demand for extensive audit procedures.

Equally, other studies establish a positive association, indicating that leverage often intensifies financial risk, leading auditors to demand higher fees as compensation for the increased complexity. Causholli et al. (2011) and Zaman et al. (2011) argue that the heightened risk of default and liquidity constraints associated with high leverage necessitate more rigorous audit procedures, thereby raising fees. Similarly, Masoodul

Publication of the European Centre for Research Training and Development-UK et al. (2014) and Imeni and Daryaei (2020) identify a significant positive link between leverage and audit fees, emphasizing that auditor's factor in leverage-related uncertainties when determining fees. Barua et al. (2019) further illustrate that highly leveraged firms require intricate evaluation processes, with distinctions in operating liability leverage and contractual liability leverage affecting audit fee structures differently. Their findings reveal that estimated operating liability leverage imposes greater demands on auditors due to its broader uncertainties, driving up fees.

METHODOLOGY

Research Design

The study adopted an ex-post facto research design, utilizing existing data without researcher manipulation or intervention, making it well-suited for archival (historical) data analysis and effective for examining the relationship between firm attributes and audit fees. Secondary data were sourced from the annual reports of selected financial service firms, ensuring cost-effectiveness, time efficiency, and reliability due to the use of audited historical records. Multiple analytical techniques were employed to achieve the research objectives. Descriptive statistics summarized central tendencies (mean, median) and dispersion (standard deviation) for key variables such as audit fees, firm size, board size, firm profitability, and firm leverage. Additionally, Pearson's Correlation Matrix was used to evaluate the strength and direction of pairwise relationships, facilitating the identification of potential multicollinearity among explanatory variables. To prevent spurious regression results, stationarity tests were conducted using the Levin et al. (2002) method. Relationships between the independent variables (firm attributes) and the dependent variable (audit fees) were analyzed using a Panel Least Squares Regression Model, which accounted for both cross-sectional and time-series variations.

A combination of purposive and proportionate sampling techniques was employed to select 15 firms from the population of 45 financial service firms listed on the Nigerian Exchange Group. Table 3.1 outlines the population selection from sectors and the corresponding proportion firms selected. The selection strategy ensured that at least one firm was selected from each sub-sector having five or fewer firms, while five firms were selected from any sub-sector with more than twenty firms. This ensures proportionate representation across the financial services sub-sectors. Asset management and investment companies were excluded due to unavailable audited financial data.

Table 3.1 Population Distribution and Sample Size Selection

| S/N | Sector | Firms | Proportion |
|--------------|---|-----------|------------|
| 1 | Commercial Banks | 12 | 5 |
| 2 | Mortgage Banks | 3 | 2 |
| 3 | Savings and Loans | 2 | 1 |
| 4 | Microfinance Banks | 1 | 1 |
| 5 | Insurance Companies | 22 | 5 |
| 6 | Financial Holdings/Exchange Group | 2 | 1 |
| 7 | Asset Management and Investment Companies | 3 | - |
| Total | | 45 | 15 |

Source: Researcher's compilation (2024)

Model Specification

Drawing on Simunic's (1980) audit pricing model, which posits that audit fees respond to audit effort and client-specific risks, this study adopts the Panel Least Square Regression to accommodate firm-level heterogeneity over time (2013-2023). The logarithm of audit fees (ADFS) serves as the dependent variable to normalize the typically skewed distribution of fee data. Key independent variables capture firm-specific attributes (firm size, board size, firm profitability, and firm leverage). The model is specified as:

$$ADFS_{it} = \beta_0 + \beta_1 \text{LogFRSZ}_{it} + \beta_2 \text{LogBDSZ}_{it} + \beta_3 \text{Log FPRF}_{it} + \beta_4 \text{FLVR}_{it} + \epsilon_{it}$$

Where:

| | | |
|--------------------------------|---|---|
| LogADFS _{it} | = | Natural log of Audit Fees for firm i at time t |
| LogFRZE _{it} | = | Natural log of Firm Size (total assets) |
| LogBDSZ _{it} | = | Log of Board Size (number of directors) |
| LogFPRF _{it} | = | Log of Firm Profitability (profit for the year) |
| FLVR _{it} | = | Firm Leverage (Debt/Equity ratio) |
| β ₀ | = | Intercept |
| β ₁ –β ₄ | = | Coeff. representing the strength and direction of the relationships |
| ε | = | Error term (stochastic disturbance) |
| i | = | Firm-specific identifier (cross-section) |
| t | = | Time period (2013–2023) |

Measurement of Variables

Firm size (FRSZ) is measured by the total assets of the firm, which are transformed into natural logarithms (Log(FRSZ)) to ensure normality in the data. Board size (BDSZ) captures the firm's governance structure and is represented by the total number of directors at the financial year-end, also expressed in logarithmic form (Log(BDSZ)).

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Firm profitability (FPRF) is measured as the profit for the year and is log-transformed (Log(FPRF)) to address distribution skewness and enhance interpretability. Firm leverage (FLVR) is calculated as the ratio of total debt to total equity, providing insight into the firm's reliance on borrowed funds. Audit fees (ADFS) are represented as the natural logarithm of the total fees paid to external auditors (Log(ADFS)), which not only addresses skewness in the data but also facilitates the interpretation of coefficients in the analysis.

Operationalization

Operationalization involves translation of abstract theoretical concepts into specific, measurable, and observable forms which can be empirically assessed and analyzed within the study context.

Table 3.3: Operationalization of Variables

| Category | Variable | Symbol | Measurement | Source | Apriori Expectation |
|------------------------------|--------------------|------------|--|--------------------------------|---------------------|
| Independent Variables | Firm Size | Log (FRSZ) | Natural logarithm of total assets, as disclosed in the financial statements. | Monye-Emina and Jeroh (2022) | (+) |
| | Board Size | Log (BDSZ) | Total number of directors serving on a firm's board. | Kajola et al. (2022) | (-) |
| | Firm Profitability | Log (FPRF) | Natural logarithm of total profit for the year, as disclosed in the financial statements. | Santhosh and Ganesh (2020) | (+) |
| | Firm Leverage | (FLVR) | Debt-to-equity ratio, calculated as Total Debt / Total Equity. | Legenzova and Lialkaitė (2023) | (+) |
| Dependent Variable | Audit Fees | Log (ADFS) | Natural logarithm of total audit fees paid by the firm to external auditors, as disclosed in the financial statements. | Legenzova and Lialkaitė (2023) | |

Source: Author's operationalization (2024)

ANALYSIS AND RESULTS

Descriptive Statistics

This subsection summarizes the distribution and central tendencies of the study's key variables.

Table 4.1 Descriptive Statistics

| | ADFS | FRSZ | BDSZ | FPRF | FLVR |
|------------------|-------------|-------------|-------------|-------------|-------------|
| Mean | 261.8232 | 2152801. | 10.81098 | 41077.01 | 0.854756 |
| Median | 30.00000 | 43161.00 | 10.00000 | 1330.500 | 0.480000 |
| Maximum | 2699.000 | 26457042 | 22.00000 | 676909.0 | 12.16000 |
| Minimum | 1.000000 | 864.0000 | 4.000000 | -4302.000 | 0.000000 |
| Std. Dev. | 470.5791 | 4206969. | 3.885746 | 100198.5 | 1.473913 |
| Skewness | 2.625841 | 2.912786 | 0.763125 | 4.347114 | 5.201735 |
| Kurtosis | 11.14720 | 13.21077 | 3.053763 | 25.16216 | 36.37982 |
| Jarque-Bera | 642.0400 | 944.3471 | 15.93756 | 3872.799 | 8353.369 |
| Probability | 0.000000 | 0.000000 | 0.000346 | 0.000000 | 0.000000 |
| Sum | 42939.00 | 3.53E+08 | 1773.000 | 6736630. | 140.1800 |
| Sum Sq. Dev. | 36095482 | 2.88E+15 | 2461.140 | 1.64E+12 | 354.1045 |
| Observatio ns | 165 | 165 | 165 | 165 | 165 |

Source: Author's computation (2024).

Table 4.1 presents the descriptive statistics for variables, reveal substantial variability among key variables influencing audit fees (ADFS) in Nigerian financial service firms. Audit fees range from 1.00 to 2,699.00, with a mean of 261.82 and a median of 30.00, indicating a positively skewed distribution driven by a few firms with exceptionally high fees. Firm size (FZE) exhibits significant disparity, ranging from 864.00 to 26,457,042, with a mean of 2,152,801, reflecting the inclusion of both small and large firms. Board size (BDSZ) is relatively symmetric, with a mean of 10.81 and a range of 4.00 to 22.00, while firm profitability (FPRF) ranges from losses of -4,302.00 to profits of 676,909.00, with a mean of 41,077.01, indicating substantial performance differences. Firm leverage (FLVR) shows a mean of 0.85 and a maximum of 12.16, highlighting significant variability in debt reliance. To assess normality, Jarque-Bera Statistics, Skewness, and Kurtosis tests were conducted. Each variable's kurtosis exceeded the conventional benchmark of 3, and their skewness values surpassed 1, except for BDSZ (below 1), indicating varying degrees of skewness. In all cases, the Jarque-Bera p-values were 0.000000, which is less than the 5% significance level.

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Hence, the dataset is deemed to be normally distributed, allowing for reliable subsequent analyses.

Pearson's Correlation Analysis

The correlation analysis evaluates the strength and direction of pairwise relationships among the variables. Table 4.2 displays the Pearson's Correlation Matrix results. Each variable's coefficient reflects how strongly it correlates with ADFS (the dependent variable) and with independent variables:

Table 4.2: Pearson's Correlation Matrix Analysis

| Variables | ADFS | FRSZ | BDSZ | FPRF | FLV R |
|-------------|----------|-----------|-----------|----------|----------|
| ADFS | 1.000000 | | | | |
| | - | | | | |
| FRSZ | 0.943035 | 1.000000 | | | |
| | 0.0000 | - | | | |
| BDSZ | 0.553301 | 0.564341 | 1.000000 | | |
| | 0.0491 | 0.0315 | - | | |
| FPRF | 0.811801 | 0.918118 | 0.431557 | 1.000000 | |
| | 0.0159 | 0.0000 | 0.3243 | - | |
| | | | | | 1.000 |
| FLVR | -0.22511 | -0.013178 | -0.023140 | -0.24543 | 00 |
| | 0.9206 | 0.7097 | 0.7979 | 0.5986 | - |

Source: Author's computation (2024)

The Pearson Correlation Matrix analysis reveals distinct relationships between the variables and audit fees (ADFS) in Nigerian financial service firms. Firm size (FRSZ) demonstrates a strong and positive relationship with audit fees, with a correlation coefficient of 0.943035, indicating that larger firms tend to incur higher audit fees due to increased operational complexity and audit scope. Similarly, board size (BDSZ) is positively correlated with audit fees, with a coefficient of 0.553301. This suggests that firms with larger boards, which may reflect more robust governance structures, tend to engage in audits of greater depth and cost. Firm profitability (FPRF) also exhibits a strong positive relationship with audit fees, as evidenced by a correlation coefficient of 0.811801. This indicates that more profitable firms, often associated with higher financial reporting complexity, attract higher audit fees. Conversely, firm leverage (FLVR), shows a weak negative relationship with audit fees, with a correlation coefficient of -0.22511. This suggests that higher reliance on debt does not significantly drive audit costs and may reflect variations in how leverage impacts perceived audit risk. These correlations provide preliminary insights for a more detailed examination through panel regression analysis.

4.1.3 Unit Root Test - Levin, et al., (2002).

The test verifies the stationarity of the panel dataset to prevent spurious regression results. This test originated from It assumes a common autoregressive coefficient across the panel but allows for individual-specific effects and heterogeneous error variances; designed to improve the power and reliability of unit root testing in panel data.

Table 4.3: Levin, Lin & Chu t* Unit Root Test

| Method | Statistic | Prob.** |
|---------------------|-----------|---------|
| | c | |
| | 1.6043 | |
| Levin, Lin & Chu t* | 2 | 0.0457 |

** Probabilities are computed assuming asymptotic normality

Intermediate results on D(ADFS,2)

Source: Author's computation (2024)

Table 4.3 presents the Levin, Lin & Chu t Unit Root Test*, conducted to check whether any variable contains a unit root. The result ($p=0.0457$) confirms stationarity at the 5% significance level when differenced twice (order of integration = I(2)). This finding ensures that the variables used are suitable for panel data regression, minimizing the likelihood of spurious or misleading outcomes.

4.1.4 Panel Least Squares Regression Model (PLSRM)

This PLSRM estimates the relationships between firm attributes and audit fees, controlling for cross-sectional and time-series variations.

Table 4.4: Panel Least Square Regression Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| FRSZ | 0.563423 | 0.030515 | 18.46375 | 0.0000 |
| BDSZ | -0.100400 | 0.168816 | -0.594731 | 0.5529 |
| FPRF | 0.132547 | 0.025664 | 5.164638 | 0.0000 |
| FLVR | 0.010093 | 0.028045 | 0.359874 | 0.7194 |
| C | -3.596960 | 0.290592 | -12.37804 | 0.0000 |
| R-squared | 0.625706 | Mean dependent var | | 3.909387 |
| Adjusted R-squared | 0.623825 | S.D. dependent var | | 1.904046 |
| S.E. of regression | 0.525514 | Akaike info criterion | | 1.581315 |
| Sum squared resid | 43.63410 | Schwarz criterion | | 1.676216 |
| Log likelihood | -123.8772 | Hannan-Quinn criter. | | 1.619844 |
| F-statistic | 492.1685 | Durbin-Watson stat | | 1.922861 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Author's computation (2024)

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Table 4.4 presents the results of the Panel Least Squares Regression Model for the 15 selected financial service firms (165 observations). The Adjusted R^2 value of 0.623825 indicates that approximately 62% of the variation in ADFS is explained by the independent variables firm size - FRSZ, board size - BDSZ, firm profitability - FPRF, and firm leverage FLVR; while the remaining 38% may arise from error terms or other unobserved factors. The Durbin-Watson statistic of 1.922861 lies close to 2, suggesting no severe autocorrelation issues in the residuals. Specifically, FRSZ ($p=0.000$) and FPRF ($p=0.0000$) both exert significant positive influences on ADFS, whereas BDSZ ($p=0.5529$) has a negative but non-significant effect, and FLVR ($p=0.7194$) shows no significant impact. The F-statistic of 492.1685 and its probability of 0.000000 confirm that the model is valid at the 1% significance level, reinforcing the robustness of these findings.

Test of Hypotheses and Decisions

The tests result of the hypotheses, as derived from the analysis presented in the Panel Least Square Regression Model in Table 4.3, confirm that firm size (FRZS) significantly affects audit fees, given its p-value of 0.0000, which is below the 0.05 threshold. This leads to the rejection of the null hypothesis, H_{01} , for the alternative, indicating larger and more complex firm incur higher audit fees. For H_{02} , the p-value for board size (BDSZ) is 0.5529, which exceeds the 0.05 threshold, leading to the acceptance of the null hypothesis, implying that board size does not significantly influence audit fees. Firm profitability (FPRF), the p-value of 0.0000, is below the threshold of 0.05, resulting in the rejection of the null hypothesis for H_{03} . This highlights that firms' profitability significantly affect audit fees, with more profitable firms incurring higher audit fees. Equally, firm leverage (FLVR), with a p-value of 0.7194 above 0.05 threshold, supports the null hypothesis for H_{04} , suggesting that leverage does not significantly impact audit fees of financial service firms in Nigeria.

DISCUSSION OF FINDINGS

Firm Size and Audit Fees

The results of hypothesis one show that Firm Size (FRZS) significantly and positively affects Audit Fees (ADFS) in Nigerian financial service firms, with a regression coefficient of 0.563423 and a p-value of 0.0000 ($p < 0.05$). The Correlation Matrix confirms a strong positive relationship between Firm Size and Audit Fees. These findings align with studies highlighting that larger firms incur higher audit fees due to their operational scale and resource demands (Ogiriki & Erebi, 2024; Larbi et al., 2024; Martinez & Moraes, 2024; Bunget & Lungu, 2023; Septiana & Santioso, 2023). Contrasting views include Rizal and Sarundayang (2023), who found no significant effect, and Monye-Emina and Jeroh (2022), who reported a negative association with abnormal audit fees. Agency Theory (Jensen & Meckling, 1976) attributes higher fees to increased principal-agent conflicts in larger firms, while Growth of the Fitter Theory (Alchian, 1950) links firm expansion to greater managerial and operational complexities, necessitating rigorous audits to maintain internal controls and risk management.

Board Size and Audit Fees

The results from hypothesis two indicate that Board Size (BDSZ) has a non-significant effect on Audit Fees (ADFS) in Nigerian financial service firms, with a regression coefficient of -0.100400 and a p-value of 0.5229 ($p > 0.05$). While the Correlation Matrix shows a strong positive relationship, this discrepancy may stem from correlation capturing broad associations, whereas regression analysis accounts for other variables like profitability, leverage, and firm size. Although larger boards theoretically increase monitoring costs through broader expertise and diverse perspectives (Jensen & Meckling, 1976), their effect on audit fees may be mitigated by governance mechanisms like board independence, specialized committees, or strong internal controls (Oladipupo & Monye-Emina, 2016; Martinez & Moraes, 2024). Researchers argue that board quality factors, such as independence and expertise, often outweigh structural dimensions in shaping audit demands (Rimet & Syakirin, 2024). These findings underscore the complexity of governance structures, where board size alone does not directly determine audit fees but interacts with other firm attributes and regulatory factors.

Firm Profitability and Audit Fees

The results for Hypothesis Three reveal that Firm Profitability (FPRF) positively and significantly influences Audit Fees (ADFS) in Nigerian financial service firms, with a coefficient of 0.132547 and a p-value of 0.0000 ($p < 0.05$). The Correlation Matrix supports this, showing a strong positive relationship between profitability and audit fees. These findings align with the Growth of the Fitter Theory (Alchian, 1950), which suggests that profitable firms expand and require more rigorous audits to ensure reliable financial disclosures. Studies such as Musa et al. (2022), Mulyadi and Narsa (2020), and Saleh and Hassan (2020) confirm that firms with robust earnings face higher fees due to added complexity and audit effort. However, other researchers highlight contextual factors like governance or regulatory frameworks that can moderate this relationship (Rimet & Syakirin, 2024; Akosu et al., 2024; Septiana & Santioso, 2023). From an Agency Theory perspective (Jensen & Meckling, 1976), profitable firms may require increased external monitoring due to managers' greater discretionary power. In Nigeria's financial service sector, profitability consistently drives higher audit fees through the need for extensive procedures to ensure transparency and compliance.

Firm Leverage and Audit Fees

The results for Hypothesis Four show that Firm Leverage (FLVR) does not significantly influence Audit Fees (ADFS) among Nigerian financial service firms, with a p-value of 0.7194 ($p > 0.05$) and a Correlation Coefficient of -0.22511, indicating a weak negative relationship. These findings support the null hypothesis and suggest that leverage alone does not affect audit costs. While some studies argue that higher leverage increases financial risk and audit fees (Zaman et al., 2011; Masoodul et al., 2014), others contend that creditor oversight mitigates perceived risks (Ahmed et al., 2018). This study aligns with views that robust institutional monitoring and regulatory policies moderate leverage-related risks, reducing their impact on audit fees (Barua et al., 2019; Imeni & Daryaei, 2020). From an Agency Theory perspective, debt limits managerial

Publication of the European Centre for Research Training and Development-UK discretion by restricting free cash flows (Jensen & Meckling, 1976). Meanwhile, Growth of the Fitter Theory (Alchian, 1950) suggests that leveraged with well-governed firms can maintain "fitness," minimizing audit fee increases. Thus, the findings highlight the importance of governance and regulatory factors over leverage in shaping audit fees in Nigerian financial service firms.

CONCLUSION, AND RECOMMENDATIONS

The study examines the effect of firm attributes on audit fees among 15 Nigerian financial service firms, covering 165 observations over the 2013–2023 period. Using descriptive statistics, correlation analysis, and panel regression techniques, the study concludes that firm size and profitability are significant determinants of audit fees, while board size and leverage show no significant impact. These findings underscore the role of operational complexity and financial performance in shaping audit costs. The results align with theoretical perspectives such as Agency Theory, which links firm size and profitability to increased audit scrutiny, and Growth of the Fitters Theory, which highlights the added complexity of expanding operations.

To enhance audit efficiency and manage costs, the study recommended that firms should optimize their operational scale and complexity by streamlining processes and strengthening internal controls to reduce audit costs without compromising efficiency. Balanced board composition is essential for effective governance, with optimal board sizes tailored to firm type, such as 10–11 members for commercial banks and 5–6 for microfinance banks, to improve oversight while controlling costs. Managers should adopt sustainable profitability strategies that minimize regulatory risks, reducing the need for intensive audit scrutiny. Additionally, firms with high debt levels should proactively implement robust governance and risk management frameworks to mitigate potential audit risks and associated costs.

This study uniquely contributes to knowledge by establishing firm size and profitability as significant determinants of audit fees in Nigerian financial service firms, filling a critical gap in understanding audit fee dynamics within emerging markets; highlights the mitigating role of institutional and regulatory frameworks in addressing audit risks associated with leverage, specific to Nigeria's financial services. The study further underscores the limited direct impact of board size and leverage on audit fees, challenging conventional assumptions and emphasizing governance quality over structural characteristics. For future research, it is recommended to investigate the influence of board quality attributes, such as independence and expertise, on audit fees to complement these findings and to explore sector-specific audit fee determinants, enabling a broader understanding of industry-specific dynamics in emerging markets.

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European Journal of Accounting, Auditing and Finance Research

Vol.13, No. 2, pp.,1-26, 2025

Print ISSN: 2053-4086(Print),

Online ISSN: 2053-4094(Online)

Website: <https://www.eajournals.org/>

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