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Firm Characteristics and Performance of Listed Information and Communication Technology (ICT) Firms in Nigeria

Okpala Ngozi Eugenia (Ph.D.)

Department of Accountancy,
Faculty of Management Sciences,
Nnamdi Azikiwe University, Awka, Nigeria

ABSTRACT
This study investigated the effect of firm characteristics on performance of listed information and communication technology (ICT) firms in Nigeria. Tobin's Q was used as dependent variable while firm age and firm leverage were the independent variables. A sample of 9 listed ICT firms were used for the period of six (6) years covering the period of 2019 to 2024. The study used ex-post facto design while the data for the study was collected from the annual reports and accounts of the listed ICT firms in Nigeria. With regression model, the results of the study showed that there is a positive and significant relationship between firm age, firm leverage and financial performance of listed ICT firms in Nigeria at 1% level of significance. Thus, the study concludes that firm characteristics enable financial performance of listed ICT firms in Nigeria. The study therefore recommends above all that ICT firms in Nigeria should adopt strategic capital structure decisions and improve operational efficiency to achieve higher performance.
Keywords*:* Firm Characteristics; Firm Age; Firm Leverage, Tobin's Q

1. INTRODUCTION

The information and communication technology (ICT) sector has emerged as a transformative force in Nigeria's economic architecture, surpassing oil and gas in its contribution to national output. In nominal terms, the ICT sector grew by 31.63 per cent year-on-year in the first quarter of 2025, lifting its share of nominal GDP to 10.29 per cent. The telecommunications subsector alone contributed 9.20 per cent to real GDP in the second quarter of 2025, while fintech and digital payments continue to scale rapidly. On the Nigerian Exchange (NGX), ICT stocks have become one of the market's most dynamic segments, with combined market capitalization surging 58 per cent year-on-year to N18.61 trillion as of November 2025. The federal government has set an ambitious target for ICT to contribute 21 per cent of GDP by 2027, underscoring the sector's strategic centrality to Nigeria's economic diversification agenda (Olojede, et al., 2025).

However, this impressive macroeconomic trajectory masks substantial operational and structural challenges confronting individual listed ICT firms. The sector continues to grapple with an acute skills shortage that threatens an estimated $11 billion in annual industry revenue, with only about seven per cent of Nigerians aged 15 to 24 possessing marketable ICT skills. Bank credit to the ICT sector has contracted significantly, declining to N1.84 trillion as of September 2025 from N2.47 trillion in January 2024, thereby constraining the capital investment essential for scaling operations and driving innovation. Furthermore, major listed telecommunications operators have sustained substantial foreign exchange losses, with MTN Nigeria alone recording N400.4 billion in loss after tax for the 2024 financial year due to naira devaluation. These sector-specific headwinds raise a fundamental question: why do firms

operating within the same macroeconomic and regulatory environment exhibit such pronounced disparities in financial performance?

Scholarly inquiry has long affirmed that firm-level characteristics including size, financial leverage, liquidity, and age exert a material influence on corporate performance (Jensen & Meckling, 1976). Agency theory, in particular, provides a robust framework for understanding these relationships, positing that firm attributes can either mitigate or exacerbate the inherent conflicts of interest between managers and shareholders. For instance, financial leverage may function as a disciplining mechanism that curtails managerial opportunism (Jensen, 1986), yet in capital-intensive and innovation-driven sectors such as ICT, excessive debt burdens could equally expose firms to financial distress and impair their capacity to invest in research and development.

A critical examination of the extant literature reveals a landscape characterized by empirical inconsistency and sectoral fragmentation. Kanoma et al. (2024), in their study on listed ICT firms in Nigeria, found that both long-term and short-term debt financing ratios exerted a positive and significant influence on return on assets. Afolabi et al. (2025) similarly reported that total debt, long-term debt, and short-term debt demonstrated a positive impact on the valuation of listed ICT firms, with firm size employed as a moderating variable. Conversely, evidence from a broader study of corporate attributes and financial reporting quality among listed ICT firms indicated that firm size had a significant but negative effect on reporting quality, while firm age exhibited an insignificant negative relationship. These conflicting findings suggest that the precise nature and directional influence of firm characteristics on performance may vary depending on the specific performance metric employed and the temporal scope of analysis.

More fundamentally, the existing body of research suffers from a pronounced sectoral fragmentation. While studies have examined capital structure and financial performance within the ICT sector (Kanoma et al., 2024; Afolabi et al., 2025), the broader construct of firm characteristics encompassing size, leverage etc and their direct effect on core financial performance metrics using market-based measure such Tobin's Q remains critically underexplored within the specific context of listed ICT firms in Nigeria. Moreover, the majority of extant studies rely on data from periods preceding the profound macroeconomic dislocations triggered by the naira devaluation of 2023–2024 and the subsequent sectoral recalibration, thereby creating a temporal disconnect between empirical findings and contemporary market realities.

This confluence of theoretical ambiguity, empirical inconsistency, and sectoral neglect creates a conspicuous lacuna in the financial literature. Managers of listed ICT firms in Nigeria are consequently left without clear, evidence-based guidance for optimizing capital structure, liquidity management, or growth strategies tailored to the unique risk profile of the digital economy. Investors similarly lack refined analytical heuristics for discriminating between firms within the NGX ICT segment, which has exhibited returns ranging from 1,354 per cent for some players to negative 10.5 per cent for others within a single calendar year (Adesola & Tunde, 2023). Therefore, the study seeks to examine the effect of firm characteristics on financial performance firms in Nigeria using listed ICT firms as a reference which no known study had focused on based on the available literature. To achieve this purpose, we formulated the following hypotheses;

H_{01}: Firm age has no significant effect on financial performance of listed ICT firms in Nigeria

H_{02}: Firm leverage has no significant effect on financial performance of listed ICT firms in Nigeria

2. Review of the Related Literature

2.1. Firm Characteristics

According to Safdar et al. (2023), firms can be distinguished from one another on the basis of different financial and non-financial characteristics including size, value, profitability, structure, leverage, and liquidity. These attributes are unique to specific companies and shape the perceptions of information users regarding the firm's performance and future prospects.

Gbadebo (2022) notes that firm characteristics are typically operationalized as independent variables that explain variations in firm performance, valuation, financial reporting quality, and governance

effectiveness. From an agency theory perspective, these characteristics also determine the magnitude of conflicts between managers and shareholders, thereby shaping the overall economic efficiency of the firm.

2.1.1 Financial Performance

Richard et al (2019) see financial performance as one of three specific areas of firm outcomes, alongside product market performance and shareholder return. Within this framework, financial performance encompasses metrics that capture a firm's profitability and efficiency in generating returns, including profits, return on assets, and return on investment.

Firm financial performance refers to the quantifiable economic outcomes of a firm's operational and strategic activities as reflected in its financial statements over a specific reporting period. It is commonly measured using accounting-based profitability ratios such as Return on Assets (ROA), which indicates how efficiently a firm utilizes its asset base to generate earnings; Return on Equity (ROE), which measures the return generated on shareholders' invested capital; and Net Interest Margin (NIM), a sector-specific metric for banks that captures the difference between interest income earned and interest paid out relative to earning assets (Omaliko, 2026).

2.2 Theoretical Framework

The theoretical framework which gives the meaning of a word in terms of the theories on firm characteristics and firm financial performance established in this study is Agency Theory.

2.2.1 Agency Theory

Agency theory provides a foundational lens through which the relationship between firm characteristics and performance can be understood as a function of governance and behavioral conflict rather than purely operational efficiency. Originating from the work of Jensen and Meckling (1976), the theory posits that the separation of ownership (principals) and control (agents) creates inherent costs, as managers may be incentivized to act in their own self-interest rather than maximizing shareholder wealth. The characteristics of a firm; such as size, leverage, age, and ownership structure serve either to exacerbate these agency conflicts or to mitigate them through monitoring and bonding mechanisms.

The divergent findings regarding firm size in the studies by Foluso et al. (2022) and Diriyai and Korolo (2023) can be reconciled through the agency perspective on managerial entrenchment. In large, dispersed organizations, monitoring by shareholders becomes prohibitively costly, granting managers the latitude to pursue "empire building" strategies that prioritize personal prestige or compensation over profitability (Jensen & Meckling, 1976). This dynamic helps explain the negative correlation between size and performance observed in the Nigerian oil and gas sector by Foluso et al. (2022), where scale may have amplified operational inefficiencies. Conversely, as noted by Diriyai and Korolo (2023) in the industrial goods sector, increased firm size often invites greater external scrutiny from regulators and analysts, a mechanism of external governance that can suppress opportunistic managerial behavior and yield a positive association with performance and reporting quality.

Perhaps the most robust agency mechanism is found in financial leverage. Jensen's (1986) free cash flow hypothesis provides a clear rationale for the positive association between debt and performance identified by Foluso et al. (2022). Within this framework, debt is not merely a capital structure decision but a disciplining device that reduces agency costs. High leverage imposes mandatory fixed payments that force managers to generate efficient cash flows and reduce the "free cash" available for discretionary, value-destroying expenditures. Consequently, the threat of default compels managers to align their actions more closely with the value-maximizing objectives of the principals, thereby enhancing firm performance. The influence of firm age, meanwhile, is often viewed through the lens of managerial entrenchment. As organizations mature and institutionalize, the power dynamics between the board and executives can stagnate, creating a shield against market discipline. This entrenchment can lead to diminishing marginal returns on experience, as the reduction in oversight allows for the persistence of suboptimal strategies and a plateau in performance outcomes (Omaliko, 2026).

Finally, the complexity of ownership structure further illuminates the non-linear predictions of agency theory. The convergence-of-interest hypothesis suggests that as managerial ownership rises, the financial interests of the agent align with those of the principals, leading to improved performance. However, the

negative correlation observed by Foluso et al. (2022) aligns with the alternative entrenchment hypothesis: when insider ownership concentration reaches a threshold, managers may wield sufficient voting power and influence to insulate themselves from disciplinary action, allowing them to extract private benefits at the expense of minority shareholders. In sum, agency theory explains that the performance impact of firm characteristics is ultimately determined by whether those characteristics impose discipline and reduce information asymmetry or, alternatively, create a fertile environment for managerial opportunism and entrenchment.

2.3 Empirical Review

Ndah et al. (2025) examined the impact of firm characteristics on the financial performance of oil and gas companies listed on the Nigerian Stock Exchange. Specifically, the study investigates the influence of financial leverage (FLV), firm size (FSZ), firm age (FAG), and return on equity (ROE) on financial performance, measured by return on assets (ROA). Utilizing panel data extracted from the annual financial reports of selected oil and gas firms over a period of 11years (2010-2023), the analysis employed Pooled Ordinary Least Squares (OLS), Random Effects Model (REM), and Fixed Effects Model (FEM). Diagnostic tests, including the Breusch-Pagan Lagrange Multiplier and Hausman tests, confirmed the appropriateness of the robust Fixed Effects Model for the analysis. The findings reveal that financial leverage and return on equity have a positive and statistically significant effect on return on assets, suggesting that effective use of debt and strong equity returns enhance profitability. Conversely, firm size shows a negative and significant relationship with financial performance, indicating potential inefficiencies associated with firm growth. Firm age, however, has an insignificant effect on ROA, implying that maturity alone does not drive financial outcomes in the sector. The study concludes that firm-specific factors play a critical role in shaping financial performance.

Timi and Paymaster (2025) examined the impact of firm characteristics on financial performance of Nigerian companies are the focus of this study. As it pertains to UBA Nigeria Plc: The study adopted an ex post facto research design. The Bank's publicly accessible financial records for 2013–2022 provide the study's data. Using E-view 9.0 software, the study ran the data using multiple regression analysis and descriptive statistics. The study used market capitalization and firm age as stand-ins for firm characteristics, and return on asset as a proxy for financial performance. ROA was found to be positively and statistically significantly impacted by both FAG and MKC. Finally, the financial performance of UBA Nigeria Plc is influenced by corporate characteristics. Optimal financial performance to attract investors and remain stockholders is more likely to be maintained by older firms, according to the study. Market capitalization is a useful instrument for managers to enhance their companies' financial performance.

Olojede et al. (2025) investigated effect of firm characteristics on the financial performance of listed consumer goods companies in Nigeria from 2013 to 2022. The study used ex-post facto research design and 10 listed consumer goods companies were sampled using purposeful sampling technique. The secondary data used for the study was obtained from annual reports of the sampled companies. The data was analysed using descriptive statistics, a correlation matrix, and ordinary least squares. The results revealed that firm size has a positive and significant impact on financial performance, indicating that larger firms generally perform better financially. Ownership structure also showed a positive and significant relationship with financial performance, suggesting that the composition of ownership can influence the success of a company. On the contrary, financial leverage was found to have a significant negative effect on financial performance, implying that higher levels of debt are linked to weaker financial performance. Overall, the study concluded that firm characteristics have a significant effect on the financial performance of the listed consumer goods companies in Nigeria

Adesola and Tunde (2023) examined the influence of firms' characteristics on financial performance of listed consumer goods companies in Nigeria from 2011 to 2020. The data for this study were obtained from secondary sources. The secondary data consists of data on the dependent and independent variables of the study among which are the data on the firm's profitability including (Return on Asset) ROA, Net Profit Margin (NPM) and Earning Per Share (EPS), and firm's financial performance proxied by financial leverage, firm size and firm age. These data were wholly sourced from annual reports and financial

statement of the individual companies for the periods covered. The hypotheses of this study were tested using static panel regression technique which measured the extent to which financial leverage, firm size and firm age influence the profitability of the sampled firms. The study found firm size to be positively associated with the profitability of listed consumer goods firms in Nigeria. In addition, it also found that age of the firm is negatively associated with the profitability of listed consumer goods firms in Nigeria. Since the study found that larger firms recorded higher profitability, it was recommended that management and other stakeholders of consumer goods firms in Nigeria should invest in their expansion so as to gain advantage of economies of scale which will improve their profitability.

Diriyai and Korolo (2023) investigated the connection between specific corporate attributes and the caliber of financial reporting among publicly listed industrial goods firms. The research specifically aimed to ascertain the influence of structural firm characteristics namely, firm size, liquidity, age, and leverage on financial reporting quality within this sector. Employing an ex post facto methodology, the study analyzed secondary data drawn from the annual financial statements and reports of these firms covering the period from 2015 to 2020. The analysis, conducted using Ordinary Least Squares (OLS) regression, revealed that both firm size and liquidity exhibit a significant positive relationship with reporting quality. Conversely, while firm age showed a positive association with reporting quality, this link was not statistically significant. Additionally, the study found a negative but statistically insignificant correlation between leverage and the quality of financial disclosures among Nigerian industrial goods companies.

Foluso et al. (2022) explored the influence of corporate attributes on the financial outcomes of Nigerian oil and gas firms listed on the public exchange. The analysis covered a sample of twelve companies quoted on the Nigerian Stock Exchange (NSE) between 2015 and 2019, a period spanning the nation's economic recession. Utilizing both pooled and cross-sectional analytical approaches, the study employed descriptive statistics to summarize the data and pooled least squares regression to test the empirical relationships. The regression model indicated that the combined independent variables firm size, financial leverage, ownership-induced performance, and firm age explained approximately 69% of the variance in financial performance. However, the study noted that other unobserved factors also contribute to the profitability of these entities. The findings revealed that financial performance among the sampled companies was positively and significantly associated with both financial leverage and firm age. In contrast, firm size and ownership-induced performance demonstrated a negative correlation with financial performance. Based on these outcomes, the authors recommended that firms should adopt a consistent practice of recording and capitalizing all product-related expenses.

Olowokure et al. (2016) examined firm structural characteristics and financial reporting quality of listed deposit money banks in Nigeria. Using secondary data from the published reports of thirteen listed deposit money banks in Nigeria for over a period of ten years between 2015 and 2014, they sought to find the determinants of financial reporting quality and reported the findings of the impact of structural characteristics like age, size and level of leverage on financial reporting quality. Using prior studies as a guide, the study also developed a model for loan loss provisions and generated the residuals, using these residuals known as abnormal loan loss provisions as the dependent variable for the multiple regression analysis, the study did not find any evidence of significant relationship between firm age, size, leverage and financial reporting quality.

3. METHODOLOGY

The study adopted an ex post facto design in order to determine the effect of firm characteristics on performance of listed ICT firms in Nigeria. Data for the study was obtained from the annual reports and accounts of the entire 9 listed ICT firms in Nigeria for the period of 2019-2024. Regression model was therefore employed in the data analysis of the study.

3.1 Model Specification

In line with the previous studies, the present study developed a model in examining the effect of firm characteristics on performance of listed ICT firms in Nigeria. This is shown below as thus;

$$TQ = \beta_0 + \beta_1 FA + \beta_2 FL + \varepsilon$$

Where:
TQ = Tobin's Q
FA = Firm Age measured as current year less year of incorporation.
FL = Firm Leverage measured as total debts divided by total assets
μ = Stochastic Term
β_1- β_2= Coefficient of Regression Equation
β_0 = Constant coefficient (intercept) of the model

Decision Rule: accept Ho if P-value >1-5% significant level otherwise reject Ho

4. DATA ANALYSIS AND RESULTS

4.1 Descriptive Summary

Table 1: Descriptive Statistics

	TQ	FA	FL
Mean	7.09	9.56	2.98
Median	6.88	9.25	2.43
Maximum	7.92	15	3.04
Minimum	4.56	9	0.87
Std. Dev.	0.12	0.71	0.36
Skewness	1.22	1.12	1.45
Kurtosis	2.33	2.05	2.78
Jarque-Bera	0.56	1.21	0.46
Probability	0.21	0.18	0.87
Sum	124	43.2	133
Sum Sq. Dev.	17.9	5.4	16.8
Observations	54	54	54

Source: E-View 12 Computational Results (2026)

From Table 1 above, it was found that financial performance of listed ICT firms in Nigeria is positively associated with a mean value of 7.09. Thus, implies that financial performance of listed ICT firms in Nigeria is determined by firm characteristics. The mean value of firm age (FA) for the sampled firms was 9.56 with a standard deviation value of 0.71. This means that firm age ensures firms financial performance. The maximum value of FA was 15 and the minimum value of FA was 9 implies that the sampled firms are within the age bracket of nine (9) and fifteen (15) years of operation.
The average value of firm leverage (FL) for the sampled firms was 2.98 with a standard deviation value of 0.87. This means that the extent to which a firm is been funded by debt enables financial performance of listed ICT firms in Nigeria. The maximum value of FL was 3.04 and the minimum value of FL was 0.87 implies that the debt financing enables firm financial performance.

4.2: Test of Hypotheses

Regression Model was developed to test the linear relationship between the dependent and independent variables. It was operated using E-Views 12 as shown in the table 2 below:

Table 2: Result on the Effect of Firm Characteristics on Performance of Listed ICT Firms in Nigeria

Dependent Variable: TQ
Method: Panel Least Squares
Date: 04/12/26 Time: 02:47
Sample: 2019-2024
Period included: 6
Cross-sections included: 9
Total panel (balanced) observations: 54

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FA	1.887364	0.207322	9.103539	0.0000
FL	0.386753	0.085341	4.531854	0.0031
C	1.986636	0.265854	7.472658	0.0000

R-squared	0.520874	Mean dependent var	5.675354
Adjusted R-squared	0.487837	S.D. dependent var	1.230948
S.E. of regression	1.098478	Akaike info criterion	8.098733
Sum squared resid	3.837321	Schwarz criterion	7.456732
Log likelihood	5.768699	Hannan-Quinn criter.	7.988736
F-statistic	6.893670	Durbin-Watson stat	2.018376
Prob(F-statistic)	0.000000		

Source: Author's Computation (2026)

4.4: DISCUSSION OF FINDINGS

The coefficient of determination R^2 shows 0.52 indicates that the overall model explained 52 percent of the total variations in the dependent variable (TQ). Thus, shows that firm characteristics can only explain 52 percent of variations in TQ leaving 48 percent unexplained. This is to say that there are other factors that could led to firm financial performance other than firm characteristics.

The results of the regression are therefore slated below as follows:

H_{01}: Firm age has no significant effect on financial performance of listed ICT firms in Nigeria. This hypothesis was tested and the result of this regression as exposited on table 2 indicates that the relationship between FA and TQ is positive and significant. This is justified with the P-value (significance) of 0.0000 which is less than the 1% level of significance adopted. Likewise the result of positive coefficient of 1.89 indicates that firm age is a determinant of firm financial performance in Nigeria. We consequently rejected null hypothesis and accepted the alternate hypotheses which connotes that firm age has significant effect on financial performance of listed ICT firms in Nigeria.

H_{02}: Firm leverage has no significant effect on financial performance of listed ICT firms in Nigeria. This hypothesis was tested and the result of this regression as exposited on table 2 indicates that the relationship between FL and TQ is positive and significant. This is justified with the P-value (significance) of 0.0031 which is less than the 1% level of significance adopted. Likewise the result of positive coefficient of 0.39 indicates that the extent to which a firm is been funded by debt ensures firms financial performance in Nigeria. We consequently rejected null hypothesis and accepted the alternate hypotheses which indicates that firm leverage has significant effect on financial performance of listed ICT firms in Nigeria

5. CONCLUSION

The results of the study showed a positive and significant relationship between firm characteristics and financial performance of listed ICT in Nigeria. Therefore, the study concludes that firm characteristics ensure firm financial performance in Nigeria.

5.1 RECOMMENDATION

The study recommends that ICT firms in Nigeria should adopt strategic capital structure decisions that can improve operational efficiency to achieve higher performance.

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