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Cash Management and Performance of Listed Firms in Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This study is set to examine cash management and performance of listed firms in Nigeria. The study used ex post factor research design, the secondary data gathered were analyzed using descriptive statistics, correlation matrix, and Pool Ordinary Least Square Regression. In the return on assets model, the result shows a significant positive relationship between cash conversion cycle, Cash holding and return on assets of firms while, cash flow and firm size has a negative relationship with the return on assets. In the model of Return on Equity, the variables of firm size, firm growth and cash flow indicated a negative relationship with the variable of firm performance. However, only the variable of firm size showed a significant negative relationship at 5% level with the dependent variable. While, there exist a positive relationship between the variable of Cash Conversion Cycle and Return on Equity. The study recommends that service firms should adopt policies that enables them sell inventories and collect receivables quickly for improved efficiency and corporate solvency.

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Keywords: Cash management; cash flow; cash conversion circle; cash holding; firm size; firm growth; return on assets and return on equity.

1. INTRODUCTION

All over the world, there is no business operation that is isolative of cash management Randall and Farris [1]. Olowe, [2] opined that the term 'cash' is the most vital liquid asset required for the day to day operations of businesses. Cash is seen as the most basic liquid input required keeping the business in its day to day activities and it doubles as the ultimate output expected to be realized by selling the services or products manufactured by the firm Pandey [3]. Therefore, the management of this asset is imperative in every business enterprise as cash has been regarded to be the life blood of any business (Chartered Institute of Management Accountant (CIMA), [4].

The importance of cash management is to make sure that there is positive cash flow for smooth business processes. The argument of Adetifa [5] described cash management as professional because of its importance in managing corporate cash transactions. Then the big question that draws attention will be, to what extent is cash management important to the running of a firm or an organization? Or put differently, how important is cash management in ensuring an effective, reliable and positive fund flow system in a business enterprise?

Basically today, cash management has been significantly justified by the growing developments in the world of business over the years Kesseven, [6]. These developmental strides include; changes in the corporate banking relationship from buyer's to a seller's market, globalization of businesses which saw the creation of the Economic Monetary Union (EMU) in Europe, and the proposed adoption of a single currency in the West Africa region (Abioro [7]); the emphasis on new treasury structures to better manage resources on a worldwide basis; the developing interest in e-commerce for business-to-business transactions which changes how data and funds flow greatly reduces working capital cycle time; the emergence of the "new economy" with its orientation to information and cash, driving finance into every area of a company (Marsh, [8]). Based on these developmental efforts, it becomes imperative that effective cash management is fundamental to business survival, growth and overall success.

However, simply put, cash management refers to the ways and manner in which firm manages its cash flow cycle or operating cycles which defines the timing of cash inflows and cash outflows. The pattern of operations varies per industry but in a general term, the pattern involves: providing cash as capital for firm's initial outlay, the procurement of raw materials for manufacturing concerns, provision of cash for finished goods in marketing firms, for the distribution of the finished goods to receive immediate cash or create debtors when goods are sold on credit bases. Akinbuli [9]. Similarly, Ekwere, [10] argued that the process of managing corporate cash has become a major concern for most companies, because of its significant contributions to the overall results of the organization. However, in determining cash management challenges the need to identify areas that are unique to solving cash problems become paramount.

In today's business world, one issue faced by finance managers in managing cash is the determination of an appropriate source of fund either for the purpose of initial take off of the business or for the purpose of its working capital Gakure, Cheluget, Onyango, and Keraro [11]. Some other challenges includes the identification of a profitable investment opportunity in engaging idle funds, non-cash planning, and the determination of an optimal level of cash to be maintained by the firm. Kesseven [6] agreed that most business managers are squarely faced with the challenge of attaining a desired trade-off between liquidity and profitability in the course maximizing the value of the firm. He therefore cautioned that too much focus on profitability may result in asset-liability mis-match which increases profitability in the short run but creating a risk of insolvency. Pandey [12] remarked that finding a tradeoff between sufficient and insufficient cash to be held during business transactions has been a major problem faced by many organizations and Olowe [2] suggested that cash must be obtained from an appropriate source in order to avoid the challenges of fund mismatch in investment decision making.

Traditionally, in the literature of corporate finance, so much has been written on long term investment and financing decisions. However, short term investment assets, has attracted less attention by both academic and professional researchers. Both bodies of researchers have

paid less attention to cash (liquidity) management and its significance to business management practices. Whereas, researchers of finance have concentrated more on the relationship between firm value and capital structure, cash management, concerns and its role in real business, have attracted very little attention. Of more concern is the severe dearth of research on cash management in Nigeria. Studies have shown that although working capital has been well researched, but very few studies have been conducted on cash management which is an integral component of working capital management in Nigeria. However, prior academic research have been largely focused on the manufacturing sector with very few study variables of interest.

Furthermore, this subject has produced contradictory results as to whether cash management improves or worsens the performance of a business organization. Hence it is still worthy of further research such that this becomes the key reason why it is being undertaken in this work. In addition, despite the proliferation of these studies, no attention has been given to the service sector in Nigeria. Thus, there is a major gap in the relevant literature on the impact of cash management studies in Nigeria, with a critical investigation of the service sector in Nigeria.

Consequently, this research aims at examining the impact of firm growth, Cash Conversion Cycle, Cash Holding, Free Cash Flow, and Firm Size on duo performance variables measurement of Return on Assets and Return on Equity. The study aims at x-raying cash management problems faced by most service firms and with a view of proffering solutions that can assist in resuscitating the sector towards achieving economic development. This research therefore attempts to fill this gap by studying the situation and providing more empirical evidence on the impacts of cash management on the performance of service industries in Nigeria.

1.1 Objectives of the study

The main objective of this study is to examine the effect of cash management on the performance of listed service firms in Nigeria. However, the specific objectives of this study are to:

- Examine the effect of Cash Conversion Cycle on the profitability of listed service firms in Nigeria.

- Ascertain the effect of Cash Holding on the profitability of listed service firms in Nigeria.
- Find out the effect of Free Cash Flow on the profitability of listed service firms in Nigeria.
- Determine the effect of Firm Growth on the profitability of listed service firms in Nigeria
- Analyse the effect of Firm Size on the profitability of listed service firms in Nigeria.

1.2 Research Hypotheses

In order to investigate the nature of relationship that exists between cash management and profitability, the following null hypothesis has been formulated:

- Ho₁:** Cash Conversion Cycle does not significantly affect the performance of listed service firms in Nigeria.
- Ho₂:** Cash holding does not significantly affects the performance of listed service firms in Nigeria.
- Ho₃:** There is no significant relationship between free cash flow and performance of listed service firms in Nigeria.
- Ho₄:** There exist no significant relationship between firm growth and performance of listed service firms in Nigeria.
- Ho₅:** Firm Size does not significantly affect the performance of listed service firms in Nigeria.

2. LITERATURE REVIEW

2.1 Review of Conceptual Literature

The general form of cash can be said to be said to be the liquid money of coins, notes and other related means of instant exchange. Pandey [12], refers to cash as money which a business organization or firm can disburse immediately without restriction. The definition of cash includes: coins, currencies and cheque holding by the firm and balances in its bank account. He emphasizes that at times, near cash items in the form of marketable securities or bank time deposits are also included as cash. The definition of Akinbuli [9] states that cash is an output expected to be realized by selling the services or products manufactured by the firm. Pandey [12]; Olowe [2].

Furthermore, the International Accounting Standard 7 [13] defined cash and cash

equivalent as; 'Cash on hand and demand deposit but Cash equivalents are short term, highly liquid investment that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value'. Following this definition, the Nigerian Statement of Accounting Standard 18 (SAS 18) deemed its adoption as fit. The definition of Van Horne [14], states that Cash Management involves managing the money of the firm in order to maximize the interest from income of idle funds.

In the opinion of CIMA [15], cash management is concerned with optimizing the amount of cash available to the organization and to maximize the interest on any spare funds that may not be required at that point in time by the organization. Cash management is the art and the science of managing a company's short term resources to keep up with its ongoing activities, mobilize funds and optimize liquidity. Allman-Ward et al. [16]. He further stated that the objectives of cash management include maintaining adequate control over cash position, keeping the firm sufficiently liquid and to ensuring usage of excess cash in profitable ways.

Cash management refers to the administration of an entity's cash to ensure sufficient cash to sustain the entity's daily operations, finance continued growth and provide for unexpected payments while not unduly forfeiting profit owing to excess cash holdings Akinyomi [17].

From all descriptions and definitions above, it can be summarized that cash management concerns all actions and activities necessary to keep appropriate levels of cash in order to meet operational requirements of a company. Hence, we can conclude here that Cash-flow control is therefore crucial to a business in maintaining appropriate liquidity position and enables the business meet payment obligations through effective management of cash receipts and payments, cash balances and cash transfers, between the different departments of a business (Bragg [18]).

Basically cash management is concerned with managing cash flows that is cash inflows and cash out flows Zariyawati, Annuar, Taufiq and Rahim [19]. Major sources of cash inflow include cash from operating activities, sell of business assets among others. Sources of cash out flows include settling of creditors, purchase of inventory among others Smith [20]. Cash needs

to be efficiently managed and allocated to meet routine business objectives. The gap between cash expenses and cash collection enhances liquidity position, profitability leading to overall business growth over a period of time (Brinck, Soeren & Gemuenden, [15]).

2.2 Review of Theoretical Literature

Kytonen [21] identified three basic theoretical approaches to cash management as listed below:

- ✓ Monetarist theory of cash management.
- ✓ Operational theory of cash management.
- ✓ Financial theory of cash management.

2.2.1 Monetarist theory of cash management

Following Kytonen [21] monetary economists are concerned in the management of the organizations' money. Their primary objective has always been to describe the mechanism of the demand for money by firms, since it differs significantly from the behavior of other economic agents. Researchers have attempted to find a stable relationship between the quantity demanded for money and its determining factors in order to forecast demand for money. However, it should be noted that the demand for money is one of the most intensively investigated areas in the monetarist school of thought. Having investigated both long and short run behavior of economic agents within the macro and micro level, he suggested that the demand for money can be used to investigate decisions made in the cash management process.

2.2.2 Operational theory of cash management

Several operational models have been advanced to optimize the relationship between cash and marketable securities based on the firm's needs for cash, the predictability of these needs, the inter-relationship on marketable securities, and the cost of a transfer to cash and vice versa Kytonen [22]. However, only two basic transaction models are most commonly accepted in the financial literature thus: the Deterministic Baumol-Tobin [23] and the Stochastic Miller-Orr inventory models [24].

2.2.3 Financial theory of cash management

In finance theory, scholars are interested in finding out how cash together with all other liquid assets influence firm value and the optimal

capital structure of a firm. The theory considers cash management problems in the framework evaluation and in the financing mode of a firm. Cash management is a characteristic of liquidity management, which can be related to finance theory by recognizing its importance in an imperfect market Shin and Soenen [25]. However this can be achieved by adding cash balances to financial theoretic models, such as the Capital Asset Pricing Model (CAPM) or the Modigliani-Miller (M&M) model. The resulting effects of the inclusion of cash balances in such models show the significance of liquid assets on firm value (via the systematic risk component) and also for the optimal capital structure (via the liquidity slack concept) Van-Horne [26].

2.2.4 Theoretical motives for holding cash

According to the noble economist, John Maynard Keynes, there are three main motives for holding cash. These motives are adduced to: Transactionary, Precautionary and Speculative motives. However, Igbinosun [27] stated that since business organizations do not engage in speculative motives and marketable securities are mainly transactionary and precautionary motive, he then listed the following factors which determines the company's level of cash requirements; efficient planning and control of cash, company's expected cash flow, company's borrowing capacity, company's management attitude to risk, debt repayment schedule, size of the organization and cost of capital. However, it is upon this theory that we anchor this research work. He further explained how Attanasio et al. [28] used microeconomic data on household to estimate the parameter of the demand for currency derived from a generalized Baumol-Tobin model.

2.3 Empirical Literature

Earlier literature has explored different variables representing liquidity and its effect on profitability and examined the relationship of accounts payable management, accounts receivables management, inventory management and cash to cash cycle management with profitability management, providing different results as per how the length of cash cycle has been affecting profitability in terms of different proxies for profitability Deloof, [29]; Nobanee, Abdullatif & Al Hajjar, [30]; Nobanee, [31]; Lazaridis & Tryfonidis, [32]; Raheman & Nasr, [33]; Demirgunes & Samiloglu, [34]; Enqvist et al. [35]; Raheman et al. [14]; Mathuva, [36]; Danuletii,

[37]; Alipour, [38]; Maradi, et al. [39]; Nyabwanga, et al. [40]; Sharma and Kumar [25]; Raheman et al. [14]; and Gill, et al. [41]. Belal and Smirat [42] carried out an empirical investigation on cash management practices and its effect on the financial performance of SMEs in Jordan. The study concluded that cash management practices have significance influence on the financial performance of SMEs.

The study of Njeru et al. [43] sought to explore the effect of cash management on financial performance of deposit taking SACCOs in Mount Kenya Region. The empirical study concluded that there is need to introduce cash management controls in the SACCOs.

Gul, et al. [44] investigated the influence of working capital management (WCM) on performance of small medium enterprises (SMEs) in Pakistan. The duration of the study was seven years from 2006 to 2012. Their results suggested that APP, GROWTH and SIZE have positive association with Profitability whereas ACP (Number of Days Account Receivable), INV (Number of Day's Inventory), CCC (Cash Conversion Cycle) and DR (Debit Ratio) have inverse relation with profitability.

Oladipupo and Okafor [45] examined the implications of a firm's working capital management practice on its profitability and dividend payout ratio. The study focused on the extent of effects of working capital management on Profitability and Dividend Payout Ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria Stock Exchange over a 5 year period (2002 and 2006). Using both the Pearson product moment correlation technique and ordinary least square (OLS) regression technique, they observed that shorter net trade cycle and debt ratio promote high corporate profitability.

Almazari [46] investigated the relationship between working capital management (WCM) and firms' profitability for the Saudi cement manufacturing companies. The findings suggest that, as the size of a firm increases, profitability also increased. Besides, when the debt financing increased, profitability declined. Linear regression tests confirmed a high degree of association between working capital management and profitability.

Akoto et al. [47] analyzed the relationship between working capital management practices

and profitability of listed manufacturing firms in Ghana. Using panel data methodology and regression analysis, the study found a significant negative relationship between Profitability and Accounts Receivable Days. However, the firms' Cash Conversion Cycle, Current Asset Ratio, Size, and Current Asset Turnover showed a significant positive influence on profitability.

Omesa et al. [31] examined the relationship between Working Capital Management and Corporate Performance of manufacturing firms listed on the Nairobi securities exchange. The findings showed a negative relationship between working capital management and firm.

Nyabwanga et al. [48] assessed the effect of working capital management practices on the financial performance of SSEs in Kisii South District. A sample of 113 SSEs comprising 72 trading and 41 manufacturing enterprises was used. The findings of the study were that, working capital management practices were low amongst SSEs as majority had not adopted formal working capital management routines and their financial performance was equally on a low average.

Sharma and Kumar [49] examined the effect of working capital on profitability of Indian firms. The study further reveals that inventory of number of days and numbers of day's accounts payable are negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability.

Raheman, et al. [2] analyzed the impact of working capital management on firm's performance in Pakistan. The results indicate that the cash conversion cycle, net trade cycle and inventory turnover in days are significantly affecting the performance of the firms.

In a related study by Gill, Bigger and Mathur [50], the relationship between working capital management and profitability of 88 American firms listed on New York Stock Exchange was analysed. They found a statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. Dong & Su [34] observed significant association of cash conversion cycle with the return on investments of the companies.

Randall & Farris [51] argued that by implementing a collaborative cash to cash

management cycle and by adopting weighted average cost of capital will increase profitability of the firm. Johnson & Templar [52] stated that return on capital employed and length of cash cycle would be enhanced by change of proxy. The study of Ebaid [53] suggested that current cash flows have significant impact to enhance the profitability of the firm.

In Nigeria, Falope and Ajilore [54] used a sample of 50 Nigerian quoted nonfinancial firms for the period 1996 -2005. Their study utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profit and the average collection period, inventory turnover in days, average payment period and cash conversion cycle. Afza & Nazir [55] found a significantly positive relationship of working capital management and profitability. Uyar [56] also found significant association and linkage of working capital management with liquidity and profitability and concluded that firm size is negatively linked and related to cash conversion cycle and a negative opposite moving linkage of cash conversion cycle with profitability was observed. Luo et al. [57] stated that if the value of the firm improves, cash cycle will decrease.

Appuhami [58] observed that operating cash flows have significant impact on firm working capital management. Koumanakos [59] stated that the higher the average inventories are conserved the lower the rate of return.

In a related study, Hutchison et al. [60] observed a significant association between cash conversion cycle and return on equity of the companies. The result also suggested an inverse relationship between profitability and cash conversion cycle. Raheman & Nasr [33] reported a significant negative association of components of liquidity with profitability. Teruel & Solano [56] recommended that firms should delay in making the payments for efficient performance. Raheman & Nasr [33] stated that for better performance the time duration for collection of receivable should be kept short, while, Padachi [61] found out that if firms invest higher in inventories, the optimum level will diminish and profit will go down.

Nobanee et al. [30] suggested that for better performance of the firm, inventory must be converted into cash as early as possible. Eljelly

[62] found a significant inverse association and linkage between profitability and liquidity represented by the cash conversion cycle.

Filbeck & Krueger [63] suggested other factors that could possibly affect working capital management. Among these is interest rate. He argued that if interest rate rises it will create longer cash cycle period. Deloof [29] stated that for better performance the time duration for collection of receivable should be kept short.

Lyrودي & Lazaridis [64] argued that the company's profitability depends on working capital management and equally provided some support evidences to show that cash conversion cycle significantly affects liquidity of the company.

3. METHODOLOGY OF RESEARCH STUDY

3.1 Measurement of Dependent, Independent and Control Variables

The study takes Return on Assets and Return on Equity as measures of profitability to represent the dependent variables. It explains how firms and organizations can increase their revenue and generate sales by utilizing the available resources optimally. Firm size is taken as a control variable whereas cash conversion cycle, cash holding, cash flow, and firm growth, is considered as independent variable. The studied variables are calculated as follows:

$$\text{Return on Assets (RETOA)} = \text{Profit after Tax} / \text{Total Assets (\%)}$$

$$\text{Return on Equity (RETOE)} = \text{Profit after Tax} / \text{Shareholders' Total Equity (\%)}$$

$$\text{Cash Conversion Cycle (ACYCE)} = \text{Inventory Day} + \text{Receivable Day} - \text{Payable Day}$$

$$\text{Cash Holding (CASHT)} = \text{Cash to Total Assets (\%)}$$

$$\text{Cash Flow (FCFTA)} = \text{Free cash Flow} / \text{Total Assets (Free cash Flow is measured as Cash Flow from Operations Less Capital Expenditure)}$$

$$\text{Firm Growth (REVGR)} = \text{Percentage Change in Revenue}$$

$$\text{Size of Firm} = \text{Natural Log of Sales}$$

3.1.1 Research model

On the basis of several literatures which we have reviewed, the following relationships have been predicted to statistically test the hypothesis of the study.

$$\text{RETOA}_{it} = \alpha_0 + \beta_1 \text{ACYCE}_{it} + \beta_2 \text{CASHT}_{it} + \beta_3 \text{FCFTA}_{it} + \beta_4 \text{REVGR}_{it} + \beta_5 \text{FSIZE}_{it} + e_{it}$$

$$\text{RETOE}_{it} = \alpha_0 + \beta_1 \text{ACYCE}_{it} + \beta_2 \text{CASHT}_{it} + \beta_3 \text{FCFTA}_{it} + \beta_4 \text{REVGR}_{it} + \beta_5 \text{FSIZE}_{it} + e_{it}$$

3.2 Population and Sampling

For the purpose of the study, thirty five (35) service companies listed in the Nigerian Stock Exchange were selected to measure the impact of cash management on profitability of the studied sector.

3.3 Period of Study

Study takes into consideration 10 years financial statements data starting from 2008 to 2015.

3.4 Data Collection

Secondary data is collected from talk data STAT.

4. ANALYSIS OF EMPIRICAL DATA

The study investigates the impact of cash management practices on corporate performance using samples from listed companies in Nigeria for a Pool Data Sample period of 2008 – 2015. The variables for this study consist of Return on Assets, Return on Equity, Cash Conversion Cycle, Cash Flow, Firm Growth and Firm Size. The companies' population for this study consists of only quoted Nigerian companies that have 2008 to 2015 audited annual financial reports. We selected a sample of Services Providing Companies (SPC) that has 2008 – 2015 audited annual financial report. In identifying the possible firm's specific characteristics and exogenous factors that would influence firm's performance we conducted descriptive statistics, correlation matrix, and Pool Ordinary Least Square Regression. However, some post estimation test was equally conducted. The results obtained are presented and analyzed as follows.

Table 1 shows the mean (average) for each of the variables, their maximum values, minimum values, standard deviation, skewness and

Kurtosis statistics (Data Normality Test). The results in Table 1 provided some insight into the nature of the selected quoted companies that were used in this study.

Firstly, the maximum value of cash conversion cycle of 2134.69 was recorded for UAC properties who engage in real estate services while the statistics equally show that the average conversion rate for the service industries in Nigeria is less than one day. The maximum growth rate for the sampled companies was seen to stand at 140% and was recorded for Pharma-Deko pharmaceutical company in year 2011. However all the service firms listed in the study grew at an average growth rate of 9.4% for the period under study. In describing the data obtained for firm size we observed that the sample is dominated by either small or large firms. This is evident from the small value of its standard deviation of 0.71. The statistics shows that all the variables of interest are normally distributed and satisfies the test of significance at 1% level of significance. The descriptive statistics in general revealed that there is no sample selection bias or outlier in the data that would impair the generalization from this study.

In Table 4, we focus on the correlation between firm performance and the individual explanatory variables. The results show that the dependent variable of Return of Assets is positively and weakly associated with all the explanatory variables. This indicates that although both dependent and independent variables move together towards the same direction, its strength of association is relatively weak. Again the correlation statistics show that the dependent variable of Return on Equity is positively associated with all the explanatory variables except for the variables of Cash Holding, Cash Flow, and Firm Growth. However no variable of interest showed high positive correlation that would have created suspicion for the problem of multi colinearity, although the Variance Inflation Test was used to validate this result.

The Table 3 shows the result obtained from the variance inflation factor analysis. Here the mean value of 1.22 and 1.33 which is less than the bench mark value of 10 indicates the absence of multi colinearity.

4.1 Pooled Regression Analysis

In the RETOA model, the significant positive relationship between cash conversion cycle and return on assets indicates that the shorter the

conversion cycle, the better the performance of the firms within the service industry in Nigeria. Clearly, the result connotes that all three stages of the conversion cycle have been well and successfully managed as described by Johnson & Templar [52]. The service industries in Nigeria have applied policies that have reduced inventory days and a long term balance in the speed of collecting account receivables which have provided sufficient liquidity for the service companies to do its job efficiently. This finding conforms with the result of Deloof [29], Nobanee et al. [30], Raheman A, Afza T., Qayyum A, Bodla MA. [14], Belal and Smirat [42], Akoto et al. [47], Sharma and Kumar [49] but negates the findings of Eljelly [62], Teruel and Solano [65], Omesa et al. [51], Falope Ajilore [54]. Hence we adopt the alternative hypothesis of significant positive relation between Cash Conversion Cycle and Firm Performance in Nigeria.

The study also showed another significant positive relationship between cash holding and firm performance. This observation could be explained along Deloofs [29] notion that cash conversion receivables and inventories could be easily converted to cash. This means that return on assets is an outcome of holding huge amount of cash. This relationship reflects the effectiveness of hedging manager's behaviors that such strategies help Nigerian Service Providing Firms avoid cash shortages and allows for easy cash payment obligations which positively affects firm profitability. This result takes the same position with the result of Fresard [50], Pinkowitz and Williamson [66] and allows us to reject the null hypothesis of no significant positive relation between cash holding and firm performance in support of the alternative hypothesis.

Cash flow is insignificant and negatively related to firm performance. This finding negates the study of Ebaid [67]. In this study the variable of firm size was regressed against the dependent variable of firm performance and the empirical evidence suggest that firm size has a negative influence on firm performance so that a percentage increase in firm size leads to an insignificant decrease in firm performance. This result suggests that this relationship should not be taken seriously due to its insignificant impact.

In the model of Return on Equity, the variables of firm size, firm growth and cash flow indicated a negative relationship with the variable of firm performance. However, only the variable of firm

size showed a significant negative relationship at 5% level with the dependent variable. In our study model, the positive relationship between the variable of Cash Conversion Cycle and Return on Equity agrees with the finding of Pallazzo [68] who studied a data set of US public

companies and found evidence that cash conversion cycle is positively related with performance of the firm. However the study suggests that the relationship should not be taken seriously since its impact did not pass the test of significance.

Table 1. Descriptive statistics result

	Mean	Max	Min	Median	Std dev	Jarque Bera
RETOA	3.20	89.54	-39.78	3.06	13.45	22.65 0.00***
RETOE	11.34	1351.82	-751.82	8.04	120.29	57462.40 0.00***
ACYCE	-102.84	2134.69	-37322.23	25.36	2546.67	397549.3 0.00***
CASHT	10.19	111.80	0.00	4.66	13.61	2621.47 0.00***
FCFTA	0.35	11.66	-6.49	0.13	1.69	4646.13 0.00***
FSIZE	6.32	7.41	3.92	6.42	0.71	33.96 0.00***
REVGR	9.41	140.36	-60.87	5.65	28.74	217.31 0.00***

Table 2. Heteroskedasticity test result

Variable	Scaled explained SS	Prob. Chi square
RETOA	99.35	0.00
RETOE	3.89	0.56

Table 3. Pool ordinary regression result

Variable	Retoa model	Rotoe model
C	2.80 (0.44) {0.66}	34.56 (0.47) {0.64}
ACYCE	0.00 (7.72) {0.00}***	0.00 (0.18) {0.86}
CASHT	0.47 (4.36) {0.00}***	0.08 (0.14) {0.89}
FCFTA	-0.11 (-0.21) {0.84}	-2.76 (-0.57) {0.57}
REVGR	0.02 (0.55) {0.57}	-0.61 (-2.15) {0.03}**
FSIZE	-0.71 (-0.72) {0.42}	-2.73 (-0.23) {0.81}

R-Squared = 0.24
 Adj R-Squared = 0.22
 Wald F = 36.65
 Prob (Wald F- Stat) = 0.00

Table 4. Variance inflation factor result

Variable	RETOA	RETOE
ACYCE	1.86	1.00
CASHT	1.22	1.03
FCFTA	1.07	1.03
REVGR	1.76	1.02
FSIZE	1.03	1.01
MEAN VIF	1.33	1.22

Table 5. Ordinary correlation statistics

Correlation t-statistics	RETOA	RETOE	ACYCE	CASHT	FCFTA	REVGR
RETOA	1.00	0.12	0.10	0.48	0.05	0.10
	-	1.85	1.46	8.06	0.78	1.44
RETOE	0.12	1.00	0.00	-0.01	-0.03	-0.15
	1.85	-	0.05*	0.15	-0.50	-2.17

5. CONCLUSION AND RECOMMENDATION

The relationship between cash conversion and corporate performance is verified in this study in a pooled ordinary regression and a Pearson correlation analysis. The study established a positive and significant relationship between firm performance and cash conversion cycle for services industries in Nigeria. This result indicates the necessity to formulate policies that will result in lesser cash conversion cycle for performance enhancement.

In a positive conversion cycle, companies do an excellent job of collecting on accounts receivables. This may be traceable to incentives offered to customers to pay quickly or they have focused on friendly and efficient collections. Quick collections lower the amount of uncollectible debt. A positive cash conversion cycle means that the company can leave a smaller allowance for uncollectible accounts and boost higher assets.

Generally cash management is based on cash conversion cycle and is considered as an important factor in enhancing the performance of companies. Muscettola [48] since it shows how efficient a firm is in its payment of bills, collection of payments and selling of inventories. The cash cycle is a very powerful tool for examining how well a manufacturing company's working capital is being managed. Financial managers have to run the service companies for longer periods hence they make decisions to manage working capital by creating a balance between the available current assets and current liabilities.

Hence the study recommends that service firms should adopt policies that enables them sell inventories and collect receivables quickly for improved efficiency and corporate solvency. However, researchers have opined that shortening the cash conversion cycle could harm the company's operations thus reducing profitability. However identifying optimal levels of inventory receivables and payables where total holdings and opportunities cost are minimized and recalculating the cash conversion cycle according to these optimal points provides more complete and accurate insights into the efficiency of working capital management.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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