

FIRM CHARACTERISTICS AND FINANCIAL DISTRESS OF LISTED SERVICES COMPANIES IN NIGERIA

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ABSTRACT

This study investigated the effect of firm characteristics on financial distress of listed services companies in Nigeria. The specific objectives of this study were to investigate the effect of assets tangibility, liquidity, financial leverage and operating capacity on Springate S Score of listed services companies in Nigeria. The study adopted Ex-post facto research design. The population of study consisted of twenty-one (21) listed services companies and it was sampled to eleven (11) using purposive sampling technique in selecting eleven (11) due to availability and completeness of data for the period under study. A cross sectional panel secondary data covering the period of ten years (2014-2023) was extracted from the audited financial statement of eleven (11) services companies listed on the floor of Nigerian exchange group. The method of data analysis was Descriptive Statistics, Augmented Dickey Fuller (ADF), Unit Roots Tests, VAR Lag Order Selection Criteria, Co-Integration, Autoregressive Distributed Lag (ARDL) model, Residual Diagnostic Tests, Wald Test with the help of E-view v10. The findings demonstrate that assets tangibility has positive and significant effect on Springate S-score financial distress of listed services companies in Nigeria in the long run, but in term of short run, assets tangibility has negative and insignificant effect on Springate S-score financial distress of listed services companies in Nigeria. Liquidity has positive and significant effect on Springate S-score financial distress of listed services companies in Nigeria in the long run, but in term of short run, assets tangibility has negative and insignificant effect on Springate S-score financial distress of listed services companies in Nigeria. Financial leverage has negative and insignificant effect on Springate S-score financial distress of listed services companies in Nigeria in the long run, but in term of short run, financial leverage has positive but insignificantly affect on Springate S-score financial distress of listed services companies in Nigeria. Operating capacity has negative but significantly affect on Springate S-score financial distress of listed services companies in Nigeria in the long run, but in term of short run, operating capacity has positive but insignificantly affect on Springate S-score financial distress of listed services companies in Nigeria. According to the empirical findings, this study generally concluded that there is significant effect of firm characteristics on financial distress of listed services companies in Nigeria from 2014 to 2023 in the long run while there is an insignificant effect of firm characteristics on financial distress of listed services companies in Nigeria from 2014 to 2023 in the short run. The study recommended amongst others that Firms should adopt strategic financial management practices aimed at increasing assets tangibility, such as effective cost management, revenue diversification, and operational efficiency in order to reduce financial distress.

Keyword: Firm Characteristics, Operating capacity and Springate S-score financial distress

INTRODUCTION

The service sector is considered as one of the fundamental engine of modern economy. The sector serves as a vehicle for the rendering of services, and it generating employment and improvement of revenue to national gross domestic product. In developed countries, the service sector contributes a significant part to economic growth and development. For example, in the US, the service sector contributed 76.4% to economic growth and development. In Japan, the service sector contributed 49.4% to economic growth and development. In the UK, the service sector contributed 83% to economic growth and development. In China, the service sector contributed 56.7% to economic

growth and development. In Africa countries, In Kenya, the service sector contributed 62.7% to economic growth and development. In South Africa, the service sector contributed 62.6% to economic growth and development. But in Nigeria, the service sector contributed 58.7% to economic growth and development. This percentage is far below what is happening in rich and industrialized nations. The Nigeria service sector has been relatively low compare to competitive Africa countries like South Africa and Kenya. This low contribution of Nigeria service sector to the economy could be attributed to financial distress that frequently occur in Nigeria. The reality is that most of the listed services companies have failed to impress investors. They are either reporting weak earnings, bad corporate governance, inconsistent dividend/bonus pay out or poor investor relation handling (Appah et al., 2024).

Firms' specific factors or characteristics are the various resource-based corporate elements that drive the operations, performances and level of a firm's efficiency. Value creation capability and consistency of returns being generated periodically, firms' characteristics are specific factors that exert controlling influence on the performance of the firm both in the short, medium and long-terms of the business organizations. Hence, firms' characteristics are specific internal resource-based corporate elements, factors, elements, traits, peculiarities and features that enhance a firm's smooth functioning, operations, performance and growth sustainably, thereby differentiating a firm from others across industries. They could also be categorized into firm structure (firm size and leverage), performance (profitability, liquidity and growth) and monitoring (board composition and institutional shareholding) attributes (Ememobong et al., 2023). Osemwegie-Ero et al. (2024), categorize firm characteristics into financial (firm size, growth, risk, liquidity, tangibility and leverage) and non-financial (firm age, management competencies and scope of operation) characteristics. Akwuobi et al. (2025) examined the effect of firm attributes on systemic risk of listed consumer and industrial goods firms in Nigeria. The findings revealed that, firm size has a significant negative effect on the systematic risk; liquidity has a significant positive effect on the systematic risk. In conclusion, while larger firms are better equipped to manage market fluctuations, firms with higher liquidity are more vulnerable to market volatility. Chinda and Benedict (2025) studied impact of firm characteristics on social and environmental accounting disclosure quality: A study of listed non-service companies in Nigeria. The findings revealed that firm age, size, and performance positively and significantly influenced social and environmental accounting disclosure quality while firm leverage showed no substantial impact. Akininyi et al. (2025) studied the effect of firms' attributes on audit fees of financial service firms in Nigeria. 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. Odoemelam et al. (2025) studied firm attributes and share price of quoted firms in Nigeria: Analysis of investors' evaluations of financial and non-financial sectors. The findings indicated that EPS and firm size significantly and positively influence share price, indicating investor preference for profitability and company scale. In contrast, audit firm size, firm age, leverage, and industry type show no significant effect, suggesting they are not primary drivers of stock performance. Idogho et al. (2024) examined the impact of firm characteristics and profitability of listed industrial goods companies in Nigeria. The results show that liquidity has a negative and significant effect on profitability. Conversely, leverage and firm age have a positive and insignificant impact on profitability. In evaluating the moderating effect of firm size, the panel regression results conclude that firm age can reduce profitability. However, the analysis also revealed that liquidity has a positive and insignificant effect on profitability when moderated by firm size while leverage has a negative and insignificant result on profitability. On the other hand, firm size significantly moderates the relationship between firm characteristics and profitability. James et al. (2024) investigated the effect of firm attributes on financial performance of listed Deposit Money Banks (DMBs) on the Nigerian Exchange Group (NGX). The results of the study suggested that leverage and board size inversely and significantly affect financial performance of listed DMBs on the NGX, while firm size inversely and insignificantly affect financial performance of listed DMBs on NGX. The findings of the study

also revealed that the interaction of leverage and board size positively and significantly affect financial performance of listed DMBs on the NGX. Christopher et al. (2024) examined how firm characteristics moderate the relationship between corporate sustainability reporting and financial performance of companies listed at the Nairobi Securities Exchange. The study established that firm size has a statistically positive moderation effect on the relationship between the corporate sustainability reporting and the ROA. Additionally, the study also found out that the firm age has a statistically negative moderation on the corporate sustainability reporting-ROA relationship.

Statement of the Problem

A competitive and globalized business environment will only ensure the fittest firms will survive and the number of firms that faced financial distress will end up in corporate failure and total shutdown. It must be noted that, there are empirical studies on financial distress but the issues of firm failure predictions are far from resolved. Appah et al. (2024) stated that the problem is partially due to the nature of research findings from developed economies that cannot be generalized to different economic environments such as emerging markets like Nigeria. They also stated that dissimilarity in market structure, provision and implementation of law and accounting standards make it complicated to apply developed-economy prediction models in developing economies. Odoemelam et al. (2025) provided four causes of business failures: excessive competition, unprofitable expansion, cessation of public demand for the companies' products or services, and excessive payment of capital charges. Tekalign et al. (2024) stated that firms in financial distress has gone through four stages of deterioration before declaring bankruptcy, which are incubation, cash shortage, financial insolvency and total insolvency.

The empirical studies on firm characteristics and financial distress presented diverse and disaggregated results. Studies such as Akwuobi et al. (2025), Appah et al. (2024), Tekalign et al. (2024), Samow and Oluoch (2023), Kamau et al. (2023), Monir et al. (2023), Rafatnia et al (2020), Elok and Erlina (2020) showed different outcomes. It remains unclear the explanations empirical results often show varying outcomes. These conflicting outcomes reveal that firm characteristics and financial distress is still inconclusive. The inconclusive outcomes have made the debate open to future research. The gap in terms of time, location, literature and methodology are also a contributory reason to the differences in the various outcomes of the effect of firm attributes and financial distress. Following the above listed gap created by the prior studies in the light of mixed perspectives in research outcomes by different scholars, this study will fill the gap by adopting services companies in carrying out firm characteristics and financial distress in Nigeria. To the best of my knowledge, none of these studies attempted to ascertain the effect of firm characteristics on financial distress of listed services companies in Nigeria. Also, this study expands on prior research by updating the data to 2023 and by using a more robust statistical tool. Hence, the aim of this study was to investigate the effect of firm characteristics on financial distress of listed services companies listed on the Nigeria Exchange Group (NGX) from 2014 to 2023.

Conceptual Framework

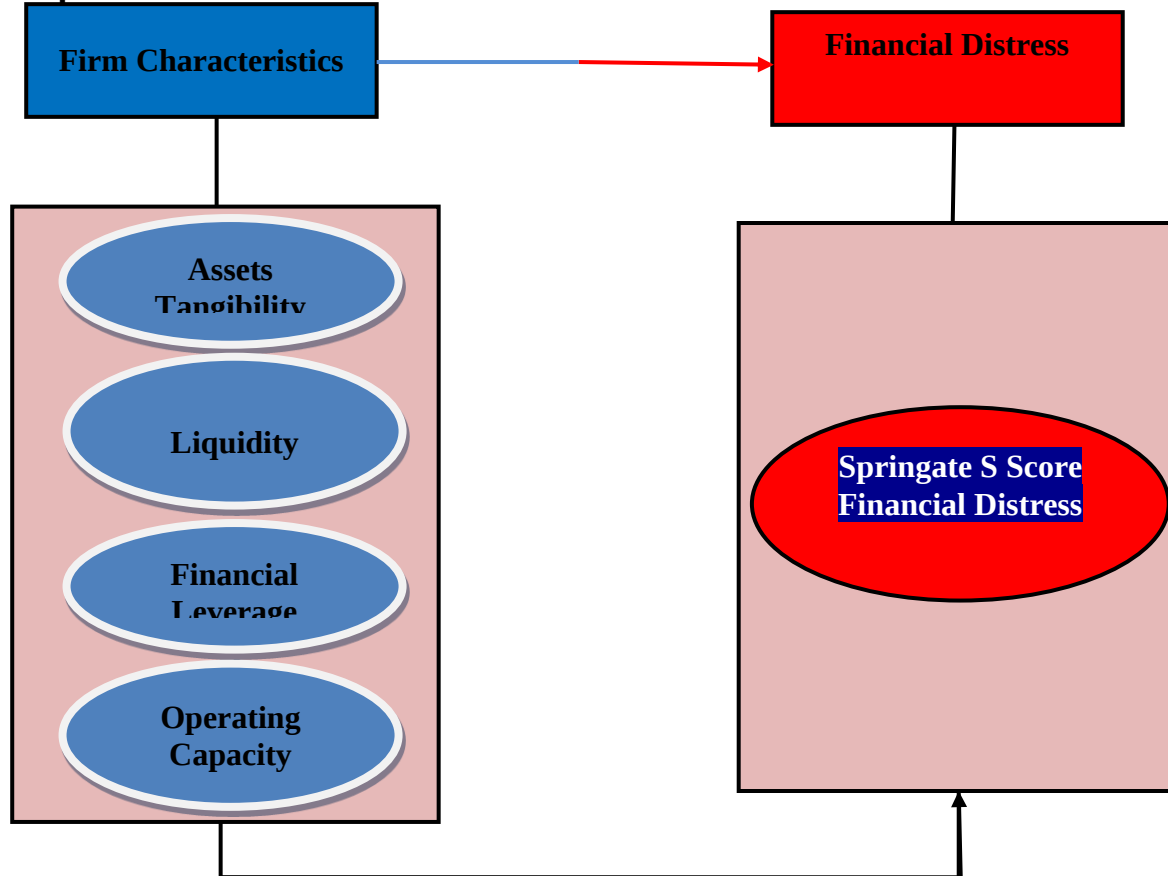


Figure 1: Conceptual framework showing the dimensions of firm characteristics and measure of financial distress

Sources: Akwuobi et al. (2025), Appah et al. (2024), Tekalign et al. (2024), Samow and Oluoch (2023), Kamau et al. (2023), Monir et al. (2023).

Aim and Objectives of the Study

The aim of this study was to investigate the effect of firm characteristics on financial distress of listed services companies in Nigeria. The specific objectives are:

1. determine the effect of assets tangibility on Springate S score financial distress of listed services companies in Nigeria.
2. investigate the effect of liquidity on Springate S score financial distress of listed services companies in Nigeria.
3. examine the effect of financial leverage on Springate S score financial distress of listed services companies in Nigeria.
4. evaluate the effect of operating capacity on Springate S score financial distress of listed services companies in Nigeria.

Research Questions

The following research questions were answered in this study:

1. What is effect of assets tangibility on Springate S score financial distress of listed services companies in Nigeria.
2. How does liquidity affect Springate S score financial distress of listed services companies in Nigeria?

3. What is the effect of financial leverage on Springate S score financial distress of listed services companies in Nigeria?
4. What is the effect of operating capacity on Springate S score financial distress of listed services companies in Nigeria?

Research Hypotheses

The following null hypotheses were tested in this study:

- Ho₁:** The effect of assets tangibility on Springate S score financial distress of listed services companies in Nigeria is not significant.
- Ho₂:** The effect of liquidity on Springate S score financial distress of listed services companies in Nigeria is not significant.
- Ho₃:** The effect of financial leverage on Springate S score financial distress of listed services companies in Nigeria is not significant.
- Ho₄:** The effect of operating capacity on Springate S score financial distress of listed services companies in Nigeria is not significant.

REVIEW OF RELATED LITERATURE

Conceptual Review

Firm Characteristics

Ali and Isa (2018) defined firm characteristics as firm specific features that distinguish one firm from another. These firm characteristics distinguishes a corporate organization from others, they includes, firm size, leverage policy, performance, firm age, firm growth, management efficiency, firm stability etc. These features can influence the level of performance, decision and operations of firms. A high performing firm with high turnover will require higher level of operation (high inventory, processing and cash) to meet its customers demand. Thus, a firm with high level of turnover, in other to meet its obligations will tends to maintain such level of resources which may be different from others, especially current assets (Obaje et al., 2023).

Assets Tangibility: Asset tangibility is important in a company's financial structure and investment decisions. Tangible assets can be used as collateral to get loans or obtain lender financing (Myers, 1984). Lenders frequently prefer tangible assets as collateral because they are easier to value and may be seized and sold in the event of a default. The tangibility of assets can influence a company's risk profile and borrowing rates. Lenders may regard firms with larger levels of tangible assets as less risky since these assets provide a cushion in the case of financial trouble or default (Modigliani & Miller, 1958). As a result, organizations with more tangible assets may have lower borrowing costs than enterprises with mostly intangible assets. An entity with a significant number of tangible assets can borrow at a lower interest rate by providing lenders with the security of these tangible assets. According to Effiong and Eno (2024), the tangibility of assets has a significant impact on the costs of financial distress. They claim that tangible assets are easier to collateralize and suffer less value loss when enterprises fail, implying that firms with more tangible assets will use more debt in their capital structure. Similarly, Appah et al. (2024) observed that if a high proportion of a firm's assets are tangible, then those assets should serve as collateral, reducing the danger of the lender incurring debt agency costs (risk shifting). Assets should also hold higher value when liquidated. As a result, the bigger the share of physical assets on the balance sheet, the more ready lenders should be to make loans, and leverage should be higher.

Liquidity: Liquidity means the ability of an organization to realize value in money the post liquid among all assets. It implies conversion of assets into cash during the normal course of business and to have regular uninterrupted flow of cash to meet outside current liabilities as and when due and to ensure availability of money for day-to-day business operations (Ayuba & Mathias, 2023). The concept of liquidity in case of companies has two dimensions; the quantitative and qualitative. The

quantitative aspect includes the quantum, structure, and utilization of liquid assets. The qualitative aspect emphasizes upon the ability of a firm to meet all present and potential demand on cash in a manner that minimize cost and maximize the value of the business. The International Financial Reporting Standards (2016) defines liquidity as the available cash for the near future, after considering the financial obligations corresponding to that period. Firm can use liquid assets to finance its activities and investments when external finances are not available. However, higher liquidity can allow a firm to deal with unexpected contingencies and to cope with its obligations during periods of low earnings.

Financial Leverage: Financial leverage is a measure of how much a corporation used equity and debt to finance its business. Both debt and equity may be used by a business to finance its investments. Preference capital is another option available to the business. Despite what the ROA of the business is, the interest rate on the debt is always fixed. Financial leverage is incorporated in a firm when trying to outperform its costs on the fixed charges funds. Financial leverage rises as debt increases and in using financial leverage, a company's main aim is to increase the return to shareholders in favorable economic conditions (Eneh et al., 2024). Appah et al. (2024) study indicates that leverage is the key factor influencing financial distress. The firm leverage which gives an indication on the amount of debt used by the firm is measured as the ratio of total debt to total equity. A number of previous studies on financial leverage and financial distress have produced mixed findings.

Operating Capacity: Operations capabilities or first-order a capability is defined as capabilities that enable a manufacturing company to work in the present. Operations capabilities are well established in the operations management literature and are measured in terms of quality, cost, flexibility and delivery. Operations capabilities are not directly measurable. A capability is an ability to undertake an activity. Only after the activity is performed can it be observed, and its results assessed. According Appah et al., (2024), it is absolutely necessary to clearly define constructs in order to study relationships. Nevertheless, this is also not an easy task, because there is still a lack of consensus about what constitutes dynamic and operating capabilities. Operating capacity evaluates the firm's dimensions to carry out daily activities. The higher the firm's asset turnover rate shows that the firm has efficiently employed its assets in producing sales revenue. It means that the firms' management attempts to maximize their performance to decrease financial distress.

Financial Distress

According to Kazemian et al. (2017) financial distress, firms are firms that encounter numerous financial problems and have a weak financial performance. Furthermore, Wesa and Otinga (2018) noted that financial distress firms are usually faced with two possible major problems either they are experiencing cash shortage on the asset side or overdue obligation on the liabilities sides of the statement of financial position. According to Wesa and Otinga (2018), financial distress means that financial difficulties experienced by firms in maintaining their normal operations. The authors further noted that these are events preceding and including bankruptcy. This is a condition when a company cannot meet (or has difficulties paying off) its financial obligations to its creditors. It occurs when operating cash flows are not sufficient to satisfy current obligations and firms are forced to take corrective actions. The value of any company reduces through the costs it undergoes during the period of distress. Financial distress is a situation in which a company experiences a decline in financial conditions before bankruptcy. According to Kazemian et al. (2017) financial distress affects an organization profitability and it operates via its cost implication such as legal cost and administrative cost which is often linked with bankruptcy cost (that is, direct financial cost) and increased cost for supplies and debt (indirect financial distress cost). The implication of these cost (direct and indirect financial distress cost) lowers the market value of firms (Fredrick (2019).

Springate S-Score Financial Distress

The Springate method is a model using Multiple Discriminate Analysis (MDA) that requires more than one financial ratio relating to a company's bankruptcy to form a good model (Supitriyani & Khairul, 2022). Springate score is a method of predicting the survival of a company by combining several common financial ratios with different weights from one another.. The Springate model uses 19 financial ratios, after retesting, Springate finally chose 4 ratios used in determining the criteria for companies included the category of healthy companies or potentially bankrupt companies (Emmelia & Tri, 2020). Research conducted by Gordon. Springate in 1978 to find a model that can be used in predicting the potential (indication) of bankruptcy. After going through the statistical tests of multiple discriminant analysis similar to what Altman did in 1968, which distinguishes between companies that went bankrupt and those that did not go bankrupt. Ben et al (2015) conducted a study on the springate model with partial test results that EBIT / TA, EBT / CL and SA / TA influenced financial distress and simultaneously all variables influenced financial distress.

The second financial distress measurement is Springate S Score which is defined as follows:

$$S \text{ Score} = 1.03 * X1 + 3.07 * X2 + 0.66 * X3 + 0.4 * X4$$

Where:

X1 = Working capital/Total assets,

X2 = Earnings before Interest and Taxes/Total Assets,

X3 = Earnings before taxes/ short term liabilities,

X4= Sales/ Total Assets

If S Score of a firm is below 0.862, the probability of financial distress and bankruptcy is higher. However, if S Score is above 0.862, financial distress probability is lower.

Theoretical Review

Signaling Theory

This theory was developed and stated vividly by Spence (1973). Signalling theory is concerned with understanding why certain signals are reliable and others are not in terms of decision-making using accounting factors provided on published financial statements. The theory points at the quality and reliability of accounting information sent by entities to its users of accounting information for investment decision making. Spence (1973) suggested that a well performing firm distinguishes itself from the nonperforming one by sending a credible signal about its performance to capital markets and as well as potential investors. Signals sent by a firm are the results of its operating activities which would inform investors about the company's prospects. The theory assumed that managers and shareholders of a company differ in terms of getting access to some vital information about firm operation. Some information can only be accessed by the managers while the shareholders do not have access to such information. The essence of this theory in this study is to support the influence of firms' characteristics represented by profitability and firm size on value of quoted manufacturing companies in Nigeria. This is because the quality of accounting information of an entity is reflected on the attributes such as profitability and firm size of the company (Spence, 1973; Nduonofit et al., 2023). Also, effective management would enable a company to maximize its profits and thereby leading to an improvement in firm's financial performance and market value which by implication is showing a good signal to both existing and potential investors that the company can continue to operate in line with the going concern status of accounting and as well as satisfying the interest of its stakeholders through wealth maximization.

This theory is related to the present study because firms' characteristics reported on financial statements of listed companies usually sent signals of operation to the numerous investors. The signals are information that could guide both existing and potential investors in their decisions about investing activities. The argument of this theory is relevant to this study because it holds that accounting information sends signal to the market which influences the investment decisions. This

decision is reflected in the price of shares, which is an element of market value of listed services entities. Thus, signaling theory is adopted in this study.

Empirical Review

Akinninyi et al. (2025) studied the effect of firms' attributes on audit fees of financial service firms in Nigeria. The specific objectives was 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, and which comprising 165 firm-year observations. The study employed 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 recommended 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.

Odoemelam et al. (2025) studied firm attributes and share price of quoted firms in Nigeria: Analysis of investors' evaluations of financial and non-financial sectors. The specific objectives was to examines the impact of firm age, audit firm size, earnings per share (EPS), firm size, leverage, and industry type on stock valuation. The study used a panel dataset of 1,800 firm-year observations (2006–2023), the study applies the Fixed Effects Model (FEM) based on the Hausman specification test. Diagnostic tests, including multicollinearity and robustness checks, ensure result validity with the help of E-Views 13. The findings indicated that EPS and firm size significantly and positively influence share price, indicating investor preference for profitability and company scale. In contrast, audit firm size, firm age, leverage, and industry type show no significant effect, suggesting they are not primary drivers of stock performance. However, the interaction between firm size and industry type negatively affects share price, highlighting sectoral differences. It was suggested that the findings provide valuable insights for investors, corporate managers, and policymakers on stock valuation and regulatory strategies. It underscores the importance of financial performance indicators while advocating sector-specific policies to improve market efficiency.

Babalola et al. (2025) studied the effect of firm attributes and board structures on financial distress of non-financial firms in Nigeria. The system-generalised method of moments (SGMM) model was used in the research to investigate the impact of firm characteristics (such as leverage, profitability, and sales growth) and board structures (such as board size and independence) on the degree of financial distress experienced by a sample of listed twenty non-financial companies in Nigeria between the years 2011 and 2023. The findings showed that board structure (both size and independence) and firm attributes (leverage profitability and sales growth) significantly impact the Altman Score, indicating better financial health or lower financial distress. Nigerian publicly traded firms should adhere to and practice excellent corporate governance procedures. It was suggested that businesses must place a larger emphasis on financial information, particularly profitability and sales growth, all of which have been shown to affect financial distress.

Nkasi and Mide (2025) examined the relationship between firm attributes and financial performance of listed manufacturing companies in Nigeria. A longitudinal research design and a fixed-effects regression model were employed for data analysis. The study analyzes financial data of the manufacturing companies between 2015-2023, which allows for observing trends and firm-level variations over time. The research design was chosen to control for unobserved heterogeneity across firms, ensuring that the results reflect the true relationships between the variables rather than being

influenced by individual firm characteristics. The findings of the study reveal that firm size has a significant positive effect on ROA, indicating that larger firms generally achieve higher profitability, likely due to broader market reach and operational efficiencies. Liquidity exhibits a positive and significant effect on ROA, suggesting that firms with sound liquidity are better positioned to handle liabilities and enhance returns. The study concludes that optimal firm size, prudent debt management, and efficient liquidity practices are essential for strengthening financial performance in Nigeria's manufacturing sector. Recommendations of the study include strategic expansion, cautious debt use, and robust liquidity management to improve profitability and accounting resilience.

Oladapo et al. (2025) studied the effect of firm's attribute on value relevance of accounting information of quoted manufacturing companies in Nigeria. The specific objectives was to an empirical analysis of how various characteristics of firms influence the value relevance of accounting data among listed manufacturing companies in Nigeria, covering a timeframe from 2017 to 2023. The research sample comprises ten companies, with the firm attributes examined including size, age, leverage, and the count of institutional stakeholders. Book value serves as the indicator of value relevance in accounting information. The study used panel regression analysis conducted through EViews. The study establishes a positive correlation between firm attributes and the value relevance of accounting information. The significant findings include the positive impact of firm size on value relevance, coupled with a considerable negative influence attributed to firm age. Furthermore, while leverage's effect remains negative and statistically insignificant, the number of institutional investors emerges as a significant positive factor. The research concludes that larger firms typically enjoy higher book values, older firms face performance challenges, and institutional investors provide crucial oversight that protects other shareholder interests. The recommendations suggest that publicly listed manufacturing companies in Nigeria should aim to decrease their leverage and enhance equity financing options to alleviate the financial burdens incurred from external debt.

Idogho et al. (2024) examined the impact of firm characteristics and profitability of listed industrial goods companies in Nigeria. As a moderating factor, firm characteristics were represented by liquidity, leverage, and firm age, while the return on assets measured profitability. The study data was collected from ten listed industrial goods firms that had consistently published their audited annual financial reports from 2013 to 2022. The panel-corrected standard error for the random effect model was used to analyze the data. The results show that liquidity has a negative and significant effect on profitability. Conversely, leverage and firm age have a positive and insignificant impact on profitability. In evaluating the moderating effect of firm size, the panel regression results conclude that firm age can reduce profitability. However, the analysis also revealed that liquidity has a positive and insignificant effect on profitability when moderated by firm size while leverage has a negative and insignificant result on profitability. On the other hand, firm size significantly moderates the relationship between firm characteristics and profitability. The findings of the study recommend that younger listed industrial goods firms should not be discouraged by the negative effect of their age on profitability rather they may be profitable as they grow old.

James et al. (2024) investigated the effect of firm attributes on financial performance of listed Deposit Money Banks (DMBs) on the Nigerian Exchange Group (NGX). Specifically, the study sought to examine the effect of firm size, leverage, board size as well as the interaction of firm size and leverage, firm size and board size, leverage and board size on financial performance of listed DMBs on NGX. The study adopted the ex-post facto research design. Samples of 12 banks from a population of 14 DMBs listed on the NGX using the filtering method were used. Data were sourced from Machameratios and annual reports of the sampled banks listed on the NGX. The study period covered ten (10) years from 2012-2021. Random effect model was used for data analysis based on

the recommendation of the Hausman Specification test and Breusch/Pagan Lagrangian multiplier test. The results of the study suggested that leverage and board size inversely and significantly affect financial performance of listed DMBs on the NGX, while firm size inversely and insignificantly affect financial performance of listed DMBs on NGX. The findings of the study also revealed that the interaction of leverage and board size positively and significantly affect financial performance of listed DMBs on the NGX. The study, therefore, recommended that listed DMBs on the NGX seeking for enhanced financial performance should place more emphasis on leverage and board size by employing a higher proportion of debt to equity in their capital formation and also maintaining a higher board size which avails the opportunity of variety of expertise that can enhance performance.

METHODOLOGY

Research Design: In line with the problem and objective of this study, the appropriate research design for this study was ex-post facto research design. The ex-post facto research design which relies on already existing information and compares the characteristics of variables in a study was used in a positivist philosophical context. In the ex post research design, the study variables cannot be manipulated by the researcher because they are selected after the occurrence of the event of interest, and the groups of variables are matched to determine the nature of relationship between or effect of the variables (Okoba & Chukwu, 2023).

Population and Sampling Technique: The population of the study consisted of twenty-one (21) services companies listed on the floor of the Nigerian Exchange Group as at 31st December 2024.

Table 1: presents a comprehensive list of the population members.

Table 3.1: List of Services Companies listed in Nigeria Exchange Group

<i>S/N</i>	<i>Name of Companies</i>	<i>Sub-Sector</i>	<i>Date Listed</i>	<i>Date Incorporated</i>
1.	Academy Press Plc.	Printing/Publishing	June 15, 1965	July 28, 1964
2.	Afromedia Plc	Advertising	May 18, 2009	Oct 28, 1959
3.	Associated Bus Company Plc	Road Transportation	Dec 20, 2006	April 5, 1993
4.	C & I Leasing Plc.	Support and Logistics	Dec 1, 1997	Dec 28, 1990
5.	Caverton Offshore Support Group Plc	Support and Logistics	February 6, 2014	June 2, 2008
6.	Daar Communications Plc	Media/Entertainment	-	August 31, 1988
7.	Eunisell Interlinked Plc	Specialty	Nov 13, 1993	Nov17, 1981
8.	Ikeja Hotel Plc	Hotel/Lodging	Sept 6, 2007	Nov18, 1972
9.	Juli Plc	Food/Drug Retailer and Wholesales	July 11, 1986	September 14, 1972
10.	Learn Africa Plc	Printing/Publishing	-	October 8, 1961
11.	Medview Airline Plc	Airlines	-	August 11, 2004
12.	Nigerian Aviation Handling Company Plc	Transport Related Services	November 27, 2006	April 8, 2005
13.	R T Briscoe Plc.	Automobile/Auto Part Retailer	March 15, 1974	March 9, 1957
14.	Red Star Express Plc	Carrier/freight/Delivery	Nov 14, 2007	July 10, 1992
15.	Secure Electronic Technology Plc	Specialty	-	January 3, 2000
16.	Skyway Aviation Handling Company Plc	Transportation Related Services	April 26, 2019	April 22, 2009
17.	tantalizers plc	Hospitality	-	May 4, 1997
18.	The Initiates Plc	Waste Management	Oct 25, 2016	March 3, 1995

19.	Trans-Nationwide Express Plc.	Carrier/freight/Delivery	Sept 7, 1992	March 28, 1984
20.	Transcorp Hotels Plc	Hotel/Lodging	Jan 15, 2015	July 12, 1994
21.	University Press Plc	Printing/Publishing	Aug 14, 1978	August 14, 1978

Source: www.gxgroup.com.ng

A purposive sampling technique was employed to select a sample size of eleven (11) listed services companies from a population of twenty-one (21) services companies in the Nigeria Exchange Group. This sampling approach enables the selection of companies that possess complete data for the period spanning from 2014 to 2023, as well as companies that were listed before the 2014 accounting period. These services companies were surveyed and data analyzed over a ten-year (10) period, yielding a total of 110 firm-year observations.

Table 2: Measurement of Variables

Variables	Type of Variable	Symbo l	Measurement	A priori expectation	Sources
Springate S-Score Financial Distress	Dependent Variable	SSS	$1.03 \times X1 + 3.07 \times X2 + 0.66 \times X3 + 0.4 \times X4$	It is expected to have a both positive and negative effect	Akwuobi et al. (2025), Appah et al. (2024), Tekalign et al. (2024),
Assets Tangibility	Independent Variable	ATAN	Non-current assets/Total Assets	It is expected to have a positive effect	Appah et al. (2024), Wesa and Otinga (2018)
Financial Leverage	Independent Variable	FIL	Total Debt/Total Equity	It is expected to have a both positive and negative effect	Samow and Oluoch (2023), Kamau et al. (2023), Monir et al. (2023)
Liquidity	Independent Variable	LIQ	Current Assets/Current Liability	It is expected to have a positive effect	Akwuobi et al. (2025), Appah et al. (2024), Tekalign et al. (2024)
Operating Capacity	Independent Variable	OPC	Sales/Total Assets	It is expected to have a positive effect	Wesa and Otinga (2018); Heniwati & Essen (2020)

Source: Researchers Compilation (2025)

Model Specification: There are a number of factors that can influence firm characteristics and financial distress. The factors to be used for analysis in this research study include assets tangibility, financial leverage, liquidity and operating capacity which are categorized as the predictor variable; whereas Springgate S-score financial distress are categorized as the criterion variables. The moderating variable of the study was effective tax rate which was presented by effective tax rate. However, panel Autoregressive Distributed Lag (ARDL) method was applied in the analysis. The model used for this study was adapted from Appah et al, (2024) where it was written as:

Model I: Altman Z- score Financial Distress (SSS) Model

$SSS = f(ATAN, LIQ, FIL, OPC)$ i

This can be written in Panel ARDL form as:

$$SSS_{it} = a_0 + \beta_0 + \beta_1 ATAN_{it} + \beta_2 LIQ_{it} + \beta_3 FIL_{it} + \beta_4 OPC_{it} + \varepsilon \dots \dots \dots (ii)$$

$a_1 > 0; a_2 > 0; a_3 > 0; a_4 > 0;$

Method of data analysis: The statistical tools used for the study includes; Descriptive statistics, Augmented Dickey Fuller (ADF), Unit Roots Tests, VAR Lag Order Selection Criteria, Co-Integration, Autoregressive Distributed Lag (ARDL) model, Residual Diagnostic Tests, Wald.

RESULTS AND DISCUSSIONS

Table 3 Descriptive Statistics of the Variables

	SSS	ATAN	LIQ	FIL	OPC
Mean	0.794042	0.548421	1.545716	1.980179	0.691813
Median	0.737423	0.525462	1.384626	1.065459	0.597323
Maximum	3.512692	0.954814	5.542622	43.84075	1.920986
Minimum	0.015243	0.133128	0.149566	0.143091	0.087262
Std. Dev.	0.540391	0.224005	1.077925	4.312003	0.402168
Skewness	1.440703	0.025931	1.147240	8.492556	0.650324
Kurtosis	3.570401	2.055008	4.524991	82.34227	2.881772
Jarque-Bera	3.798824	4.105294	34.78857	30175.25	5.817617
Probability	0.204325	0.128395	0.000000	0.000000	0.050064
Sum	87.34466	60.32629	170.0288	217.8197	76.09940
Sum Sq. Dev.	31.83046	5.469445	126.6494	2026.677	17.62960
Observation					
s	110	110	110	110	110

Source: Researcher computation (2025) using E-views 10

The results in Table 3 proved the descriptive statistics results of firm characteristics variables represented as assets tangibility (ATAN), liquidity (LIQ), financial leverage (FIL); and operating capacity (OPC). The dependent variable financial distress measure Springate S-score (SSS). The results proved that dependent variable Springate S-score (SSS) discovered a Mean 0.794042 with a Minimum to Maximum values of 0.015243Mini to 3.512692Max. The independent variables assets tangibility (ATAN), liquidity (LIQ), financial leverage (FIL), and operating capacity (OPC) proved a Mean values 0.548421, 1.545716, 1.980179 and 0.691813 with a Minimum to Maximum values of 0.133128Mini to 0.954814Max, 0.149566Mini to 0.9548145Max, 0.143091Mini to 43.84075Max and 0.087262Mini to 1.920986Max respectively for the time period investigated. From the result above, it is proved that financial leverage (FIL) has the highest Mean value, minimum and maximum fellow by liquidity (LIQ), operating capacity (OPC) and assets tangibility (ATAN). Furthermore, the Mean and standard deviation values for all the variables are clear indications that the variables are not constant over time. The skewness statistics indicated that AZ, SSS, ATAN, FIL, LIQ and OPC variables that represented firm characteristics are positively skewed which shown the variables has a long right tail. The Jarque-Bera test statistic is used to ascertain the difference of the skewness and kurtosis of the series with those from the normal distribution. The null hypotheses of the Jarque-Bera test statistics proved that the variables liquidity (LIQ) and financial leverage (FIL) are not normally distributed. This implied that their corresponding probability value was less than 5% significant level and it is clearly leptokurtic while assets tangibility (ATAN) and operating capacity

(OPC) are normally distributed. This implied that their corresponding probability value was greater than 5% significant level and it is clearly mesokurtic.

Table 4 Summary of Unit Roots Test Result

Order of integration	Variable	ADF FISHER				Remark
		ADF - Fisher Chi-square Statistics	ADF - Fisher Chi-square Prob	ADF - Choi Z-stat Statistics	ADF - Choi Z-stat Pro	
Level	SSS	39.4172	0.0126	-2.27826	0.0114	Stationary
1 st difference	-	-	-	-	-	1(0)
Level	ATAN	20.9930	0.5212	0.15568	0.5619	Stationary
1 st difference	D(ATAN)	52.9521	0.0002	-3.51231	0.0002	1(1)
Level	LIQ	44.8315	0.0028	-3.13212	0.0009	Stationary
1 st difference	-	-	-	-	-	1(0)
Level	FIL	31.3445	0.0893	-1.43862	0.0751	Stationary
1 st difference	D(FIL)	59.4897	0.0000	-4.13731	0.0000	1(1)
Level	OPC	46.5874	0.0017	-3.26784	0.0005	Stationary
1 st difference	-	-	-	-	-	1(0)

Source: Researcher computation (2025) using E-views 10

Results for the ADF test are presented in Table 4. At level form, SSS is stationary as shown by its t statistic -2.27826 and it is confirmed by the p-value 0.0114 which is less than 0.05 leading to the rejection of the null hypothesis that there is a unit root in the series. Similarly, LIQ, OPC is also stationary at level form with a t – value of -3.13212, -3.26784, -2.29951 and it is confirmed by the p-values of 0.0009, 0.0005, 0.0107 is below 0.05 which validates the rejection of the null hypothesis that a unit root exists and conclude that LIQ, OPC is stationary at level form. On the other hand, ATAN and FIL which are both non-stationary at level form as evidenced by their p-values of 0.5619 and 0.0751 respectively, which are greater than 0.05. After first differencing, however, both became stationary with p-values of 0.0002 and 0.0000 which is less than 0.05. This makes the ARDL method applicable to estimate the financial distress and firm characteristic model since the variables are integrated of orders zero and one.

Table 5. VAR Lag Order Selection Criteria (SSS) Model

Endogenous variables: SSS ATAN LIQ FIL OPC

Exogenous variables: C

Date: 03/22/25 Time: 03:09

Sample: 2014 2023

Included observations: 99

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-675.1165	NA	0.038108	13.75993	13.91721	13.82357
1	-467.3832	386.0902*	0.001188*	10.29057*	11.39153*	10.73602*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Researcher computation (2025) using E-views 10

From the result presented in table 5, the appropriate lag length for this model is one, since all the criteria for selecting optimum lag length choose one as the lag length. Thus, Akaike information criterion was used in this study in SSS Model.

Co-integration Test

Following the findings in table 6 that the model is $I(0)$ and $I(1)$ series, a co-integration test was conducted to determine the existence of a long run relationship. The study employs the Peter Pedroni residual cointegration test due to its ability to estimate panel data.

Table 6: Pedroni Co-Integration Test Results SSS) Model

Pedroni Residual Cointegration Test

Series: SSS ATAN LIQ FIL OPC

Date: 03/22/25 Time: 03:33

Sample: 2014 2023

Included observations: 110

Cross-sections included: 11

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

Automatic lag length selection based on SIC with a max lag of 0

Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)				
			Weighted	
	<u>Statistic</u>	<u>Prob.</u>	<u>Statistic</u>	<u>Prob.</u>
Panel v-Statistic	-1.620685	0.9475	-1.984919	0.9764
Panel rho-Statistic	2.086588	0.9815	3.275951	0.9995
Panel PP-Statistic	-4.780751	0.0000	-2.324875	0.0100
Panel ADF-Statistic	-4.802102	0.0000	-1.777814	0.0377

Alternative hypothesis: individual AR coefs. (between-dimension)

	<u>Statistic</u>	<u>Prob.</u>
Group rho-Statistic	4.647269	1.0000
Group PP-Statistic	-3.461558	0.0003
Group ADF-Statistic	-1.818439	0.0345

Source: *Researcher computation (2025) using E-views 10*

According to the results in Table 4.6, the co-integration test for the Springate S-score (SSS) model indicates that the null hypothesis of no co-integration in the model was rejected. This is due to the fact that the two of the probability values for both the panel and group PP, Rho, and ADF Statistics are below the 5% level of significance. Therefore, it can be concluded that there is evidence of co-integration in the Springate S-score (SSS) model. Since co-integration is present, a Panel ARDL long run and short run analysis is appropriate for the SSS model.

Estimation of Autoregressive Distributed Lag Model

The long run and short run Panel ARDL analysis was conducted to examine short run and long run effect of the financial distress indicators –Springate S-score (SSS) against firm characteristics dimensions assets tangibility (ATAN), liquidity (LIQ), financial leverage (FIL) and operating capacity (OPC).

Table 7 PMG/ARDL Estimates: Dep. Variable: SSS Model

Dependent Variable: D(SSS)

Method: ARDL

Date: 03/22/25 Time: 04:31

Sample: 2014 2023

Included observations: 110

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): ATAN LIQ FIL OPC

Fixed regressors: C

Number of models evaluated: 1

Selected Model: ARDL(1, 1, 1, 1, 1)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
ATAN	3.177451	0.008066	393.9397	0.0000
LIQ	0.367966	0.000385	955.7487	0.0000
FIL	-9.53E-05	0.000831	-0.114615	0.9093
OPC	-0.412254	0.001061	-388.6411	0.0000
Short Run Equation				
COINTEQ01	-0.878626	0.365452	-2.404215	0.0209
D(ATAN)	-2.211407	2.997328	-0.737793	0.4649
D(LIQ)	-0.064353	0.529556	-0.121522	0.9039
D(FIL)	0.732902	0.649860	1.127785	0.2661
D(OPC)	0.091720	0.417879	0.219489	0.8274
C	-0.857827	0.279024	-3.074381	0.0038
Mean dependent var	-0.002579	S.D. dependent var	0.589436	-
S.E. of regression	0.233721	Akaike info criterion	3.185823	-
Sum squared resid	2.185026	Schwarz criterion	1.467336	-
Log likelihood	245.2203	Hannan-Quinn criter.	2.488796	-

*Note: p-values and any subsequent tests do not account for mode selection.

Source: *Researcher computation (2025) using E-views 10*

Statement of Hypotheses

H₀₁: The extent to which assets tangibility affect Springate S-score financial distress of listed services companies in Nigeria is not significant

Decision Rule: Accept H₀ if P > 0.05. Otherwise reject

In Table 7 the estimated Springate S-score financial distress model results are presented. According to the long-term outcome, the assets tangibility (ATAN) has a positive and statistically significant effect on the Springate S-score financial distress in the long run of listed services companies in Nigeria (Coefficient = 3.177451, t-Statistic = 393.9397, p = 0.000). This indicates that if all other

variables remain constant, a 1% increase in assets tangibility will result in a 3.17% increase in financial distress in the long run of listed services companies in Nigeria. However, according to the short-term outcome, the assets tangibility (ATAN) has a negative and statistically insignificant effect on the Springate S-score financial distress in the short run of listed services companies in Nigeria (Coefficient = -2.211407, t-Statistic = -0.737793, $p = 0.4649$). This indicates that if all other variables remain constant, a 1% increase in assets tangibility will result in a 2.21% decrease in financial distress in the short run of listed services companies in Nigeria. Based on the long run and short run result as estimated in table 7, the study reject the null hypothesis and accept the alternative in the long run while in the short run, we accept the null hypothesis and reject the alternative. Thus, the study concludes that the extent to which assets tangibility affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which assets tangibility affect Springate S-score financial distress of listed services companies in Nigeria is not significant.

Ho₂: The extent to which liquidity affect Springate S-score financial distress listed services companies in Nigeria is not significant

Decision Rule: Accept Ho if $P > 0.05$. Otherwise reject

In Table 7, the estimated Springate S-score financial distress model results are presented. According to the long-term outcome, the liquidity (LIQ) has a positive and statistically significant effect on the Springate S-score financial distress in the long run of listed services companies in Nigeria (Coefficient = 0.367966, t-Statistic = 955.7487, $p = 0.0000$). This indicates that if all other variables remain constant, a 1% increase in liquidity will result in 36% increase in financial distress in the long run of listed services companies in Nigeria. However, according to the short-term outcome, the liquidity (LIQ) has a negative and statistically insignificant effect on the Springate S-score financial distress in the short run of listed services companies in Nigeria (Coefficient = -0.064353, t-Statistic = -0.121522, $p = 0.9039$). This indicates that if all other variables remain constant, a 1% increase in liquidity will result in 6.4% decrease in financial distress in the short run of listed services companies in Nigeria. Based on the long run and short run result as estimated in table 7, the study reject the null hypothesis and accept the alternative in the long run while in the short run, we accept the null hypothesis and reject the alternative. Thus, the study concludes that the extent to which liquidity affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which liquidity affect Springate S-score financial distress of listed services companies in Nigeria is not significant.

Ho₃: The extent to which financial leverage affect Springate S-score financial distress of listed services companies in Nigeria is not significant

Decision Rule: Accept Ho if $P > 0.05$. Otherwise reject

In Table 8, the estimated Springate S-score financial distress model results are presented. According to the long-term outcome, the financial leverage (FIL) has a negative but statistically significant effect on the Springate S-score financial distress in the long run of listed services companies in Nigeria (Coefficient = -9.53E-05, t-Statistic = -0.114615, $p = 0.9093$). This indicates that if all other variables remain constant, a 1% increase in financial leverage will result in a 9.53% decrease in financial distress in the long run of listed services companies in Nigeria. However, according to the short-term outcome, the financial leverage (FIL) has a positive but statistically insignificant effect on the Springate S-score financial distress in the short run of listed services companies in Nigeria (Coefficient = 0.732902, t-Statistic = 1.127785, $p = 0.2661$). This indicates that if all other variables remain constant, a 1% increase in financial leverage will result in a 73% increase in financial distress in the short run of listed services companies in Nigeria. Based on the long run and short run result as estimated in table 7, the study accept the null hypothesis and reject the alternative in the long run and short run. Thus, the study concludes that the extent to which financial leverage affect

Springate S-score financial distress of listed services companies in Nigeria is insignificant for both long run and short run.

Ho₄: The extent to which operating capacity affect Springate S-score financial distress of listed services companies in Nigeria is not significant

Decision Rule: Accept Ho if $P > 0.05$. Otherwise reject

In Table 7, the estimated Springate S-score financial distress model results are presented. According to the long-term outcome, the operating capacity (OPC) has a negative and statistically insignificant effect on the Springate S-score financial distress in the long run of listed services companies in Nigeria (Coefficient = -0.412254, t-Statistic = -388.6411, $p = 0.0000$). This indicates that if all other variables remain constant, a 1% increase in operating capacity will result in a 41% decrease in financial distress in the long run of listed services companies in Nigeria. However, according to the short-term outcome, the operating capacity (OPC) has a positive but statistically insignificant effect on the Springate S-score financial distress in the short run of listed services companies in Nigeria (Coefficient = 0.091720, t-Statistic = 0.219489, $p = 0.8274$). This indicates that if all other variables remain constant, a 1% increase in operating capacity will result in a 493% increase in financial distress in the short run of listed services companies in Nigeria. Based on the long run and short run result as estimated in table 7, the study reject the null hypothesis and accept the alternative in the long run while in the short run, we accept the null hypothesis and reject the alternative. Thus, the study concludes that the extent to which operating capacity affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which operating capacity affect Springate S-score financial distress of listed services companies in Nigeria is not significant.

Post Estimation Test

The study examined the effect of firm characteristics on financial distress of listed services companies in Nigeria. The study applied preestimation checks to ensure reliability of the result. The parameters estimate and the estimated regression were also done to meet the assumptions of ARDL. A Wald test was conducted to determine the significance of the model explanatory variables, and the findings are displayed in table 8. Also, the Histogram of Residuals of Jarque-Bera statistic was used to determine if a sample or any group of data fits a standard normal distribution.

Table 8 Wald Test

Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	393.9397	40	0.0000
F-statistic	155188.5	(1, 40)	0.0000
Chi-square	155188.5	1	0.0000
Null Hypothesis: C(1)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(1)	3.177451	0.008066	

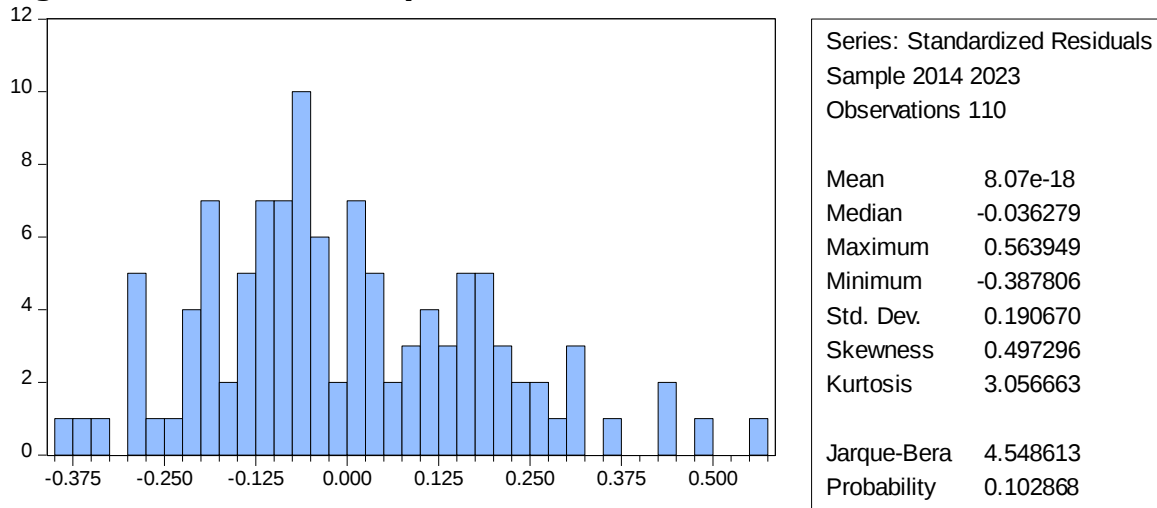
Restrictions are linear in coefficients.

Source: *Researcher computation (2025) using E-views 10*

The results of the Wald Test presented in Table 8, showed that both the F-distribution (with a Test Statistic of 155188.5 and a P-value of 0.0000) and the Chi-Square distribution (with a Test Statistic

of 155188.5 and a P-value of 0.0000) indicate that the independent variables (ATAN, LIQ, FIL and OPC) have a significant joint effect on the dependent variable (SSS). As the corresponding P-values are less than 5%, the null hypothesis is rejected, and it can be concluded that firm characteristics variables have significant effect on financial distress of listed services companies in Nigeria

Figure 2 Residual Normality Tests



Source: Researcher computation (2025) using E-views 10

The figure 2 above disclosed diagnostic test using normality test of residuals histograms as criteria for decision. The result indicates that Jarque-Beta probability value is greater than 0.05 (0.1028 > 0.05) and this means that that the residuals are normally distributed hence Auto Regressive Distributive Lag model II was appropriate estimated.

CONCLUSION AND RECOMMENDATIONS

This study investigated the effect of firm characteristics on financial distress of listed services companies in Nigeria from 2014 to 2023. Based on the data analysis, and discussion of findings; the following conclusions are drawn: The study generally concluded that there is significant effect of firm characteristics on financial distress of listed services companies in Nigeria from 2014 to 2023 in the long run while there is an insignificant effect of firm characteristics on financial distress of listed services companies in Nigeria from 2014 to 2023 in the short run. Other inclusions are;

1. The study concludes that the extent to which assets tangibility affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which assets tangibility affect Springate S-score financial distress of listed services companies in Nigeria is not significant.
2. The study concludes that the extent to which liquidity affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which liquidity affect Springate S-score financial distress of listed services companies in Nigeria is not significant.
3. The study concludes that the extent to which financial leverage affect Springate S-score financial distress of listed services companies in Nigeria is insignificant for both long run and short run.
4. The study concludes that the extent to which operating capacity affect Springate S-score financial distress of listed services companies in Nigeria is significant in the long run but in term of short run the extent to which operating capacity affect Springate S-score financial distress of listed services companies in Nigeria is not significant.

Recommendations

In line with the objectives of this study, findings and conclusions which facilitate for the following recommendations:

1. Firms should adopt strategic financial management practices aimed at increasing assets tangibility, such as effective cost management, revenue diversification, and operational efficiency in order to reduce financial distress.
2. Investors should be educated on the key firm characteristics indicators that drive financial distress, such as liquidity to make informed investment decisions rather than relying on non-financial factors.
3. Although financial leverage does not significantly affect springing gate S-score of financial distress, firms should maintain low- financial leverage to build investor trust and improve market credibility and reduce financial distress.
4. Management should embracing operating capacity in their plan which may elevate a company's image, maintain transparency, engender trust, and secure its place as a frontrunner in the race towards a sustainable and profitable future.

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