



EFFECT OF WORKING CAPITAL MANAGEMENT PRACTICES ON PROFITABILITY OF LISTED COMPANIES IN RWANDA: A CASE OF BRALIRWA LTD (2011-2021)

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ABSTRACT

This study aimed at assessing the effect of WCM practices on the profitability of listed companies in Rwanda. Specifically, the study wanted to establish the influence of Average Collection Period (ACP), Average Payables Period (APP), Inventory Conversion Period (ICP), Cash Conversion Cycle (CCC) on the profitability of BRALIRWA LTD. Data were collected from audited financial statements of BRALIRWA LTD over 10 years (2011-2021). Data were analyzed using descriptive and inferential statistics. Findings revealed a negative ($\beta = -.258$) and statistically insignificant ($p\text{-value} = .102 > .05$) relationship between ACP and the profitability of BRALIRWA LTD. Moreover, a unit increase in ACP will result in a proportional reduction in the ROA of BRALIRWA LTD. Findings also showed that there is a positive ($\beta = .367$) and statistically significant relationship ($p\text{-value} = .001 < .05$) between the APP and the profitability of BRALIRWA LTD. Furthermore, there was a negative ($\beta = -.237$) and statistically insignificant ($p\text{-value} = .001 < .05$) relationship between ICP and the Profitability of BRALIRWA LTD and, holding other factors to a constant zero, an increase in ICP by one day would result in a decrease of .237 percentage in the profitability of BRALIRWA LTD. Findings also demonstrated the presence of a negative ($\beta = -.256$) and statistically significant relationship ($p\text{-value} = .002 < .05$) between the Cash Conversion Cycle and profitability of BRALIRWA LTD at a 5% level of significance. The study concluded that since it is anticipated that the method in which working capital is handled would have a substantial influence on those organizations' profitability, companies can achieve optimum WCM by keeping a healthy balance between liquidity and profitability. WCM practices are significant determinants of the profitability of listed companies and one of a company's most important financial decisions. The profitability of BRALIRWA LTD was therefore strongly impacted by WCM procedures as determined by Average Collection Period (ACP), Average Payables Period (APP), Inventory Conversion Period (ICP), and Cash Conversion Cycle (CCC). It was recommended that BRALIRWA LTD should implement an efficient monitoring system that flags any payments made in advance of the deadline stipulated by the suppliers. A just-in-time purchasing strategy for necessary goods and materials should be used by BRALIRWA LTD. By purchasing goods as late as feasible and having products delivered in tiny amounts when required, this should be planned to reduce on-hand inventories.

Key words: Working Capital, Average Payables Period, Average Collection Period, inventory Conversion Period, Cash Conversion Cycle, profitability, manufacturing companies

1.0. INTRODUCTION

1.1. Background of the study

Business entities exist to increase the investment worth of their owners. The achievement of this purpose necessitates a prudent financial strategy and the establishment of responsive adoption processes (Almazari, 2018). Consequently, working capital management is a must for any company aiming for sustained profitability and value (Akoto *et al.*, 2018; Musau, 2019). Working capital management is a sensitive part of financial management that involves figuring out the amount and composition of current assets and how to finance them (Ahmed *et al.*, 2017; Muya & Gathogo, 2019). It also involves making sure that a company has enough cash flow to cover its operating costs and short-term obligations (Akoto *et al.*, 2018; Musau, 2019).

Working capital comprises cash, inventories, account payables, and receivables (Musau, 2019). Mutai *et al.* (2019) explained that net working capital is the difference between current assets and current liabilities and indicates a company's capacity to meet its short-term financial obligations. Therefore, if the value of current assets is less than the value of current liabilities, the net working capital would suggest a deficit in working capital, whereas a greater amount of current assets would indicate a surplus in working capital (Musau, 2019). Therefore, a company's WCM strategies are best shown by what they do with their current assets and liabilities. Planning and regulating current assets and current liabilities so that excessive and inadequate investments are avoided as a means of achieving efficiency is at the heart of effective working capital management (Akoto *et al.*, 2018; Musau, 2019). Raheman and Naser (2017) pointed out that effective planning and control of current assets and liabilities are essential for achieving a healthy balance between profitability and liquidity.

Anastasia *et al.* (2017) showed that WCM is at the centre of corporate finance because it has a direct effect on a company's cash flow and profits. Purchasing some goods necessitates the creation of accounts payable, which must be paid by a specific date in the future (Anastasia *et al.*, 2017). Ross *et al.* (2018) and Anastasia *et al.* (2017) separately indicated the "Account Payable Period" is the time between inventory receipt and payments for inventories. The Account Payable Period (APP) depicts the average time between the purchase orders and the cash payments for the purchases (Akoto *et al.*, 2018; Musau, 2019). Adhikari (2020) showed that one method for analysing accounts receivable is to utilise the average collection period (ACP). Kakaeto *et al.* (2016) said that the ACP shows how long it takes on average to get money to a business. Osman *et al.* (2017) indicated that the Inventory Conversion Period (ICP) tracks the average pace at which inventories move through and out of a company. Subramanyam and Wild (2019) showed that ICP refers to the time it takes for a company to purchase raw materials and convert them into sales. A cash conversion cycle (CCC) is the time frame from when money is actually spent on purchases to when receivables are recovered from sales of goods or services (Akoto *et al.*, 2018).

Several authors have studied the relationship between working capital management and the profitability of businesses. Ching *et al.* (2011), for example, evaluated the relationship between

working capital management and profitability in Brazilian listed enterprises and found that good working capital management was crucial to achieving profitability. Ahmed *et al.* (2017) examined the relationship between working capital management and corporate profitability of companies listed on the Athens Stock Exchange and found a statistically significant correlation between gross operating profit and the cash conversion cycle. Mengesha *et al.* (2019) investigated the effect of working capital management on the financial performance of selected listed companies in Ethiopia. They discovered that the cash conversion cycle had a significant negative relationship with the return on assets and that managers could increase firms' profitability by enhancing working capital management measures. Mwangi (2018) evaluated the relationship between working capital management and the financial performance of private hospitals in Kenya and discovered that the average payables period had a negative correlation with profitability. The typical length of time it takes creditors to pay their invoices was cited as the reason hospitals did not generate much revenue.

1.2. Problem Statement

WCM entails the systematic control of cash inflows and outflows as well as the overall administration of all activities in a business (Almazari, 2018). Capital is the original value that underpins an enterprise's success. Working capital management is the most important approach to utilize for a productive business because it is linked to the management of cash, inventories, payables, and receivables. Efficient working capital management is critical to a company's survival. This is based on the idea that having too much capital indicates inefficiency but having too little cash on hand indicates that the business's survival is in jeopardy (Niyibizi, 2018). Most businesses do not have enough stock, debtors, or cash. Because of this, the company cannot meet its short-term obligations that are coming due and its future operational needs;

However, working capital management of listed companies in Rwanda has been confronted with cash constraints and WCM challenges such as failure to meet operational needs, failure to pay workers' salaries on time, and other operational requirements, resulting in lower productivity through strikes and go slows, which in turn affect firms' performance and profitability (RCMA, 2020). Many of the listed companies in Rwanda have seen their profits drop and their performance get worse. The RCMA (2020) says that this is because the companies don't have enough operating capital. Without enough operating capital, a company can't expand or make more sales, which hurts its growth and profits.

Given the importance of WCM, different researchers examined the relationships between working capital management and the profitability of different firms in different countries. Researchers such as Omesa *et al.* (2018) respectively investigated the relationship between working capital management and performance of small and medium-sized enterprises in Kisii South District and 20 manufacturing firms listed on the Nairobi Securities Exchange. Musau and Wangomba (2019) and Gill *et al.* (2010) looked at the relationship between working capital management and profitability for companies listed on the Karachi Stock Exchange and the New York Stock Exchange, respectively. Akoto *et al.* (2018) looked at the relationship between

working capital management and profitability for companies listed on the Ghana Stock Exchange.

Nevertheless, there are a few studies on WCM and profitability of companies in Rwanda, particularly those listed on the Rwanda Stock Exchange (RSE). For example, Ishaazi and Barayandema (2019) examined the influence of WCM on the profitability of SMEs in Rwanda, focusing on the case of Urwibutso Enterprise. Niyibizi (2018) evaluated the WCM as a foundation of strategic competitiveness for SMEs in Rwanda. Murekatete (2019) assessed the effect of WCM on the performance of commercial banks in Rwanda based on FinaBank Rwanda and Rudacogora *et al.* (2021) examined the effect of WCM on the profitability of manufacturing companies in Rwanda. However, these studies provide little or no evidence of the influence and relationship between working capital management practices and the profitability of listed companies in Rwanda. So, the goal of this study is to fill the gap in the literature by giving real-world data on how working capital management affects the profitability of listed companies in Rwanda.

1.3. Objectives of the study

The general objective of this study is to examine the effect of working capital management practices on the profitability of listed companies in Rwanda. Specifically, the study was guided by the following objectives

- i. To determine the effect of Average Collection Period on the profitability of BRALIRWA LTD
- ii. To assess the effect of Average Payables Period on the profitability of BRALIRWA LTD
- iii. To investigate the influence of Inventory Conversion Period on the profitability of BRALIRWA LTD
- iv. To examine the influence of Cash Conversion Cycle on the profitability of BRALIRWA LTD

2.0. LITERATURE REVIEW

2.1. Conceptual review

This section presents the review of existing literatures on the study variables namely Cash Conversion Cycle, Account Payables Period, Average Receivable Period and Inventory Conversion Period as well as the profitability of listed companies.

2.1.1. Accounts Collection Period

Businesses typically utilize the offer of trade credit as a marketing tool to develop or sustain sales. Accounts receivables are therefore one way to increase the level of sales and the management should be able to manage accounts receivable properly to ensure adequate liquidity for operations (Kakaeto *et al.*, 2016). Efficient receivables management, indicated by a shortened creditor's collection period, low levels of bad debts, and a sound credit policy,

frequently improves a business's ability to attract new customers and thereby increase financial performance; thus, a sound credit policy is required to ensure that value is maximized (Ahmed *et al.*, 2017, Kakaeto *et al.*, 2016). Increasing the amount of receivables increases the carrying costs involved with extending credit, which consist of cash discounts, costs of maintaining credit, and credit collection expenses (Ahmed *et al.*, 2017).

Proper analysis of accounts receivable is very important for management in order to properly manage accounts receivable (Kakaeto *et al.*, 2016). Accounts receivable is to use the average collection period, which is the time it takes for a company to collect its receivables. Kakaeto *et al.* (2016) separately indicated that the period of collection of receivables is a number indicating the average time required to collect receivables.

2.1.2 Account Payable Period

Account payables are made when a business purchases things for which payment is due by a certain date in the future (Hsieh *et al.*, 2018). Accounts payable are suppliers that have had their invoices for products or services processed but have not yet been paid (Enqvist *et al.*, 2019). Accounts payable contain both trade credit and accumulated expenses, which combined offer continuous finance for business activities (Enqvist *et al.*, 2019). According to Jayarathne (2019), corporations can increase profits by taking a long time to pay creditors' invoices and using this liquidity to support investments in short-term assets. Hsieh *et al.* (2018) and Gonçalves *et al.* (2018) indicated that appropriate account payable management necessitates an examination of the Account Payable Period (APP). APP is the time between the receipt of inventories and the payment for the items. Gonçalves *et al.* (2018) say that the APP can be found by multiplying accounts payables by the number of days in the year and dividing the result by annual credit purchases.

Hsieh *et al.* (2018) and Gonçalves *et al.* (2018) also showed that the longer the payment time, the greater the usage of the tied capital from the suppliers. Previous studies by Gonçalves *et al.* (2018), Malik and Bukhari (2018), and Hsieh *et al.* (2018) demonstrated that the Average Payable Period and profitability have a strong positive association among manufacturing companies as measured by ROA and ROE. However, Enqvist *et al.* (2019) demonstrated a negative correlation between the average payable period and the profitability of firms.

2.1.3. Inventory Conversion Period

Inventories are key components of the working capital of firms and include stocks, raw materials, work-in-progress, and finished goods (Akoto *et al.*, 2018; Musau, 2019). Inventory management aims at providing the necessary materials to support operations at the lowest possible cost (Akoto *et al.*, 2018). As a result, effective inventory management necessitates a careful balance of ordering, holding, and shortage costs associated with inventories (Musau, 2019). Inventory control is the direction of activities with the objective of having the right inventory in the right place and in the right quantity (Adhikari, 2020). The Inventory Conversion Period (ICP) represents the benchmark for the effective management of inventories

(Musau, 2019). Subramanyam and Wild (2019) indicated that the inventory period is the time it takes to acquire and sell inventories.

Kolias *et al.* (2019) find, in line with Cannon (2018), that the ICP is adversely connected to gross margin. In addition, a negative correlation occurs between gross margin and the inventory conversion period (inventory turnover ratio). Arabahmadi and Arabahmadi (2017) discovered a positive association between inventory management and working capital as well as a positive correlation between raw material purchasing and working capital. Eneje *et al.* (2018) also found that inventory management, as measured by ICP, is strong and helpful, which affects how profitable Nigerian brewing businesses are.

2.1.4. Cash Conversion Cycle

The cash conversion cycle (CCC) is a dynamic aspect of the period between paying cash for raw materials and collecting them as accounts receivable (Mandalaputri *et al.*, 2021). Makoni and Mabandla, 2019). Musau (2019) and Mutai *et al.* (2019) referred to the CCC as the number of days it takes a business to sell inventory and receive cash from debtors. CCC analysis is based on an examination of three half-cycles, including inventory, followed by accounts receivables and current liabilities (Chemis, 2018; Akoto *et al.*, 2018).

Akoto *et al.* (2018), Wilkinson (2018), and Musau (2019) have established that CCC is a critical factor determining the decision-making related to WCM of businesses. Since it effectively captures the time lag between the expenditure of raw materials based on procurement and the collections from borrowers in support of the sales of completed goods, CCC is well-conceived to be an all-inclusive measure of WCM (Brealey *et al.*, 2019; Wilkinson, 2018). Longer CCC stimulates firms to increase their investments in WC (Akoto *et al.*, 2018). Moreover, Brealey *et al.* (2019) and Moran (2019) demonstrated that shorter CCC would enhance the firm's profitability since it would trigger an increase in sales. Malik and Bukhari (2018) examined how WCM affected the firms in the engineering sector in Pakistan and found that ROE and the CCC had significant and positive associations. Bilehsavar *et al.* (2021) studied the relationship between CCC and a company's performance. They found that CCC is statistically linked to a company's profitability and that CCC in days has a negative relationship with the return on assets and sales revenue.

2.1.5. Firm's Profitability

Profitability refers to a company's capacity to generate profits in relation to its sales, total assets, and capital. Sandhar (2018) indicated that profitability comprises the ability to obtain benefits from all of an organization's, firms, or company's business operations. It demonstrates management's ability to convert available resources into earnings. Profitability ratios are used to determine the bottom line of a firm and are significant to both managers and owners (Malik, 2019). Profitability ratios, according to Kakuru (2015), assess a company's ability to make profits. Profitability is frequently used to assess the efficiency and effectiveness of a company's use of working capital by comparing profit to the working capital employed in operations (Ross

et al., 2018). Return on assets (ROA), which shows how well the company uses its assets, and rate of return on equity (ROE), which shows what investors expect in return for their investments (Hansen & Mowen, 2015), are two ways to measure profitability of the firms.

2.2. Theoretical review

The current study was anchored on the agency cost theory and trade-off model. The agency theory was coined by Michael Jensen in 1986. The theory emphasizes that firms incur agency costs due to free cash flow and asserts that managers are constantly inclined to hoard wealth under their control and make investment decisions that may not be in the shareholders' best interests (Akoto *et al.*, 2018; Kasozi, 2017). The agency theory also suggests a relationship between principals and agents in business. It is concerned with solving problems that can exist in agency relationships, such as those between shareholders and company executives. These problems arise when the desires and goals of the principal and agent are in conflict and the principal is unable to verify what the agent is doing (Bruce *et al.*, 2015; Kasozi, 2017). This theory is important to this study because it explains why a company's shareholders might choose a cautious or aggressive WCM strategy, depending on how much they expect to pay in agency costs.

Trade-Offs Theory explains that enterprises determine the appropriate level of cash on hand by assessing the marginal cost and benefit of retaining cash. A high investment in current assets would result in a poor return on assets (ROA) for the company, as excess investments in current assets would not provide a sufficient return (Raheman & Nasr, 2017). Profit maximization is the goal of any business. Similarly, maintaining the company's liquidity is a vital priority. The problem is that a company can have a lot of trouble if it tries to increase profits at the expense of cash flow. Consequently, there must be a trade-off between these two clear aims. Charitou *et al.* (2010) say that there is a trade-off between liquidity and profitability when talking about how important working capital management is for a company's risk, value, and profitability. The greater a company's WC, the greater its liquidity and, consequently, the lower its danger of insolvency and, as a result, its profitability. In contrast, the lower the working capital, the lower the firm's liquidity, and thus the greater the risk of incurring a loss. This theory is relevant to this study as it enables the researchers and readers to properly understand why listed businesses must maintain an optimal amount of liquidity that satisfies profitability expectations.

2.3. Empirical review

Different researchers have attempted to assess the influence of different WCM practises on the profitability and performance of firms across the globe. Sathyamoorthi *et al.* (2018) investigate the impact of WCM on the profitability of a Botswana retail business and demonstrate that the APP and current ratio are both negatively and significantly related to return on assets, whereas the quick ratio is both positively and significantly related to ROA. Akoto *et al.* (2018) investigated the association between WCM practises and the profitability of Ghana's listed manufacturing enterprises and discovered a substantial negative association between

profitability and accounts receivable days using panel data methods and regression analysis. However, the cash conversion cycle, current asset ratio, size, and current asset turnover of the firms all have a considerable beneficial impact on profitability. Iqbal *et al.* (2018) investigated working capital management trends and their influence on the performance of Pakistani companies listed on the Karachi Stock Exchange and showed that cash conversion cycle, days of inventory, days of accounts receivable, and days of accounts payable were all significantly negatively correlated with profitability. The findings demonstrate that effective working capital management is crucial to the profitability and expansion of businesses.

Mabandla and Makoni (2019) assessed the relationship between WCM and a firm's financial success, and the findings revealed a positive relationship between the inventory ICP and the ROA; an inverse relationship between the ACP and ROA; and a positive relationship between the APP and ROA as a proxy for the profitability of these businesses. Musau and Wangomba (2019) evaluated the impact of WCM on Pakistani firms' performance and revealed that the CCC net trade cycle and ICP have a significant impact on business profitability, and collection and payment practises for manufacturers are frequently difficult. Kawakibi and Djumilah (2019) investigated the direct and indirect effects of WCM practises on firm value in cement businesses listed on the Indonesia Stock Exchange, and the findings revealed that extremely effective working capital management may also increase financial performance, including raising firm value.

Umenzekwe *et al.* (2020) investigate the association between WCM and the financial performance of Nigerian manufacturing enterprises and show that whereas ICP had a negative association with ROA and APP had a large positive relationship with ROA, there was a strong inverse association between ROA and ACP. Adhikari (2020) used empirical evidence to examine the impact of WCM and its effects on the profitability of manufacturing enterprises in Nepal and showed that CCC, APP, and ICP negatively correlated with the ROA of the firms, while there was a negative correlation between the debt ratio, current ratio, and ACP and the ROA of the firms. Collins and Kipkirui (2020) investigated the impact of WCM practises on the profitability of Kenyan cement manufacturing enterprises, and the findings demonstrated that ACP has a positive but insignificant relationship with ROE, while ICP has a positive and significant impact on ROE, and APP has a significant inverse relationship with ROE. Pham *et al.* (2020) investigated the impact of WCM on the profitability of steel businesses listed on the Vietnam Stock Exchange, and the findings showed that CCC has a negative impact on ROE. Findings demonstrate that WCM has a significant influence on the corporate profitability of these businesses.

2.4. Research gap

Despite the studies on working capital management that have been carried out by various scholars, such as Gul *et al.* (2018); Akoto *et al.* (2018); Umenzekwe *et al.* (2020); Sharma and Kumar (2019); Iqbal *et al.* (2018) and Pham *et al.* (2020) it is instructive to note that there is still ambiguity regarding the appropriate variables that might serve as proxies for working capital management. These studies do not provide a clear-cut direction of the relationship

between working capital and a firm’s profitability. Further examination of these studies reveals that there is little empirical evidence on working capital management and its impact on the profitability of listed companies in Rwanda. So, the current study tries to fill this gap by estimating the relationship between working capital management variables (Average Collection Period, Inventory Conversion Period, Average Payables Period, and Cash Conversion Cycle) and the profitability of listed companies in Rwanda.

2.5. Conceptual framework

The conceptual framework model for this investigation is provided below. This conceptual framework model illustrates the current connection between the studied variables.

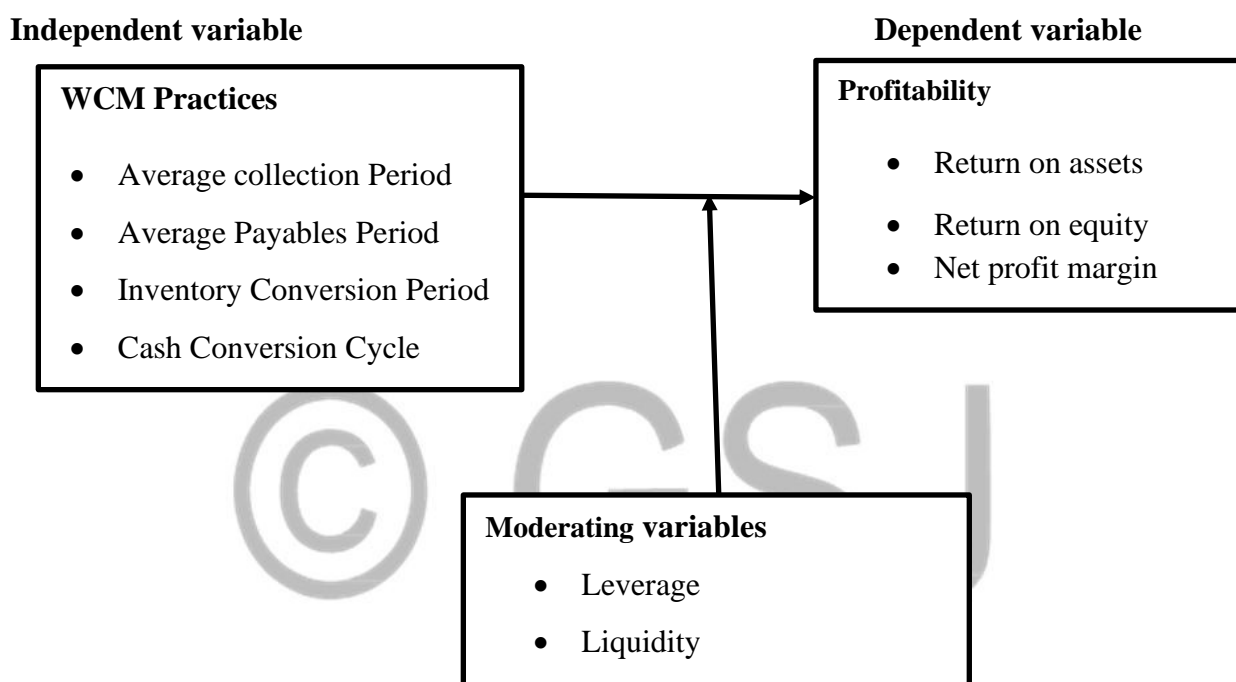


Figure 1: Conceptual framework model

Source: Modified from Iqbal *et al.* (2017) and Pham *et al.* (2020)

Figure 1 demonstrates the theoretical linkage between WCM and profitability of firms. From the figure, the WCM practices are conceptualized as independent variable and is indicated by various measures of the practices including Average collection Period (ACP), Average Payables Period (APP), Inventory Conversion Period (ICP) and Cash Conversion Cycle (CCC). On the other hand, profitability is conceptualized as the dependent variable and is measured by return on assets (ROA), and return on equity (ROE) and net profit margin (NPM). However, external variables such as leverage and liquidity of the firms.

3.0. RESEARCH METHODOLOGY

3.1. Research design

The study adopted a descriptive and causal research design. Polit and Beck (2010) emphasize that descriptive research refers to research studies that have as their main objective the accurate portrayal of the characteristics of people, situations, or groups. Roberts and Burke (2009)

define "descriptive research" as a non-experimental research design used to observe (and measure) a variable when little conceptual background has been developed on specific aspects of the variable under study.

3.2. Population and sample size

Rwanda Capital Market Authority Report (2019) reports that there are 10 listed companies on the RSE (<https://www.rse.rw/media-and-publication/rse-announcements/>). Therefore, for this study, the population of this study comprises of 10 listed companies on the Rwanda Stock Exchange. During this study, a purposive sampling technique was used to select the company listed on RSE to be used in this investigation. According to Saunders *et al.* (2017), purposive sampling is a sampling technique which judgmentally includes in the sample those elements of interest to the study. This method was used to select BRALIRWA LTD as the sample size for this study. Data was obtained from document analysis of consolidated financial reports of the company under study between 2011 and 2021, a period of 10 years.

3.3. Data Collection and Analysis Methods

A pre-designed desk review checklist was used to extract secondary data from the financial accounts of the selected company. Audited financial statements for a ten-year period (2011–2021) were gathered from the published financial reports of BRALIRWA LTD. Data collected include the average collection period (ACP) as a measure of accounts receivable management, the average payables period (APP), a proxy for accounts payable management, the inventory conversion period (ICP), a proxy for inventory management, and the cash conversion cycle (CCC) as a comprehensive measure of WCM practices. Collected data were analyzed using descriptive and inferential statistics. The following regression model was fitted.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where:

Y = ROA

X₁ = Average Collection Period

X₂ = Average Payables Period

X₃ = Inventory Conversion Period

X₄ = Cash Conversion Cycle

α = intercept

ε = error term

The F-statistic was used to determine if the impact of WCM on BRALIRWA LTD's profitability was statistically significant. ANOVA was used to examine the model's acceptance and how well it fits.

4.0. FINDINGS

4.1. Descriptive Statistics

Before presenting the analysis of the findings of the specific objectives of this study, descriptive statistics were presented in this section.

Table 1: Descriptive statistics on the study variables

Dependent variable: ROA

Method: Descriptive Analysis

Sample: 2011- 2021

Periods included: 10

Cross-sections included: 20

Total panel (balanced) observations: 20

Variables	Mean	Median	SD	Minimum	Maximum
ROA	.167	.235	.112	.018	.379
Average Collection Period	56.56	52.87	32.46	8.747	74.39
Average Payables Period	97.57	86.68	49.87	18.87	64.56
Inventory Conversion Period	84.56	85.65	37.66	27.23	249.56
Cash Conversion Period	63.78	42.58	43.54	78.36	128.56

Source: Audited Financial Statements BRALIRWA LTD and Author compilation (2022)

Table 1 shows that the average ROA is 16.7% and the ACP is 56.56 days indicating that BRALIRWA LTD needs 56.76 days on average to convert their receivables into cash. APP is 97.57 days with an SD of 49.87 days indicating that BRALIRWA LTD typically takes 97.57 days to pay its creditors. Table 1 also shows that the average Inventory Conversion Period (ICP) is 846 days with an SD of 37.66 days. This indicates that BRALIRWA LTD takes approximately 877 days to convert its inventories into sales. The average CCC is 63.78 days with an SD of 43.54 days. The shortest cash conversion cycle is 78.36 days, while the longest cash conversion duration is 128.56 days. This implies that it takes an average of 63.78 days to turn all of the firm's cash into corporate resources and back to cash.

4.2. Multiple Regression analysis

Multi-linear regression analysis was undertaken in order to determine the combined influence of the independent variables (ACP, APP, ICP and CCC) on the dependent variable (profitability of BRALIRWA LTD, measured by ROA) as well as the level of significance of the relationship between these variables. The hypotheses were tested at 95% level of confidence in order to draw conclusion. Table below presents the model summary

Table 2: Multiple Regression Model Summary

Dependent variable: ROA
 Method: Pearson Correlation Analysis
 Sample: 2011- 2021
 Periods included: 10
 Cross-sections included: 20
 Total panel (balanced) observations: 20

Model	R	R Square	Adjusted R Square	Std. Error	Sign.
1	.818	.728	0.717	.0514	.002 (a)

- a. **Predictor(s):** (Constant), ACP, APP, ICP, CCC
- b. **Dependent variable:** Return on Assets (ROA)

Table 2 shows that the R=.818. This indicates that there is a positive and strong relationship between WCM practices and the profitability of BRALIRWA LTD. Table 2 also shows that the coefficient of multiple determinations, adjusted $R^2=.717$. This demonstrates that WCM practices jointly accounts for 71.7% of the variations in return on assets (profitability) of BRALIRWA LTD. The current findings corroborate with Chemis (2018) and Ochieng (2020) who also noted that WCM practices measured by the average collection period, the average payment period, inventory conversion period and cash conversion cycle strongly influence the profitability of manufacturing companies.

Moreover, the multiple Regression analysis results were obtained to establish the strength and the magnitude of the relationship between the variables and to test the hypothesized relationships. Moreover, Durbin-Watson (D-W) and Variance-Inflation Factor (VIF) statistics were analyzed to explore the possibility of the presence of autocorrelation and multicollinearity in the data under analysis. Table below presents the results.

Table 3: Regression Model Coefficients

Dependent Variable: ROA
 Method: Linear Regression Analysis
 Sample: 2011- 2021
 Periods included: 10
 Cross-sections included: 20
 Total panel (balanced) observations: 20

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sign.	D-W Statistics	Collinearity Statistics	
	B	Std. Err.	Beta				Tolerance	VIF
(Constant)	.589	.025		3.66	.002	0.214		
ACP	-.258	.032	-0.236	-.185	.102	1.221	.003	3.692
APP	.367	.261	.472	-3.032	.234	1.281	.641	1.559
ICP	-.237	.015	.721	1.252	.001	1.324	.034	2.724
CCC	-.256	.089	.423	2.35	.002	1.212	.109	2.185

- a. **Predictor(s):** (Constant), ACP, APP, ICP, CCC
- b. **Dependent variable:** Return on Assets (ROA)

From the Table 3, the regression model can be rewritten as follow:

$$ROA = .589 - .258 ACP + .367 APP - .237 ICP - .256 CCC + .019 DR + .084 CR + e$$

Table 3 shows that the coefficient of ACP in the model was $\beta_1 = -.258$ with $p\text{-value} = .102$. This indicates that a unit increase in ACP will result in a proportional reduction in the ROA of BRALIRWA LTD. This implies that, holding other factors at a constant zero, if the average collection period increases by 1 day, the profitability of BRALIRWA LTD would decrease by .258 percentage. The negative relationship shows that when the number of days it takes to collect cash from debtors increases, there is a deliberate increase in bad debts, which decreases the profitability of BRALIRWA LTD. Therefore, accounts receivables are used as a source of funding to increase sales. The current findings are supported by Mahato and Jagannathan (2016) and Ntui *et al.* (2014) who showed that the ACP has a negative relationship with the firm profitability. However, the findings are inconsistent with Abdulnafea *et al.* (2021) concluded that there is a positive relationship between ACP and profitability of firms.

Table 3 shows that coefficient of APP in the model was $\beta_2 = .367$ with $p\text{-value} = .234$. This demonstrates that holding other factors to a constant zero, increasing the number of days of APP by 1 day leads to a .367 percent increase in the ROA of BRWALIRWA LTD. This suggests that a unit change in the number of days of APP would result in a proportional unit change in the profitability of the company under study. This also demonstrates that BRALIRWA LTD may withhold payments to its suppliers in order to use the cash available for working capital needs.

This is consistent with the prior study of Sefera *et al.* (2020) and Makori *et al.* (2014) who also hold that more profitable firms wait longer to pay their bills and Mahato and Jagannathan (2016) and Devi (2018) who also found that there is a significance positive relationship between average payable period and profitability as measured by ROA and conclude that more profitable companies delay payment of their invoices to their vendors in order to take use of the cash on hand to meet their working capital requirements. However, these findings are inconsistent with Amarasekara *et al.* (2021) and Mbawuni *et al.* (2016) who found that there is a significant negative relationship between profitability and average payable periods and conclude that less profitable companies postpone payments and more profitable companies pay their invoices sooner.

Table 3 shows that the coefficient of ICP in the model was $\beta_3 = -.237$ with $p\text{-value} = .001$. This demonstrates that holding other factors to a constant zero, an increase of ICP by one day would results in decrease of .237 percentage in the profitability of BRALIRWA LTD. This implies that any unit increase in the ICP will result in a proportional decrease in the profitability of BRALIRWA LTD. Therefore, reducing the number of days of inventory maintained in a manufacturing firm can maximize its profitability. This is supported by Mbawuni *et al.* (2016) and Abdulnafea *et al.* (2021) who also demonstrated that there is negative relationship between inventory collection period and firms' profitability as measured by ROA. However, this contradicts. Makori *et al.* (2014) who found positive relationship between inventory conversion period and profitability and indicated that holding large inventory levels reduces the cost of possible interruptions in the production process and the loss of business due to scarcity of products. Sathyamoorthi *et al.* (2018) also explained that holding large inventory levels reduces the cost of potential production delays and company loss due to product shortage.

Table 3 shows that the coefficient of CCC, was $-.256$ and $p\text{-value}=.002$. This implies that holding other factors at a constant zero, a day increase cash conversion cycle results in a decrease of $-.256$ percentage in the profitability of BRALIRWA LTD. This also implies that the profitability of BRALIRWA LTD would increase by $.256$ percentage when the net time delay between actual cash expenditures on a firm's purchase impute or raw material and the final recovery of cash collections from product sales is shortened. Therefore, reducing the cycle by one day improves company's profitability by $.256\%$ every year. In essence, this negative association shows that business managers may increase profitability by reducing the time lag between raw purchased goods and finished goods sales.

Findings of the current study corroborates with Sathyamoorthi *et al.* (2018) who emphasized that the negative relationship between profits and the cash conversion cycle could be explained by market power or market share, *i.e.*, a shorter CCC because of bargaining power by the suppliers and/or the customers, as well as higher profitability due to market dominance. The findings of the study are in line with the findings of previous research like Devi (2018), Mahato and Jagannathan (2016) and Seyoum *et al.* (2016) who also showed that Return on Assets has a negative relationship with Cash Conversion Cycle.

Table 4: Analysis of Variance

Method: Linear Regression Analysis

Sample: 2011- 2021

Periods included: 10

Cross-sections included: 20

Total panel (balanced) observations: 20

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.587	4	3.147	2.867	.002 ^(a)
	Residuals	6.584	6	1.097		
	Total	19.171	10			

a. **Predictor(s):** (Constant), ACP, APP, ICP, CCC.

b. **Dependent variable:** Return on Assets (ROA)

Table 4 shows that the F-statistic used to test the significance of R was $F=2.867$ and the $p\text{-value}=.002$ at 5% level of significance. This implies that the overall model is well fitted indicating that ACP, APP, ICP and CCC are true joint predictors of the variations in the ROA of the company under study at 5% level of significance.

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

WCM practices are significant determinants of the profitability of listed companies and one of a company's most crucial financial decisions. Since it is anticipated that the method in which working capital is handled would have a substantial influence on those organizations' profitability, companies can achieve optimum WCM by keeping a healthy balance between liquidity and profitability. WCM practices are significant determinants of the profitability of

listed companies and one of a company's most important financial decisions. The profitability of BRALIRWA LTD was therefore strongly impacted by WCM procedures as determined by Average Collection Period (ACP), Average Payables Period (APP), Inventory Conversion Period (ICP), and Cash Conversion Cycle (CCC). A trade-off between short- and long-term WCM decisions will determine how long the business can continue to operate. Working capital surpluses can limit investment alternatives, whereas working capital deficits can cause a lack of liquidity, decreased productivity, and decreased income.

ROA and Average Collection Period have a strong inverse connection. The negative association suggests that it would take too little time to collect money from creditors, which would improve the profitability of the firm under consideration, and the money would be used for productive purposes if a firm collects its receivables on time. Moreover, the association between the average payables period and the ROA, a metric of business profitability, was both significant and positive. Positive correlation suggests that a rise in the average account payable period would probably lead to increased profitability; in other words, the longer the accounts payable, the higher the profitability of the firm under examination throughout the given time period. Delaying account payables would probably improve cash flow by the precise payable amount within a set amount of time, allowing the business to use the extra cash to maintain operations and meet its working capital requirements.

The Inventory Conversion Period and the ROA demonstrated a negative association for BRALIRWA LTD during the time of study. Given this negative relationship, the business swiftly transformed its supplies into revenues. Inventory is quickly converted into cash, enhancing the profitability of the firm under consideration. It only takes a short time to replace inventory with revenues, and profits are made quickly. Additionally, this lessens the potential for inventory degradation and cost-related obsolescence. Furthermore, ROA as a measure of the profitability of BRALIRWA LTD was negatively and significantly impacted by the cash conversion cycle. A negative association implies that the profitability of the firm under investigation grows when the number of days between real cash outlays on a firm's resources and the ultimate recovery of cash receipts from product sales decreases. By maximizing payables and receivables, a short cash conversion cycle may be achieved, which boosts the profitability of the firms.

5.2. Recommendations

1. BRALIRWA LTD should have an extended payables period through negotiation with the firm stakeholders such as suppliers, creditors, and providers of funds in order to utilize the available funds for other firm operations that generate more profits before the lapse of the payment period.
2. Average Payables Period was found to have a positive and significant relationship with the profitability of BRALIRWA LTD. Therefore, BRALIRWA LTD should adopt an effective monitoring system that highlights any payment made earlier than the due date required by the suppliers.

3. Inventory Conversion Period showed a negative relationship with the profitability of BRALIRWA LTD. Therefore, BRALIRWA LTD should adopt a Just-in-Time purchasing on required materials and merchandise. This should be designed to minimize on-hand inventories by making purchases as late as possible and having items deliverables in small quantities when due.
4. Cash conversion cycle is critical in the management of working capital. Therefore, BRALIRWA LTD should have a shorter cash conversion cycle in order to realize cash promptly enough to run the firm profitably. This may be achieved through optimally managing the average collection period, inventory conversion period, and average payment period. Payables and receivables should be optimally managed in order to enhance firm liquidity and profitability.

5.3. Suggestions for further researches

The findings of the current study showed that WCM practices accounted for 81.5% of the variations in the profitability of the company under study. Therefore, further studies should be undertaken to assess other factors contributing to the profitability of listed firms that are not taken into consideration in this study. Moreover, the current study emphasized on BRALIRWA LTD as sole representative sample of the listed companies on RSE. Therefore, the current findings may not be representative enough to represent the entire bunch of the companies listed on RSE. Further studies could be undertaken to re-examine the current research models in different contexts by including more companies to enhance the generalizability of the research findings.

6.0. REFERENCES

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