



OWNERSHIP STRUCTURE AND CASH HOLDING OF LISTED SERVICE FIRMS IN NIGERIA: THE MEDIATING EFFECT OF FINANCIAL LEVERAGE

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Abstract

This study examines the mediating effect financial leverage on the relationship between ownership structure and cash holdings of listed service in Nigeria. The study employed correlational research design using data from the Nigeria Exchange Group (NGX) over the period of fourteen years (2010-2023). Data was extracted from the annual report and accounts of the seventeen out of twenty-two listed services firms for the period through the application of filter from a purposive sampling technique. The data was subjected to descriptive statistics, correlation and Structural Equation Adjusted Modeling (SEM) were used as techniques for data analysis while bootstrapping result was used to determine the level of significance of the indirect effects and the hypotheses formulated were tested. The findings demonstrate that ownership structure does not influence financial leverage, this implies that firms with greater managerial, Institutional and foreign investors are likely to hold more cash for day-to-day activities while financial leverage affects cash holdings of the sampled firms. Moreover, ownership structure directly influences cash holdings without the influence of financial leverage decision as a mediator. Based on this finding, the study recommended that management of listed services firms should continue to strengthen governance frameworks to ensure that both foreign and institutional stakeholders prioritize effective cash management practices. In the same vein, policymakers encourage local ownership structure due to the influence of this type of ownership on a firm's capital structure and its joint importance effect with firm investments. In the same vein, management should develop robust cash management strategies to balance liquidity needs with debt obligations. This can include optimizing cash flow forecasts and managing working capital efficiently. Furthermore, management should implement long-term financial planning that considers ownership structure's impact on cash holdings, ensuring that firms are prepared for future financial needs without relying heavily on leverage.

Keywords: ownership structure, financial leverage, cash holdings, listed firms, *NGX*

1. Introduction

Firms in different countries maintain varying amounts of cash for various reasons which including, transactional needs which is for day-to-day transactions, such as paying suppliers, employees, and operational expenses. Also, for precautionary motive; hold cash as a precautionary measure to cover unexpected expenses, economic downturns, or emergencies while for strategic investments reason where cash are reserves to provide firms with the flexibility to seize investment opportunities, fund strategic projects, or engage in mergers and acquisitions (Smith & Jones, 2021; Brown & Lee, 2020; and Wang & Chen, 2019). These reasons highlight the importance of cash holdings for firms' operational efficiency, risk management, and strategic decision-making.



Different corporations have different cash holding practices depending on their goals. The increasing amount of cash held by a company indicates that the company can survive during a crisis by maintaining liquidity. Companies manage the usage of cash at the maximum level based on the trade-off theory by weighing the cash holding's marginal benefit against its marginal cost (Maulana et al., 2022). Cash holding entails the cash the company has on hand or that is available for pay-out to investors or investment in tangible assets (Gill & Shah, 2012). Effective cash management enables firms to meet financial obligations, capitalize on opportunities, and achieve strategy objectives. Management is responsible for managing a firm's cash resources effectively.

Ownership shareholders often delegate the responsibility of managing cash to the firm's management for various reasons. This delegation allows management to make day-to-day cash management decisions efficiently, ensuring operational stability and liquidity (Purbayasa & Wiyanti, 2024). More so, entrusting management with cash management duties, shareholders can focus on strategic decision-making and long-term goals, while management handles the tactical aspects of cash flow management. This delegation of responsibilities can impact cash holding levels and financial performance (Farah, 2022). The delegation of cash management responsibilities from ownership shareholders to management reflects a division of labor within the firm, aimed at optimizing financial operations and performance.

Ownership structure is defined as the distribution of equity with regard to votes and capital and also by the identity of the equity owners. These structures are of major importance in corporate governance because they determine the incentives of managers and thereby the economic efficiency of the corporation's (Jensen & Meckling, 1976). They also proved that concentration of ownership is beneficial to corporations because large shareholdings would allow for greater monitoring of managers. Ownership structure plays an important role in any firm because whole firm depends on the ownership structure. In the developing countries like Nigeria, there is a mix ownership structure (managerial, institutional, foreign, individuals, family and government shareholding). Most of the firms controlled by the institutional, managerial, families and foreign of the firms have power to take the decisions of the firm (Moses).

The ownership structure of a firm plays a pivotal role in shaping its financial decisions, particularly when it comes to cash holding. The composition of a firm's ownership can influence the level of cash reserves maintained, as different ownership groups may prioritize varying objectives, such as risk management, investment opportunities, or dividend payouts. The impact of ownership structure (such as managerial, institutional, foreign, and concentration) on cash holding is a crucial area of study, as it can reveal insights into the motivations and behaviors of firms in managing their liquidity. Organization needs funds to expand their operations and financial their assets from the cash holding decision.

There are a multiple of financing sources available to finance their assets. Basically, two sources of finance can be used: internal financing sources which include reserves and retained earnings and external financing which includes long-term loans, bond issuance, ordinary and preferred stock issuance. Financial leverage is the use of borrowed money (i.e. debt) as capital by using different sources of funds in the form of either short term debt or long term debt in the form of debenture or bonds (Khalid et al., 2017). According to Adamu et al. (2023) leverage is one of the methods being used by owners/managers to finance their capital. To gain a general idea of how much debt is employed by a company, a total interest-bearing debt is compared to total assets or capital as the case may be. A higher percentage implies more dependent on debt and so a riskier venture. It can determine the overall level of financial risk (Khalid et al., 2017). Higher financial leverage typically indicates higher debt levels which can lead to increased debt service obligations such as interest payments and this reduces the amount of cash available for other purposes, potentially limiting cash reserves (Fiona & Sufiyati, 2023).



The opportunity costs of lost investments when holding cash (i.e., a non-earning asset) and the benefits of reducing the transaction costs of external funds and being able to finance projects, when necessary, firms vacillate with regard to the levels of cash being held (Alkhataybeh et al., 2022). To make matters more complicated, firms also need to deal with the expected agency problems associated with the high levels of cash, because cash is vulnerable to exploitation by managers (Myers & Majluf, 1984). Consequently, examining the factors that affect the level of cash holdings and how cash holdings are used is inevitable.

In Nigeria, determinants of cash holding have been examined extensively. A stream of research has examined how ownership structure influence the levels of cash holding by Nigerian firms; for example, Iyoha et al. (2024) in non-financial companies, Onkelobi (2022) in listed agricultural and manufacturing firms, Umar and Binta (2022) in listed Deposit Money Banks, Ozordi et al. (2019) in listed manufacturing and Ikueze and Egungwu (2017) in listed manufacturing companies. Outside Nigeria, Thai et al. (2024) in Indonesia, Wirianata (2024) in Indonesia, Basiouny et al. (2023) in Egypt, Alkhataybeh et al. (2022) in Jordan, Alghadi et al. (2021) in Saudi Arabia, Qian (2021) in American, Seth et al. (2021) in India, Elsawah (2020) in Egypt, Jing-Hui and Wee-Yeap (2020) in Malaysian and Singapore, Phaiboonvessawat (2019) in Thailand, Safdar et al. (2019) in Pakistan, Vo (2018) in Pakistan and Safdar (2017) in Pakistan.

Another stream has examined the effect of ownership structure on financial leverage from both local and foreign levels includes; Byuan et al. (2024), Reid (2023), Tran and Nguyen (2023), Pramuka and Sasaki (2021), Bajagai et al. (2019) and Abobakr and Elgiziry (2016). Also, prior studies on relationship between financial leverage and cash holdings includes, Al-Shaikhliet al. (2024) in Iraq, Ariel and Susanti (2024) in Indonesia, Hidayati and Ratnawati (2024) in Indonesia, Arfianti et al. (2023) in Indonesia, Sethi et al. (2022) in Indonesia, Tran-Minh et al. (2022) in Vietnam, Ali et al. (2021) in Pakistan, Nnenna et al. (2020) in Nigeria, Ugwu (2020) in Nigeria and Amahalu (2019) in Nigeria. However, the mediating effect of financial leverage on the relationship between ownership structure and cash holding has yet to be examined. Therefore, this research intends to fill this gap. Hence, the relationship between ownership structure and cash holding, and mediating effect of financial leverage in the overall of listed service firms in Nigeria is missing.

This study is a pioneering attempt to explore the mediating effect of financial leverage on the relationship between ownership structure and cash holding of listed service firms in Nigeria. The question about the mediating effect of financial leverage relationship between ownership structure and cash holding is considerable for the following reasons. First, a direct effect of ownership structure has been relatively strong on cash holding. Since there is existing strong relationship between ownership structure and cash holding, examining the financial leverage as a mediator for cash holding could elaborate the mixed consequences of the effect of ownership structure on cash holding. Second, by putting financial leverage as a mediator, this might have an influential argument of how changes in ownership structure affect cash holding. The study related to ownership structure mechanism impact on cash holding while mediating effect of financial leverage is a concern for the service firms in Nigeria, so that this research could make a huge difference in stability. Therefore, this study explored the mediating effect of financial leverage on the relationship between ownership structure and cash holding of listed service firms in Nigeria.

2. Literature Review and Hypothesis Development

Holding cash can help firms exploit investments when they become available and avoid opportunity costs. It also lowers the transaction costs associated with external funds. Several theories have attempted to explain the costs and motives of holding cash. First, the financing friction hypothesis



(i.e., pecking order and trade-off theories). Trade-off theory assumes that with higher cost of capital, the optimal cash level will be higher; that is, the benefits of holding higher levels of cash increase (Opler et al., 1999). In a similar vein, pecking order theory assumes that with higher capital costs and more expensive external financing means, firms are more likely to rely on internal funding sources and hold higher levels of cash (Myers & Majluf, 1984). It was found that firms tend to hold more cash when raising external capital is more difficult (Opler et al., 1999), and when cash flow uncertainty is higher (Duchin, 2010).

Second, the liquidity preference theory of Keynes (Keynes, 1937) provides three explanations for the holding of cash. First, the transactions motive; to avoid the trouble of obtaining funds to meet short-term obligations, firms hold more cash in order to preserve their liquidity and to provide for day-to-day transactions. Second, the speculative motive, whereby firms retain cash to benefit from better opportunities in the future, giving them adequate cash when interest rates fall, in anticipation that rates will increase again, thus allowing them to make a profit. In other words, they speculate on interest rate fluctuations. Third, the precautionary demand motive, whereby firms retain cash as a precaution for unexpected expenses or for when investment opportunities become available.

Third, agency theory; because of agency conflicts, this theory expects that management will hold more cash for personal interests at the expense of shareholders (Jensen & Meckling, 1976), since cash can be easily converted into private advantages. First, it is expected that management may hold higher levels of cash to elude market discipline (Jensen, 1986), as excess cash provides a buffer for them to undertake projects when finance is unavailable especially if those projects are value decreasing. Second, management may accumulate cash to pay for perks or even tunnel the firm's cash to themselves (Harford et al., 2008). In other words, higher cash holdings, that is, higher availability of internal capital, allows managers to make investments, acquisitions or compensations that favour themselves at the cost of other shareholders. In the absence of an effective monitoring scheme, self-interested managers are less likely to deploy cash in the best interests of shareholders. According to free cash flow theory, Jensen (1987) expects that in order to lower agency conflicts, owners will opt to restrict managers' access to free cash flow. Therefore, it is of great importance to determine which ownership structure will have an impact on management's decisions on the level of cash holdings.

Ownership Structure and Cash Holding

Ownership structure is part of corporate governance attribute that reduces opportunistic managerial behaviors and increase investors benefit (Umar & Binta, 2022). It has been observed that managers' and shareholders' interests are not fully aligned especially in situations where managers clearly display opportunistic behavior which is likely to result into conflict of interest among the relevant stakeholders. This conflict of interest between managements and shareholders lead to agency problems that reduce cash holdings and increase the agency costs in the firm. Thus, increasing ownership structure from a low level should lead to better decision making and increase cash holdings. The effects of managerial ownership on cash holding have been widely studied in both developed and developing countries; their results show a significant impact. This was documented in the studies conducted by (Wirianata, 2024; Umar & Binta, 2022; Alghadi et al., 2021; Jing-Hui & Wee-Yeap, 2020; Ozordi et al., 2019 and Abdioglu, 2016).

In terms of the impact of institutional ownership on cash holdings, the findings of (Iyoha et al., 2024, Wirianata, 2024; Basiouny et al., 2023; Jebran et al., 2020; Safdar, 2017; and Al-Najjar & Clark, 2017) show a strong relationship. On the impact of foreign ownership on cash holdings, empirically previous research has reported significant relationship between foreign ownership and cash holdings (Alkhataybeh et al., 2022; Alghadi et al., 2021; Gupta & Bedi, 2020; Ozordi et al., 2019; Vo, 2018; Loncan 2018, and Ku et al. 2013). This is in line with finding of Nguyen (2022) who concluded that foreign ownership benefits the cash holding of the firms under study. This author explains that companies with



a large foreign shareholding keep cash on hand to deal with the unforeseen needs. Considering of strong relationship between ownership structure (managerial, institutional and foreign ownership) and cash holding from the previous findings, the effect of ownership structure mechanism on the level of cash holdings needs further investigation. Therefore, the proposed hypothesis based on the previous discussion is as follows:

H₀₁: Ownership structure (managerial, institutional and foreign ownership) has insignificant impact on and cash holding of listed service firms in Nigeria.

Ownership Structure and Financial Leverage

Ownership structure varies across different organizations and has a significant impact on financial leverage decisions, as evident from previous research in this field. The influence ownership structure such as managerial, institutional and foreign ownership on financial leverage is debatable in the academic literature. Empirically, Bokpin and Arko (2024), Byuan et al. (2024), Driffield et al. (2024), Olowookere et al. (2023), Reid (2023), Elgammal and Al-Najjar (2022) and Pramuka and Sasaki (2021) reported that increasing managerial ownership affect financial leverage. This implies that managerial shareholders will suffer wealth losses, exactly like other shareholders, if they employ less debt than the optimal level in the corporate financial leverage. The findings from the previous declare that managers with a high percentage of ownership have the tendency to perform activities that maximize the shareholders' wealth. Beyond that, Khan et al. (2024) reported insignificant impact.

In addition, Al-Najjar and Taylor (2024), Driffield et al. (2024), Reid (2023), Elgammal and Al-Najjar (2022), Bajagai et al. (2019) and Pramuka and Sasaki (2021), concluded that institutional ownership affects financial leverage. The significant relationship between institutional ownership and debt ratio (financial leverage) indicates that institutional shareholding having significant effects on supervising the firm's managers and thus can reduce the agency problems, suggesting that institutional ownership plays an essential role as a monitoring device to minimize agency problem. Also, implies that firms with a large percentage of shares held by institutional shareholders seems to employ less debt financing which supports the pecking order theory. Although, Hussain et al. (2023) concluded that institutional ownership has insignificant impact on financial leverage.

More so, in the financial system, foreign ownership plays a vital role particularly in underdeveloped nations (Nyuyen & Duong, 2022). Although earlier study documents diverse outcomes, a significant number of studies demonstrate that foreign ownership influence financing decisions, this includes Reid (2023), Tran and Nguyen (2023), Nguyen and Duong (2022), Gurusamy (2021), Harymawan et al. (2020), Gupta et al. (2020) and Abobakr and Elgiziry (2016). The significant impact of foreign ownership on financial leverage indicates the importance of considering how foreign investors can influence a firm's capital structure decisions and leverage levels. On the other hand, Hussain et al. (2023), Shubita (2023), Vu et al. (2020) and Anh et al. (2018) documented insignificant relationship between foreign ownership and financial leverage. The ownership structure variables considered in this piece of work are managerial, institutional and foreign ownership. Hence, second hypothesis according to the above discussion is formulated in null form:

H₀₂: Ownership structure (managerial, institutional and foreign ownership) has insignificant impact on financial leverage of listed service firms in Nigeria.

Financial Leverage and Cash Holding

Financial leverage can impact cash holding from the debt servicing aspect, higher debt levels require more cash for interest and principal payments, reducing cash available for other uses. More so, firms with high financial leverage may hold more cash to mitigate the risk of debt default or financial distress. Beyond that, firms with high financial leverage may hold more cash to signal financial stability to stakeholders. According to trade-off theory, leverage can reduce company's cash holdings (Ariel & Susanti, 2024). If high financial leverage is viewed as company's ability to easily obtain funds from



creditors the company doesn't need to hold a large amount of cash (Le et al., 2018). In the agency theory view, companies with high leverage tend to hold less cash due to high level of supervision from external parties (Chireka & Fakoya, 2017).

Research conducted by Ariel and Susanti (2024), Hidayati and Ratnawati (2024), Al-Shaikhli et al. (2024), Sethi et al. (2022), Tran-Minh et al. (2022), Ali et al. (2021) and Amahalu (2019) show that leverage has a significant effect on cash holdings. This means that a high debt will result in reduce cash because the company needs to finance the debt along with its interest supporting trade-off and agency theories. Research conducted by Arfianti et al. (2023), Nnenna et al. (2020), Ugwu (2020) and Arfan et al. (2017) show that financial leverage has insignificant effect on cash holdings. Given that the majority of prior studies for the same research context indicate a significant impact between financial leverage and cash holding, the third hypothesis that is put forth:

H₀₃: Ownership structure (managerial, institutional and foreign ownership) has insignificant impact on financial leverage of listed service firms in Nigeria.

Ownership Structure and Cash Holding: The Mediating Effect of Financial Leverage

As has been mentioned so far, the ownership structure influences both financial leverage (Bokpin & Arko, 2024; Byuan et al., 2024; Driffield et al., 2024; Olowookere et al., 2023; and Reid, 2023) and cash holding (Umar & Binta, 2022; Alghadi et al., 2021; Jing-Hui & Wee-Yeap, 2020; and Ozordi et al., 2019). On the other side, financial leverage has been shown to affect negatively cash holding (Ariel & Susanti, 2024; Hidayati & Ratnawati, 2024; Al-Shaikhli et al., 2024; and Sethi et al., 2022). In fact, according to (Tran-Minh et al., 2022), the positive relationship between financial leverage and cash holdings indicates that, high levels of financial leverage (highly levered) firms are likely to experience financial distress and go into bankruptcy and hence allocating higher cash ratios to mitigate the likelihood of financial distress and reserves borrowing capacity. In the meantime, financial leverage is negatively related to cash holdings appearing at low levels of financial leverage since financial leverage is more likely to serve as the ability to issue debt that plays an important role as a cash substitute (Tran-Minh et al., 2022).

Huynh et al. (2022) examined the mediating effect of financial leverage on the relationship between corporate governance and firm performance of non-financial sector in Pakistan. Financial leverage significantly reduces cash holding because firms that use external borrowing choice must pay debt instalments and interest because this can influence the company's cash holding. Increased debt financing can decrease opportunistic behavior of managers and minimize effect on corporate governance. Thus, extent of financial leverage and debt contracts likely to lead to decreases in corporate cash holding. To our knowledge, this is the first study to have examined the mediating effect of financial leverage on the relationship between ownership structure and cash holding in the Nigeria context. The above discussion indicates that ownership structure positively affects financial leverage, which, in turn, negatively affects cash holding. This enables us to posit the following hypothesis:

H₀₄: Financial leverage does not significantly mediate the relationship between ownership structure (managerial, institutional and foreign ownership) and cash holding of listed service firms in Nigeria.

3.0 Methodology

The study used a sample of service firms listed on Nigeria Exchange Group during the period of 2010-2023. The study has its population as all the twenty-two (22) service firms that were listed on NGX as 31st December, 2023. For any company to be included in the working population it must have been listed on the NGX, on or before 31st December, 2023. In addition, it must have been listed and without being delisted between 2014 and 2023. This criterion is established with a view to ensuring that the services firms have their published financial statements for the period covered by this study. As a



result of this filter through a purposive sampling technique, the number of services firms reduced to seventeen (17). The whole filtered working population was taken as the sample for the study. The definitions and measurements of the variables are presented in Table 1 below:

Table 1

Variables of the Study and their Measurements

Variables	Symbol	Measurement	Source/Justification
Cash Holding	CH	Cash and cash equivalents divided by total assets.	Hidayati and Ratnawati (2024), Iyoha et al. (2024), Thai et al. (2024), Wirianata (2024) and Basiouny et al. (2023).
Ownership Structure	MGO	The proportion of shares held by managers to the total of shares issued	Byuan-Thai et al. (2024) Wirianata (2024) , Hussain et al. (2023), Olowookere et al. (2023) and Umar and Binta (2022).
	ISHO	Proportion of shares held by institutions to the total of shares issued	Iyoha et al. (2024), Wirianata (2024), Basiouny et al. (2023), Hussain et al. (2023) and Umar and Binta (2022).
	FRO	Proportion of shares held by foreign to the total of share issued	Thai et al. (2024), Hussain et al. (2023), Al-khataybeh et al. (2022), Onkelobi (2022) and Alghadi et al. (2021).
Financial Leverage	FL	Total debt divided by total assets.	Hidayati and Ratnawati (2024), Sethi et al. (2022) and Tran-Minh et al. (2022).
Profitability	ROA	PBT divided by Total Assets	Hidayati and Ratnawati (2024), Olowookere et al. (2023), Alghadi et al. (2021) and Sethi et al. (2022).
Tangibility	TAN	Fixed assets divided by total assets	Sethi et al. (2022) and Tran-Minh et al. (2022).
Firm Size	FZ	Log Natural (Total Assets)	Hidayati and Ratnawati (2024), Wirianata (2024), Tran-Minh et al. (2022) and Virginus (2020).

Source: Author's Compilation, 2024.

Model Specification

Memon et al. (2018), Mackinnon et al. (2012) and Zhao et al. (2010) two approaches were adapted to the mediation. The models are presented as follows:

The first equation was developed to examine the effect of ownership structure on cash holding of listed services firm in Nigeria.

$$CH_{it} = \beta_0 + \beta_1 MGO_{it} + \beta_2 ISHO_{it} + \beta_3 FRO_{it} + \beta_4 ROA_{it} + \beta_5 TAN_{it} + \beta_6 FZ + ? \dots\dots\dots 1$$

The second equation was developed to establish whether or not the direct relationship between the ownership structure and cash holding of listed services firm in Nigeria is mediated by financial leverage.

$$CH_{it} = \beta_0 + \beta_1 MGO_{it} + \beta_2 ISHO_{it} + \beta_3 FRO_{it} + \beta_4 FL_{it} + \beta_5 ROA_{it} + \beta_6 TAN_{it} + \beta_7 FZ + ? \dots\dots\dots 2$$

Where:

CH= Corporate cash holding of firm “i” in period “t”

MGO_{it} = Managerial ownership of firm “i” in period “t”

ISHO_{it} = Institutional ownership of firm “i” in period “t”

FRO_{it} = Foreign ownership of firm “i” in period “t”

FL_{it} = Financial leverage of firm “i” in period “t”

ROA = Return on Assets of firm “i” in period “t”

TANG_{it} = Tangibility of firm “i” in period “t”

FZ_{it} = Firm size of firm “i” in period “t”



β_0 = Intercept or constant
 $\beta_1 - \beta_7$ = Regression coefficient of explanatory variables
 i = Firm
 t = Period
 ϵ_{it} = Error term of firm “i” in period “t”

Techniques of Data Analysis

The study used three techniques in analyzing the data generated. They are descriptive statistics, correlation, and multivariate regression. Descriptive statistics involved the use of mean, standard deviation, minimum and maximum to evaluate degree of variability of the selected variables for the study. At the same time, it is consistent with the studies of Hidayati and Ratnawati (2024), Iyoha et al. (2024), Sethi et al. (2022), Tran-Minh et al. (2022). Correlation shows the strength and the degree of association among the variables. In other words, it is employed to determine the level of inter-relationship between the independent variables among themselves, mediating and the dependent variables under study so as to understand the degree of their association before conducting the regression analysis. This is consistent with the work of Iyoha et al. (2024), Wirianata (2024), Olowookere et al. (2023) and Umar and Binta (2022) among others.

Furthermore, multiple regression technique using Structural Equation Model (SEM) was used to examine the direct, indirect and total effects. This was employed as a tool of data analysis because it provides an opportunity to test multiple relationships simultaneously. The MEDSEM approach developed by Zhao et al. (2010) was used to test the significant indirect effect. Based on this approach, the schematic model of this research is shown in Figure 1.

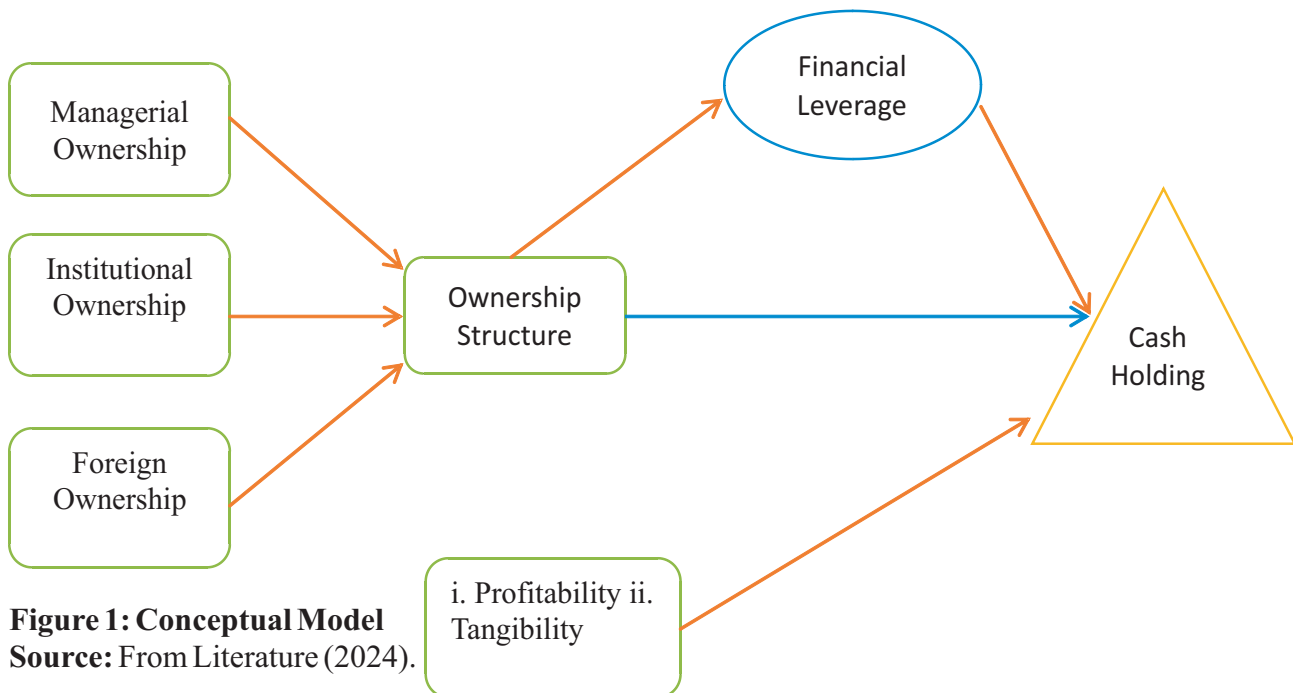


Figure 1: Conceptual Model
Source: From Literature (2024).



4.0 Results and Discussions

This section presents the result of data analysis that includes descriptive statistics, correlation matrix, multiple regression technique using Structural Equation Model (SEM) and MEDSEM approach. Table 2 presents descriptive statistics of the study variables.

Table 2
Descriptive Results

Variables	Obs.	Mean	Std. Dev.	Min	Max
CH	238	0.0605	0.0715	0.0002	0.3416
MGO	238	0.2977	0.2320	0	0.8878
ISHO	238	0.3244	0.2399	0	0.983
FRO	238	0.0810	0.1238	0	0.4933
FL	238	0.5122	0.1995	0.1022	0.8557
ROA	238	0.0037	0.0876	-0.1836	0.1457
TANG	238	0.3838	0.2823	0.002	0.9673
FZ	238	9.7281	0.5962	8.3575	11.0900

Source: Generated using STATA Version 14.2

Table 2 shows the descriptive statistics of the variables used in the study: Cash Holdings (CH) ownership structure (MGO, ISHO and FRO), Financial Leverage (FL), Return on Assets (ROA), Tangibility (TANG) and Firm Size (FZ). The descriptive statistics indicate the average cash holding value is 0.0605, lower than the standard deviation value of 0.0715. The average cash holding value of 0.0605 indicates that the sample firm has an average amount of cash on hand of 6% of total assets. Meanwhile, the minimum cash holding value of 0.0002 indicates that the sample firm has the lowest amount of cash on hand, 0.2 per cent of the total assets in the firm. Then, the maximum cash holding value of 0.3416 shows that the amount of cash in the hands of the sample firm is the highest at 34 per cent of total assets. The average level of managerial ownership in the sample firm was 0.2977 or 30 per cent of all shareholdings in the sample firm. The average value of managerial ownership was 30% less than the standard deviation value of 0.2320. This value shows the high variation of managerial ownership data, which can be seen from the magnitude of the difference between the maximum value and the minimum value for managerial ownership. The highest managerial ownership (maximum) in the sample firm was 0.8878 per cent. Meanwhile, the lowest managerial ownership (minimum) is 0 per cent.

Share ownership by institutions in sample firm is an average of 0.3244 (32%) per cent of all shareholders, greater than the standard deviation value of 0.2399. The highest institutional ownership is 98 per cent of all shareholders. Meanwhile, the lowest institutional ownership was 0 per cent of all shareholders. Foreign ownership has a minimum value of zero and maximum value of 0.4933 with an arithmetic mean of 0.0810, while its standard deviation equals 0.1238. More so, financial leverage shows an average value of 51.22%, which implies that debt accounts for 51% of the firm's total assets, with a minimum of 10% and 86%, respectively. Similarly, the descriptive statistics shows that average value of return on assets as 0.0037(0.4%), with minimum and maximum values of -0.1836 (18%) and 0.1457 (15%) respectively. This shows that there is no variation in return on assets of sampled firms as portrayed by the standard deviation of 0.0876 (9%), which is means that there is no much wide value.

The mean tangibility of 0.3838 in Table 2 showed that on the average the proportion of PPE in total assets of listed services firms was 38 percent. With a minimum of 0.2 percent and maximum of 97 percent of PPE in total assets, it is evident that the tangibility as manifested in the financial reports of



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sampled firms was widely dispersed. The standard deviation of 28 percent further lends credence to the spread of the data. Lastly, firm size has a minimum value of 8.3575 and maximum value of 11.0900 with an arithmetic mean of 9.7281, while its standard deviation equals 0.5962 which reveals a high level of values dispersion around the arithmetic mean. The correlation matrix as presented in Table 3 shows the association link between explanatory variables and the dependent variable.

Table 3
Correlation Matrix

Variables	CH	MGO	ISHO	FRO	FL	ROA	TANG	FZ
CH	1.0000							
MGO	-0.1531	1.0000						
ISHO	-0.0891	0.1165	1.0000					
FRO	0.0551	-0.2497	0.5865	1.0000				
FL	-0.2680	-0.0835	0.1718	0.1610	1.0000			
ROA	0.4022	-0.1086	-0.2809	0.1506	0.2276	1.0000		
TANG	-0.2017	0.0921	0.14500	0.4328	0.0042	-0.3438	1.0000	
FZ	0.0095	-0.5115	0.0904	0.3722	0.2887	-0.0425	0.0264	1.0000

Source: Stata Version 14.2 Output

The correlation results illustrate the relationships between the explanatory variables (MGO, ISHO, FRO, FL, ROA, TANG and FZ) and cash holdings as well as the relationship among the independent variable. The negative correlation coefficient of -0.1531, -0.0891, -0.2680 and -0.2017 between independent variable (MGO, IDHO, FL, AND TANG) and cash holdings indicate that as those variables increase, the level of cash holdings decreases. Meanwhile, the positive correlation coefficients between (foreign ownership, return on assets and firm size) and cash holdings, suggest that high foreign ownership, return on assets and firm size may have slightly higher levels of cash holdings of listed services firms in Nigeria, though these relationships are relatively weak.

Table 4
Correlation Matrix

Variables	VIF	1/VIF
FRO	2.69	0.372095
ISHO	2.02	0.495774
TANG	1.62	0.618906
FZ	1.60	0.624346
MGO	1.59	0.629532
ROA	1.32	0.755612
FL	1.17	0.852645

Source: Stata Version 14.2 Output



To determine the presence of Collinearity problem, a Variance Inflation Factor (VIF) Tolerance test was carried out, the results in Table 4 provided evidence of the absence of Collinearity. This is because the results of the VIF test ranges from a minimum of 2.69 to a maximum of 1.17, which suggests absence of Multicollinearity in the model. This is because, all the VIF values are less than 10 and the mean VIF is just 1.72.

Structural Equation Modelling (SEM) Results

This sub-section presents the regression result of the effect of ownership structure (managerial institutional and foreign ownership) on cash holdings of listed services firms in Nigeria mediating effect of financial leverage, using Structural Equation Modelling (SEM). Table 5 showed the estimation result of direct effects (managerial ownership and profitability).

Table 5

Direct Effects and Total Effect (MO and ROA)

Direct Effects – Impact of Ownership Structure on Financial Leverage			
Path	Coefficient	Z	P>/z/
—	0.0446	0.69	0.491
ISHO—> FL	0.0598	0.81	0.417
FRO—> FL	0.0678	0.43	0.668
ROA—> FL	-0.5078	-3.31	0.001
TAN—> FL	-0.0800	-1.49	0.136
FZ—> FL	0.0960	3.91	0.000
CONS	-0.4275	-1.72	0.086
R-square	0.1474		
P-value	0.000		
Likelihood	- 751.43723		
Obs	238		
Total Effects – Impact of Ownership Structure on Cash Holdings			
Path	Coefficient	Z	P>/z/
FL—>CH	-0.0807	-3.70	0.000
MGO—> CH	-0.0187	-0.86	0.392
ISHO—> CH	-0.0273	-1.10	0.272
FRO—> CH	0.1552	2.92	0.004
ROA—> CH	0.2375	4.50	0.000
TAN—> CH	-0.0501	-2.77	0.006
FZ—> CH	-0.0037	-0.44	0.663
CONS	0.1582	1.88	0.061
R-square	0.2488		
P-value	0.000		
Likelihood	- 751.43723		
Obs	238		

Source: STATA 14.0 outputs (2024).



Table 5 reveals a cumulative R^2 of 0.1474 (15%) for direct effect while cumulative R^2 of 0.2488 (25%) is for total effect, this means that variables that were included in the models explain about 15% (DE) and 25% (TE) of the variations in the both models, and other variables not include in model carry about 15% and 25% respectively of the variation in dependent variable. The likelihood ratio (F-statistics), which statistically is significant ($p < 0.001$), indicates that the model is fit to describe the change in the explanatory variables. The SEM regression shows that ownership structure (MGO, ISHO and FRO) has positive and insignificant effect on financial leverage of listed services firms in Nigeria. This outcome indicates that ownership structure mention in this study preference to avoid relying on debt as a source of funding to mitigate the risk of bankruptcy because they are part of owners who tend to invest in firms with low or moderate levels of debt. As such, higher levels of debt are perceived to increase risk, which goes against their investment strategy. This is in line with studies of Shubita (2023).

Furthermore, on the total effect, financial leverage has negative and significant impact on cash holdings as shown in the Table 5 while only foreign ownership that has positive and significant impact on cash holdings, other two variables such as managerial and institutional ownership does not influence the cash holdings of the sampled firms. Ownership structure especially institutional investors hold passable percentage of companies' shares and have motivation and ability to monitor the company's managers and for that reason the managers will invest in a profitable project to yield good outcome which on the other hand reduces cash holding by the company. These results are consistent with prior studies conducted by Wirianata (2024), Umar & Binta 2022). The next section presents estimate result of indirect effect using bootstrapping test.

Ownership Structure, Financial Leverage and Cash Holdings

In this analysis, bootstrapping method of Preacher and Hayes (2008) was used to determine the indirect effect. Zhao et al. (2010) suggested the use of the bootstrap test of indirect effects for mediation, due to the fact that the Sobel's test has low power because it by default uses a normal approximation presuming a symmetric distribution when the sampling distribution of $a * b$ is known to be highly skewed (Kenny & Judd, 2014). The indirect effects significant level was shown in Table 6.

Table 6

Significance Testing of Indirect Effect Using (Bootstrapping)

Path	Coefficient	z-value	P-value	Type	Decision
MGO—>FL—>CH					
_bs_1: r(ind_eff)	-0.0038	-0.89	0.374	No-effect non- mediation	Neither the direct nor indirect effect are significant
_bs_2: r(dir_eff)	-0.0354	-1.49	0.137		
_bs_3: r(tot_eff)	- 0.0392	-1.58	0.115		
ISHO—>FL—>CH					
_bs_1: r(ind_eff)	-0.0069	-1.51	0.131	No-effect non- mediation	Neither the direct nor indirect effect are significant
_bs_2: r(dir_eff)	0.0155	1.09	0.276		
_bs_3: r(tot_eff)	0.0086	0.58	0.564		
FRO—>FL—>CH					
_bs_1: r(ind_eff)	-0.0114	-1.12	0.261	Direct Only Mediation	Direct effect is significant but indirect effect is significant.
_bs_2: r(dir_eff)	0.1241	4.42	0.000		
bs_3: r(tot_eff)	0.1128	3.79	0.000		

Source: STATA 14.0 Outputs (Bootstrapping) Based on Data Generated (2010-2023)



The bootstrap test (with 5000 bootstrap samples), which offers a much more alternative that imposes no distributional assumption (Preacher & Hayes, 2008; Zhao et al., 2010) is employed to test the mediation effect. Results of bootstrapped samples indicated that managerial ownership was insignificant predictor of the cash holdings. Next, the results of the indirect effect based on 5000 bootstrap samples show insignificant indirect relationship between managerial ownership and cash holding mediated by financial leverage as indicated by P-values. This indicates that financial leverage has no significant mediating effects on the relationship between managerial ownership and cash holding of the listed services firms in Nigeria. This signifies that the financial leverage does not significantly explain the relationship between managerial ownership and cash holding of the sampled firms. More so, the result also shows that the relationship between institutional ownership and cash holding does not mediate by financial leverage as showed by P-values.

Furthermore, the results based on 5000 bootstrapped samples indicated that whilst the total effect of foreign ownership on cash holdings was significant, the direct effect was significant too. The results of the indirect effect as indicated by the P-values showed insignificant. This proved that financial leverage has no significant mediating effect on the relationship between ownership structure and cash holding. This signifies that the financial leverage does not significantly explain the relationship between ownership structure and cash holding of the listed services firms in Nigeria.

Testing of Hypotheses and Discussion

Based on the above results in Table 7, the four null hypotheses developed in the literature reviewed were test as follows:

Table 7

Summary of the Tested Hypotheses

Hypotheses		Coef.	Z	P> z	Decision
MGO → FL	1	0.0446	0.69	0.491	Fail to Reject
ISHO → FL	1	0.0598	0.81	0.417	Fail to Reject
FRO → FL	1	0.0678	0.43	0.668	Fail to Reject
FL → CH	2	-0.0807	-3.70	0.000	Reject
MGO → CH	3	-0.0187	-0.86	0.392	Fail to Reject
ISHO → CH	3	-0.0273	-1.10	0.272	Reject
FRO → CH	3	0.1552	2.92	0.004	Reject
MGO → FL → CH	4	No-effect non-mediation			Fail to Reject
ISHO → FL → CH	4	No-effect non-mediation			Fail to Reject
FRO → FL → CH	4	Direct Only Mediation			Fail to Reject

Source: Researcher's Compilation (2024)

In testing these hypotheses formulated in this study, Table 7 based on bootstrapping of testing the indirect effects. The P-values of both bootstrapping results indicate that financial leverage does not mediate the relationship ownership structure and cash holdings of the listed firms in Nigeria. Therefore, the null hypothesis four which states that financial leverage has no significant mediating effect on the relationship between ownership structure and cash holdings of listed services firms in Nigeria is fail to reject.



5.0 Conclusion and Recommendation

This study examined the mediating effect of financial leverage on the relationship between ownership structure and cash holdings of listed services firms in Nigeria. The study reveals that the consistency relationship between ownership structure variables used in this study and cash holdings of listed firms in Nigeria does not mediate by financial leverage. In the light of the major findings of the study, the following conclusion drawn: First, ownership structure has insignificant effect on financial leverage, this means the number of the share held by managers' increase, institution and foreign does not affect financial leverage.

Secondly, financial leverage has negative and significant impact on cash holdings of listed service firms in Nigeria which implies that as firms increase their debt levels, they tend to hold less cash. This could be due to the need to allocate cash for debt servicing or investment in growth opportunities, leading to reduced liquidity. Thirdly, managerial and institutional ownership have negative and insignificant impact on cash holdings. This suggests that these ownership types do not significantly influence the liquidity decisions of firms. This could indicate that managerial discretion and institutional pressure do not lead to substantial changes in cash reserves, potentially reflecting a lack of strategic focus on cash management. Meanwhile, foreign ownership has positive and significant impact on cash holdings of listed service firms in Nigeria. This is an indication that firms with higher levels of foreign investment tend to maintain larger cash reserves. This could be due to foreign investors' preference for stability and liquidity, as they may view cash as a buffer against market volatility or operational risks. Lastly, financial leverage does not mediate the relationship between ownership structure and cash holdings of listed services firms in Nigeria. This means that ownership structure directly influences cash holdings without the influence of financial leverage decision. This suggests that the type and distribution of ownership such as managerial shareholding, the presence of institutional or foreign investors play a more critical role in determining how much cash firms maintain, independent of their financial leverage level.

Based on the findings, the study recommended among other things that management of listed services firms should continue to strengthen governance frameworks to ensure that both foreign and institutional stakeholders prioritize effective cash management practices. In the same vein, policymakers encourage local ownership structure due to the influence of this type of ownership on a firm's capital structure and its joint importance effect with firm investments. Management of listed services firms should develop robust cash management strategies to balance liquidity needs with debt obligations. This can include optimising cash flow forecasts and managing working capital efficiency. Management of listed services firms in Nigeria should strengthen governance frameworks to ensure that both managerial and institutional stakeholders prioritise effective cash management practices. In regard to foreign ownership, management should adapt strategic cash management policies that align with the interests of foreign investors, ensuring that cash holdings are used effectively to maximise shareholder value. Management should closely monitor cash flow requirements and adjust ownership strategies accordingly to ensure that cash holdings align with operational needs and growth objectives. More so, management should implement long-term financial planning that considers ownership structure's impact on cash holdings, ensuring that firms are prepared for future financial needs without relying heavily on leverage.



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