CENTRAL ASIAN JOURNAL OF INNOVATIONS ON TOURISM MANAGEMENT AND FINANCE

Volume: 04 Issue: 05 | 2023 ISSN: 2660-454X

https://cajitmf.centralasianstudies.org

Working Capital Management as Determinant of the Performance of Publicly Listed Companies in Nigeria

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Received 24th Mar 2023,
Accepted 25th Apr 2023,
Online 26th May 2023

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Abstract: The present research aimed to evaluate whether the management of working capital can act as a determining factor in the financial performance of companies that are publicly traded in Nigeria. The research design employed in the study was ex post facto, and the data utilized were secondary, consisting of measures of working capital management (accounts receivables and accounts payables in days) and financial performance measures (return on capital employed) obtained from the annual reports and accounts of fourteen (14) service companies spanning the period of 2012 to 2021. The acquired data were subjected to analysis through the utilization of fixed and random effects panel data estimation techniques. The study's results indicate that the management of working capital plays a crucial role in determining the performance of service-oriented companies that are publicly listed in Nigeria. The study's results suggest that companies in Nigeria should prioritize the implementation of effective working capital management practices in order to improve their overall performance. As such, it is recommended that companies focus on optimizing their working capital management strategies. In addition, management of service companies must ensure that longer days are taken to pay back creditors; this would be better for improving the performance of service companies.

Key words: Working capital management; Financial performance; Accounts payable; Accounts receivable; Return on capital employed.

1. INTRODUCTION

Working capital (WC) is an issue that has existed for as long as there have been businesses and is considered to be an everyday one. Abbas and Isiaka (2021) argue that working capital (WC) is an essential metric for evaluating the financial health of any organization, public or private. WCM is a

significant part of a company's operational capital with other non-current assets including plant and equipment, properties, buildings, etc.

Working capital, as described by Umenzekwe, Okoye, and Aggreh (2021), is the money a company has on hand to run its day-to-day activities. Working capital is measured by a company's net current assets. Nguyen, Pham, and Nguyen (2020) argue that WC is the driving force behind every successful enterprise. Similarly, akir and Küçükkaplan (2020) define WC as the resource needed by an organization on a daily basis to transform raw materials into completed products for sale to end users. Management must take WC seriously if the company is to achieve long-term success and sustainability (Demireli, Başci, & Karaca, 2019).

Publicly traded firms in Nigeria rely heavily on the success of their financial departments, one of which is working capital management. Working capital management, as defined by Gitman and Zutter (2014), is the process through which an organization makes sure it has enough cash on hand to satisfy its immediate obligations. To ensure that there is enough cash flow to cover the company's short-term commitments, working capital management seeks to achieve a balance between the company's current assets and current liabilities.

It is impossible to overstate the value of effective working capital management to the success of publicly traded firms in Nigeria. A company's profitability, operational efficiency, and financial performance may all benefit from better management of its working capital. Oke and Adeyemi (2017) state that businesses with well-managed working capital are in a stronger position to achieve both high investments returns and long-term growth.

Contrarily, a company's financial performance might suffer if its working capital is managed poorly. For instance, a fall in profitability and liquidity might occur if a firm has an excessive amount of inventory or accounts receivable, both of which can negatively impact cash flow. Too much short-term debt may have a similar effect on a company's credit rating and reputation if the debtor has trouble paying its financial commitments.

Current assets (cash, inventory, etc.) are the focus of working capital management (WCM). Management of WC ensures that the company's obligations do not exceed its liquid assets. The day-to-day operations of enterprises are influenced by WCM's need that an appropriate equilibrium be maintained between receivables, inventory, and payables (Ironkwe &Wokoma, 2017).

According to Etale and Bingilar (2018), WCM is the practice of managing a company's assets and liabilities in such a way that the danger of not being able to pay immediate bills is mitigated and unnecessary purchases of assets are prevented. This highlights the importance of effective WCM, since it has been shown to have a major impact on a company's financial performance and profitability (Hiram & Willy, 2017). Return on capital employed (ROCE) and return on investment (ROI) are the two primary metrics of financial performance that have been shown to be affected by WCM in the academic literature.

Despite this well held belief in the accounting literature, ROCE and ROI have been underutilized in the context of WCM. Although there are many theoretical and empirical works on the connection between WCM and financial performance of companies in both developed and developing countries (Hiram & Willy, 2017; Nguyen et al., 2020; Cakir & Küçükkaplan, 2020; Abbas & Isiaka, 2021; and Umenzekwe et al., 2021), empirical studies on publicly listed companies in Nigeria are scarce.

In addition, there is a need to conduct an analysis to determine whether or not WCM acts as a determinant of the financial performance of publicly listed service firms in Nigeria given the contradictory findings of existing studies on the subject. The rest of this paper is broken up into the following sections: An Analysis of the Existing Literature, Research Procedures, Findings, Discussion, and Suggestions

2. Review of Related Literature

2.1. Conceptualization of Working Capital Management (WCM)

The idea of Working Capital Management (WCM) revolves on balancing a company's current assets with its current liabilities in order to maximize the company's liquidity and profitability (Odiri, 2016). According to Joseph and Amah (2016), successful WCM occurs when management is able to balance the company's short-term assets and liabilities in a manner that ensures the company can meet all of its short-term financial commitments as they come due.

The term "working capital management" (WCM) was used by Tanveer, Muhammad, and Muhammad Sadaf (2016) to describe the practice of overseeing a company's short-term assets and liabilities without overinvesting in the former. Therefore, Working Capital Management is an accounting method that seeks to maintain a healthy balance between short-term assets and liabilities.

WCM is seen as efficient by Chen, Fanny, Ellen, and Dan (2016) in terms of cash conversion, operating cycle length, AR/AP cycles, inventory turnover times, and other metrics. Adamu and Hussaini (2015) argue that WCM's goals may be explained by the fact that they have a direct impact on a company's liquidity and profitability.

Inventory turns, cash conversion, average collection and payment times, inventory conversion times, AR and AP cycles, and net trading cycles are all aspects of WC management. Two of the WCM metrics, AP and AR, were used in this analysis. WCM is a key factor in the financial health and productivity of businesses, according to the research. Despite this stance, however, very little research has examined whether or not WCM metrics (such as accounts payable and receivable) impact the financial performance (return on capital employed) of publicly traded service firms in Nigeria.

2.2. Financial Performance

There is a wealth of literature defining and discussing the topic of financial performance. Financial ratios (Odiri, 2016) express correlations between variables found in yearly reports and accounts, allowing for a more holistic assessment of a company's financial performance. There are a variety of methods in the accounting literature for gauging financial performance at both the firm and market levels, including Tobin's Q, share price value, return on invested capital, earnings per share, book value per share, earnings yield, and others.

Return on capital employed (ROCE) was the only monetary efficiency metric utilized in this analysis. One of the best ways to judge a company's performance is by looking at its return on capital employed (ROCE; Adamu & Hussaini, 2015). Return on capital employed (ROCE) is calculated by dividing operating revenue by total capital used. According to Abbas and Isiaka (2021), a greater return on capital employed (ROCE) indicates better financial performance.

ROCE is a great indicator of a company's performance and success, say akir and Küçükkaplan (2020) and Nguyen et al. (2020). Although previous research has established a connection between WCM and the financial performance of businesses in both developed and developing countries, it is unclear whether or not WCM is a significant determinant of ROCE for publicly listed service companies in Nigeria. Taking all of this into consideration, we proposed a conceptual model of the research to serve as a basis for estimating the study's empirical model.

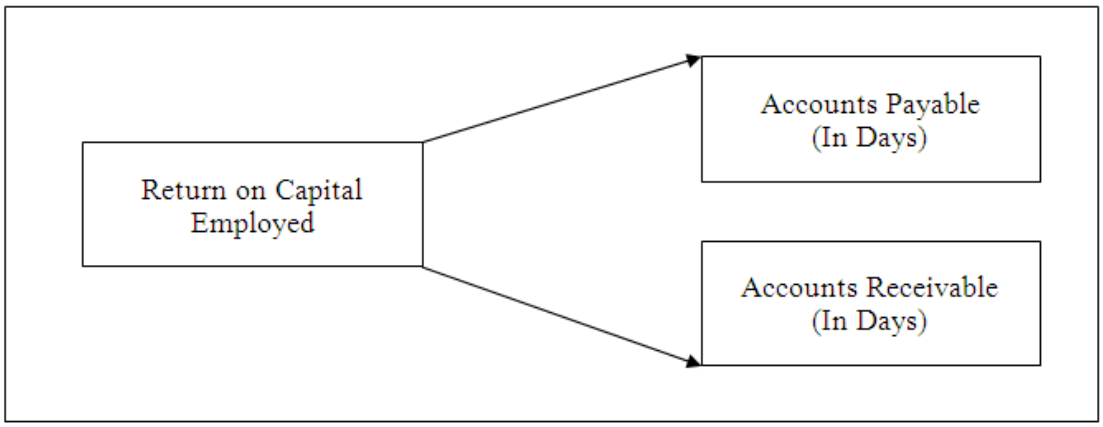

Figure 1: Conceptual Model of the Study

Source: Conceptualized by the Researchers (2023)

2.3. Theoretical Framework

There are several theories that have been proposed to explain the determinants and consequences of working capital management. Here are some examples:

1. Trade-off theory: This theory suggests that there is a trade-off between profitability and liquidity, and firms must strike a balance between the two when managing their working capital. The theory argues that holding too much working capital can reduce profitability, while holding too little can increase the risk of financial distress (Deloof, 2003).
2. The Pecking Order Theory proposes that businesses would use their own cash reserves before turning to debt and eventually to stockholders for funding new projects. So, businesses may manage their working capital to bring in money from other sources and cut down on borrowing (Myers, 1984).
3. Free cash flow theory: This theory suggests that firms with excess cash flows may engage in inefficient working capital management practices, such as holding excess inventory or delaying payments to suppliers. This can lead to reduced profitability and lower shareholder value (Jensen, 1986).
4. Agency theory: This theory suggests that conflicts of interest between managers and shareholders can influence working capital management decisions. For example, managers may be incentivized to hold excess working capital to reduce the risk of financial distress, even if it reduces shareholder value (Smith and Warner, 1979).

This study was hinged on the agency theory (AGTH). The AGTH is an individualistic model predicated on the ideology of in-built conflicts between owners of wealth and third parties (managers) (Donaldson & Davies, 1991). The AGTH acknowledges that companies are formed on the basis of the principals (wealth owners) and agents (management). Agents are paid by their principals for doing tasks on their behalf, such as improving the firm's financial results via more efficient administration of its working capital.

Jensen (1986) opined that due to ownership separation of management, conflicts may ensue because the root of opportunistic behaviour may ensue between owners of wealth and the management. Therefore, AGTH specifies the nature of the connection between a principle and an agent in which the latter acts on the former's behalf and has authority to make decisions on the principal's behalf.

Matos (2001) posited that efficient management incurs less costs (for instance, management of working capital), thereby improving financial performance of companies. The theoretical viewpoint guiding this

study is connected to the ideology that when management (agents) are able to put in place efficient WCM, owners' wealth (principal) will improve, thus resulting to a better financial performance.

3. RESEARCH METHODS

The present investigation employed an ex-post facto research design, as it facilitated an examination of whether working capital management (WCM) functions as a determinant of the performance of publicly listed companies in Nigeria. The research sample consisted of all non-financial corporations that were publicly listed on the trading floor of the Nigerian Exchange Group (NGX).The non-financial sector of Nigeria comprises a total of seventy-five (75) publicly listed companies.

Furthermore, stratified random sampling technique was used in selecting service companies publicly listed on the NGX. As at 31stDecember, 2022, there were twenty (20) publicly listed service companies on the NGX, out of which fourteen (14) were systematically selected on the basis of inclusion and exclusion criteria.

The information used in the research came from the websites and annual reports of NGX-listed service businesses from 2012 to 2021. WCM was proxied using accounts receivable and accounts payable (in days) while financial performance was proxied using return on capital employed. Against this backdrop, the empirical model for the study was estimated as:

ROCE = f (ACPAY, ACREC) – eq. 1

$ROCE_{it} = \delta_0 + \delta_1 ACPAY_{it} + \delta_2 ACREC_{it} + \varepsilon_{it}$ – eq. 2

The study's regression model, in both its implicit (Equation 1) and explicit (Equation 2) forms, may be seen below. Where: *ROCE*= Return on capital employed; *ACPAY*= Accounts payable (in days); *ACREC* = Accounts receivable (in days); ε_{it}= Error term; δ= Regression coefficient of the variables. Financial results serve as the dependent variable, with WCM measurements of AR and AP serving as the independent variable.

Panel data were collected for the years 2012 through 2021 for the Nigerian service businesses that are publicly traded. The information was evaluated by means of a panel data estimate technique with both fixed and random effects. The analysis used diagnostic, descriptive, and inferential statistical techniques, including the use of fixed and random effects regression, variance inflation factor, heteroscedasticity, minimum and maximum values, kurtosis, and Pearson correlation. The a priori hypothesis holds that if WCM measurements improve by one unit, service organizations in Nigeria may anticipate a corresponding one unit increase in their financial performance.

4. RESULTS

Table 1: Summary of Descriptive Statistics

Statistics	Return on Capital Employed (ROCE)	Accounts Payable (ACPAY)	Accounts Receivable (ACREC)
Mean	2.5100	389.55	167.83
Median	4.5750	185.39	95.065
Standard Deviation	16.288	66.091	90.656
Minimum Value	-92.69	0	0.51
Maximum Value	45.56	4289.6	866.99
Kurtosis	20.011	20.482	6.9616
Skewness	-3.3731	4.0136	2.0992
No. of Observation	138	138	138

Source: Researchers' Compilation, 2023

Descriptive data for ROCE and the two independent variables (ACPAY and ACREC) for the sample of listed service businesses in Nigeria from 2012-2021 were summarized in Table 1. It was found that ACPAY recorded the highest mean of 389.55, followed by ACREC (167.83), with corresponding medians of 185.39 and 95.065, respectively. This is expected since the WCM measures were expressed in days. Thus, this result suggests that all things being equal, the average payable and receivable days for the listed service companies in their inventory are 390 days (ACPAY) and 168 days (ACREC).

The dispersion was largest for ACPAY (66.091), and lowest for ROCE (16.288). According to the standard deviation, the financial performance indicator fluctuated by almost 16% on average. The minimum for ACPAY is zero and 0.51 for ACREC, an indication that there are zero days it would take some listed service companies to pay their inventories while it would take 12 days to get receivables.

Furthermore, the skewness values for the WCM measures of ACPAY (4.0136) and ACREC (2.0992) are positive except for ROCE (-3.3731), which is negative. This result implied that all the WCM measures moved in a similar direction except ROCE, which moved in the opposite direction from the WMC measures in the study. Besides, the kurtosis values for ROCE (20.011), ACPAY (20.482), and ACREC (6.9616) had a kurtosis value greater than 3, an indication of leptokurtic distribution (distribution that could lead to an increased likelihood of tremendous negative performance of service companies in Nigeria).

Table 2: Pearson Correlation Result

Statistics	ROCE	ACPAY	ACREC
ROCE	1.0000		
ACPAY	-0.0822	1.0000	
ACREC	-0.1906	0.7686	1.0000

Source: Researchers' Compilation, 2023

For the listed service firms in Nigeria, the findings of the correlation between the dependent and independent variables are shown in Table 2. The result revealed that all the WMC measures, such as ACPAY (r = -0.0822) and ACREC (r = -0.1906), were negatively correlated with performance measures (ROCE). This data reveals that ROCE for listed service businesses in Nigeria is negatively correlated with WCM metrics (ACPAY and ACREC).

Table 3: Result of the Variance Inflation Factor (VIF)

Parameters	VIF	1/VIF
ACPAY	2.44	0.409179
ACREC	2.44	0.409179
Mean VIF	2.44	

Source: Researchers' Compilation, 2023

The results of the multicollinearity test for the NGX-listed service providers in the sample are shown in Table 3. The panel dataset meets one (1) of the axioms of panel linear regression since the mean VIF (2.44), which is smaller than the standard mean VIF benchmark of 10, indicates that there is no multicollinearity disadvantage in the model of WCM and service providers' performance in Nigeria. Not only that, but no correlation coefficient was more than 0.8 (Gujarati, 2003; referenced in Okoro & Ekwueme, 2021; and Okoro & Ihenyen, 2020), indicating that no two variables were perfectly associated.

Table 4: Breusch-Pagan/Cook-Weisberg Test for Heteroscedasticity

F-Value = 78.44
Prob. F = 0.0000

Source: Researchers' Compilation, 2023

The statistical analysis indicates that the Breusch-Pagan/Cook Weisberg F-value is 78.44 with a probability greater than F of 0.0000. This finding, which is significant at the 0.05% level, suggests that there is no evidence of heteroskedasticity in the variables under investigation. Furthermore, it is probable that the panel dataset does not exhibit unequal variance. This outcome additionally fulfills an additional principle of linear panel regression.

Table 5: Fixed and Random Effect Regression for WCM Measures (ACPAY and ACREC) and Financial Performance (ROCE) of the Publicly Listed Service Companies

Estimator(s)	Fixed Effect (FE)		Random Effect (RE)	
Variable(s)	Coefficient	Prob.	Coefficient	Prob.
ACPAY	0.0028 (0.87)	0.388	0.0308 (1.19)	0.236
ACREC	-0.0259 (-2.27)	0.025	-0.0266 (-2.35)	0.019
_cons.	5.8952 (3.14)	0.002	5.6386 (3.02)	0.003
F-value	3.47			
F-Probability	0.0340			
R-Squared (within)	0.0531			0.0520
R-Squared (between)	0.0800			0.0286
R-Squared (overall)	0.0454			0.0464
Wald Ch2(3)				6.47
Prob. Ch2				0.0393
Hausman Test	Chi2(2) = 9.41		Prob>Chi2= 0.000	

Source: Researchers' Compilation, 2023

The financial performance (ROCE) and WCM measurements (ACPAY and ACREC) of publicly traded service firms in Nigeria are shown in Table 5. The RE result showed that the coefficient is 0.0308 (ACPAY), indicating that the sampled service companies in Nigeria's ACPAY will lead to approximately 3.08% (increase) changes in ROCE. More so, the ACREC (-0.0266) will lead to approximately 2.66% (decrease) changes in ROCE; this situation is similar to what was obtained in the FE result.

In addition, the t-test result of ACPAY demonstrated that ACPAY favourably and insignificantly effects ROCE (t = 0.87; prob. = 0.388). On the other hand, it was shown that ACREC (t = -2.27; prob. = 0.025) negatively and significantly influences the ROCE of publicly listed service companies in Nigeria.

Overall, the coefficient of determination (R2) for FE is 0.0454, whereas the coefficient of determination (R2) for RE is 0.0464. This means that the WCM measures as a whole accounted for around 4.64 percent of the variance in ROCE. Based on the results of the Hausman test, FE is more effective than RE (Prob> Chi2 = 0.0000 0.05). WCM (ACPAY and ACREC) showed joint substantial impacts on the financial performance (ROCE) of publicly listed service businesses in Nigeria, as shown by F = 3.47 and prob. Chi2 = 0.0340 0.05.

Finally, the findings imply that service providers in Nigeria might benefit financially by extending the number of days it takes to repay debtors. Finding that WCM influences financial success is consistent with the findings of Abbas and Isiaka (2021) and Akir and Küçükkaplan (2020).

5. Conclusion and recommendations

When it comes to the bottom line, it's reasonable to assume that a company's working capital management practices will have a major bearing on the success of any modern enterprise that has significant amounts of cash on hand. Although this may be the case, there are businesses that have only modest amounts of cash invested in working capital, and this may or may not have an effect on the company's financial results. As a result of these divergent opinions, the purpose of this research was to determine whether working capital management is a factor in the financial success of publicly traded service firms in Nigeria.

For this study, we relied primarily on secondary data, which we gathered from the financial statements and annual reports of Nigerian service companies listed on public stock exchanges between 2012 and 2021, focusing on two indicators of working capital management (accounts payable and receivable) and one indicator of financial performance (return on capital employed, or ROCE). Descriptive, diagnostic, and inferential statistics were used to examine the gathered data.

Working capital management was shown to be a significant predictor of profitability for Nigeria's publicly traded service firms, both in the fixed and random effects panel data regression analyses. Based on the results, it was suggested that businesses in Nigeria use effective working capital management to boost their operations. The productivity of service businesses would increase if their management would take more time to repay their debtors.

In conclusion, the success of publicly traded firms in Nigeria is heavily dependent on the efficiency with which their working capital is managed. Businesses that manage their working capital well see increases in profitability, decreases in operational expenses, and better bottom lines overall. Therefore, effective working capital management practises are crucial for Nigerian businesses to achieve long-term development and profitability.

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