

EFFECT OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY OF MANUFACTURING FIRMS IN NAKURU TOWN, KENYA

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Abstract

This study evaluated the effect of working capital management on the profitability of manufacturing firms in Nakuru town, Kenya. More importantly, it examined the influence of average payment period and cash conversion cycle on profitability of the aforementioned firms. This study adopted descriptive survey research design. The study targeted 156 employees attached to the accounts/finance, and management sections. Stratified random sampling method was used to obtain 62 respondents. The study used structured questionnaires to collect data. First, a pilot study was conducted to verify reliability and validity of the questionnaire. Data analysis encompassed descriptive and inferential statistics using SPSS. The study revealed that average payment period and cash conversion cycle were significantly related to profitability of manufacturing firms. More so, it was established that cash conversion cycle had a negative effect on firm's profitability. However, average payment period positively influenced profitability. In general, it was revealed that working capital management significantly and positively influenced firm's profitability. Cash conversion cycle was inferred to be the most crucial element of working capital management in respect of firm's profitability. It is recommended that manufacturing firms should shorten their cash conversion cycle and extend payment period.

Keywords: Average payment period, cash conversion cycle, profitability, manufacturing firms, working capital management

INTRODUCTION

The real world is manifested with an extensive amount of uncertainty concerning the demand for products, fluctuations in the market price, and the easy accessibility of the suppliers. Transaction cost is associated with buying and selling of goods and services. Due to the cost, there is a lack of even distribution of information leading to the differences in lending and borrowing rates for the investments and financing of equal risk. In the same way, every company has its own capacity and technology so as to manufacture goods and services. Manufacturing involves two types of cost namely fixed costs and variable costs. Now, for day to day operations, the need for working capital has become mandatory as it influences liquidity and hence the profitability also gets affected (Raheman & Nasr 2007).

Many surveys have indicated that managers spend considerable time on day-to-day problems that involve working capital decisions. One reason for this is that current assets are short-lived investments that are continually being converted into other asset types (Eljelly, 2004). In its 2009 Working Capital Survey of the top 1000 US companies, REL (2009) found that firms unnecessarily held approximately US\$ 778 billion tied up in working capital. On the other hand, firms search for cheaper sources of funds, lamenting high borrowing costs and the inaccessibility of credit markets.

Working Capital Management is a very sensitive area in the field of financial management. It involves the decision of the amount and composition of current assets and the financing of these assets. Current assets include all those assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need. There must be a balance between current assets and current liabilities so as to eliminate the risk of inability to meet short term obligations on one hand and avoid excessive investment in these assets on the other hand.

Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the interrelationship that exists between them. Not being able to maintain a satisfactory level of working capital, it is likely to become insolvent and may even be forced into bankruptcy. Altman's (1968) multivariate predictor model based on US companies included working capital as one of the model components. Using data drawn from the UK companies, Taffler (1982) developed a four-variable model of failure prediction. All the four variables included a variant on working capital as a component. The subject of working capital management has gained importance because it has become contemporary financial management paradox. On one hand there is growing evidence that firms over invest in working capital. For example, a survey by Ernst and Young (2010) estimated that

over US\$450 billion was being held in working capital unnecessarily by the biggest 1000 American companies by sales while the top 1000 European firms held €475 billion.

A study on the relationships between Working Capital Management and Corporate Performance of 20 manufacturing firms listed on the Nairobi Securities Exchange – NSE (Omesa, Maniagi, Musiega & Makori, 2013) and another on the effect of working capital management practices on the financial performance (Nyabwanga, Ojera, Lumumba, Oondo & Otieno, 2012) provided no evidence on the relationship between working capital management and profitability of manufacturing firms in Kenya.

It is implied that a firm's liquidity does to a large extent determine its profitability. However, liquidity and profitability are not the same but, are the core objectives of a firm. Increase in company profitability by reducing the liquidity bring some serious problems as goals cannot be ignored at any cost; if goal of maximizing the profit is ignored, survival is not possible for a longer time and if liquidity objective is ignored, insolvency or bankruptcy could be faced (Qazi et al., 2011). In this vein, Charitou, Elfani and Lois (2010:68) asserted that efficient utilization of the firm's resources leads to increased profitability and reduces volatility which leads to the reduction in default risk and thus improves the firm's value. Lairodi and Lazardis (2000) conducted the research to find out if there was any relationship between the liquidity, profitability and leverage ratios for the sample of 82 food industries listed in the Greece Stock Exchange and they found a positive relationship between CCC and return on assets.

In Kenya, the industrial sector is the fourth biggest sector after agriculture, transport and communication and wholesale and retail trade. The sector comprises of four sub-sectors which include automobile and accessories, construction, energy and petroleum, and manufacturing sectors. The significance of this sector is underscored by the fact that it contributes about 10.1 per cent of Kenya's Gross Domestic Product (GDP). The sector serves the local market in addition to exports to the East African region.

The sector, which is dominated by subsidiaries of multi-national corporations, contributed approximately 18% of the GDP in 2009 (NSE Handbook, 2011). As an important sector in the overall economic growth, manufacturing sector requires an in-depth analysis at industry as well as firm level. As at the end of 2012, there were eighteen manufacturing firms listed on the NSE besides hundreds of other smaller firms. The importance of working capital management to firms cannot be understated. However, it remains hitherto quite unclear regarding the extent to which working capital management influences profitability of manufacturing firms particularly in Kenya.

Statement of the Problem

The efficient management of working capital is very vital for a business to survive. This is premised on the fact that having too much capital signifies inefficiency where as too little cash in hand signifies that the survival of the business is shaky. Most business organizations do not hold the right amount of stocks, debtors and cash. Due to this reason the firm is unable to meet its maturing short term obligations and its upcoming operational needs. Lack of adequate working capital also means that a firm is unable to undertake expansion projects and increase its sales, therefore, limiting the growth and profitability of the business. Majority of manufacturing firms in Nakuru town have not recorded much growth as compared to firms in other sectors such as service industry. Indeed, manufacturing firms such the Evereday Company have faced serious challenges in their operations and growth. In spite of the crucial role played by working capital, the extent to which its management affects profitability of these firms is largely unclear. This premise, therefore, necessitated carrying out of this study.

General Objective

To examine the effect of working capital management on the profitability of manufacturing firms in Nakuru town, Kenya

Specific Objectives

- i. To evaluate the effect of average payment period on the profitability of manufacturing firms in Nakuru town
- ii. To examine the effect of cash conversion cycle on the profitability of manufacturing firms in Nakuru town

Research Hypotheses

H₀₁: There is no statistically significant effect of average payment period on the profitability of manufacturing firms in Nakuru town

H₀₂: There is no statistically significant effect of cash conversion cycle on the profitability of manufacturing firms in Nakuru town

THEORETICAL FRAMEWORK

Operating Cycle Theory

The theory postulates that incorporating working capital measures such as accounts receivable and inventory turnover into an operating cycle concept provides an appropriate view of liquidity management than does the use of traditional measures such as current and acid- test ratios.

Weston (1979) noted that the additional liquidity measures recognize that life expectancies of some working capital components depend on the extent to which production, sales and collection are non- instantaneous and unsynchronized. Accounts receivable turnover indicates then speed with which firms receivables are converted to cash. A change in credit and collection policy of a firm would influence the outstanding accounts receivable balance maintained relative to the firm's annual sales. Where firms grant more liberal terms to their customers, larger and potentially less liquid current investment in receivables arise. If the sales do not increase relative to the increase in receivables then liquidity would be affected as lower receivables turnover and extended collection periods would be observed.

Inventory turnover indicates the frequency with which firms convert their stock of raw materials, work in progress and finished goods into product sales. Purchasing, production scheduling and distribution strategies adopted by firms require more inventory commitments in relation to anticipated sales. This produces a lower turnover ratio which in turn reflects a longer and potentially less liquid inventory holding period. In the event that firms do not alter the payment practices with trade creditors and their access to short-term financing, decisions creating longer or less liquid holding periods will arise and lead to higher current ratio. Higher current ratio implies that firms have accumulated current assets such inventory that lie idle and therefore do not generate profits (Weston 1979). It is further argued that the length of the firms operating cycle is based on the cumulative days per turnover for receivables and inventory investments. Incorporating the two measures of working capital measures provides an arguably realistic approach to firm's liquidity position. However, the operating cycle concept fails as a cash flow measure since it doesn't consider the liquidity requirements imposed on a firm by the dimension of its current liability commitments.

Miller and Orr's Cash Management Model

Miller and Orr (1966) model of cash management elucidates that companies allow their cash balances to move within two limits, that is, upper and lower limit. Companies therefore buy and sell their marketable securities in the event that cash balance is on the lower or the upper limit. The model provides a framework for determining the optimum cash balance and the point at which to sell securities in order to raise cash. Further, it provides for when to invest excess cash by buying securities and lowering their cash holdings.

Baumol Model of Cash Management

The model is used in determining the optimum cash balance the firm ought to hold under conditions of certainty. The model assumes that the firm is able predict the cash it needs with

certainty and receive specific amounts at regular intervals. Further, it assumes that the firm's cash payments occur uniformly over a period of time and that the opportunity cost of holding cash is known with absolute certainty. However, the model assumptions do not apply in reality. Baumol (1952) states that cash managers invest the excess funds at their disposal in interest bearing securities and convert them to cash in the event that firm demands cash. Further, with the increase in investment returns, cash managers hold less cash by investing in such securities and because of the increase in the opportunity cost of holding cash. Converting securities to cash or rather liquidating securities attracts transaction costs. With increase in transaction costs, cash managers hold higher cash balances. Therefore, managing the cash short term investment mix entails establishing the optimal frequency for replenishing cash and the amount of securities to liquidate.

EMPIRICAL REVIEW

Average Payment Period (APP)

Hassan, Imran, Amjad and Hussain (2014) elucidated that the average payment period was positively related to gross profit margin and negatively related to return on assets when the authors determined the effects of working capital management on firm performance of non-financial firms listed in Karachi stock Exchange. However, the relationship between APP and performance being measured with gross profit margin and return on equity was insignificant. It was further deduced that delaying payments to creditors increases the firm's ability to utilize the creditors' money in their operations which consequently increases profitability. Therefore, the more profitable the firm wants to be, then the longer time it takes to pay bills. Dong and Su (2010) noted a positive link between the number of days of accounts payable and performance. Further, it was noted that managers can increase profitability by minimizing the average collection period and stretching APP.

Hayajneh and AitYassine (2011) determined the impact of working capital efficiency on profitability. The study empirically analyzed the Jordanian manufacturing firms. It was noted that the average payment period, a proxy for working capital had a strong negative relationship with profitability of these firms. On the contrary, Vijayakumar (2011) found a positive relationship between accounts payable period and profitability in selected Indian automobile firms. Therefore it was concluded that more profitable firms wait longer to honor their obligations. The conclusions concurred with earlier studies by Eljelly (2004), Lazardis and Tryfonidis (2006) and Garcia and Solano (2007).

Solomons (2014) assessed the impact of working capital management on the profitability of small and medium enterprise in South Africa. The study focused on all firms listed on AltX, a

division of the Johannesburg Stock Exchange, for the period 2000 to 2013. Cash conversion cycle, average payment period, and stockholding period variables represented working capital management. Return on assets measured profitability. It was found that APP positively influenced profitability. Further, it was argued that the longer the enterprises took to pay for credit purchases, then the higher the profitability. Similar findings were observed in Ponsian et al (2014) study.

Ponsian, Chrispina, Tago and Mkiibi (2014) embarked on the effect of working capital management on profitability. The study sought to examine statistical significance between company's working capital management and profitability among manufacturing firms listed in Dar es Salaam Stock Exchange. The study used data for the ten year period from 2002 to 2012. The study found that there was a highly positive and significant relationship between APP and profitability. The finding implied that the longer the firm took to pay its creditors, then the more profitable the firm was. Withholding creditors' payments was meant to take advantage of the available cash for the working capital needs. The finding was in line with the working capital management rule that companies should delay disbursements to creditors as much as possible but not strain the business relationship with the creditors.

Mathuva (2010) conducted a study on the influence of working capital management on corporate profitability in Kenya. The study focused on 30 firms listed in the Nairobi Securities Exchange for the period 1993 to 2008. Average payment period, average collection period and inventory conversion period were used as measures of working capital. The study found average payment period highly and positively influenced profitability in these firms. It was argued that the longer the firms took to pay their creditors then the more profitable the firms were. Mwangi (2013) on the other hand examined the association between working capital management and financial performance of private hospitals in Kenya. The study used average collection period, average payment period and cash conversion cycle as proxies of working capital management. Return on assets represented profitability. It was found that the average payment period had a negative relationship with profitability. The low levels of profitability noted in hospitals were ascribed to the long average payment period creditors took to honor their obligations.

Kimeli (2012) examined the effects of working capital management on profitability of manufacturing companies in Kenya. The study focused on 6 manufacturing companies listed in the bourse. The study used data from the financial reports for the period 2006 to 2010. It was noted that the gross operating profit of the firms was positively correlated with the average collection period and most important the average payment period. The increase in average payment period was noted to lead to an increase in the gross operating profit. The study

however recommended that firm managers should focus on reducing the cash conversion cycle, reduce the average collection period and delay the payment of creditors so as to channel the money to other profitable investments such as the short term securities. Mathuva's (2010) and Mwangi (2013) studied average payment period and profitability of Kenya firms. However, these studies failed to examine average payment period's influence on profitability on manufacturing firms. Indeed these studies focused on hospitals and listed firms, which is far off the present study.

Cash Conversion Cycle (CCC)

Nobanee (2006) in the study of all non- financial corporations in the United States suggested that CCC as the measure of the effectiveness of working capital management that puts into consideration all the cash flows associated with inventory, accounts receivable and accounts payables. The author noted that maintaining inventories, receivables and accounts payables at optimal levels helped reduce the handling cost and opportunity cost of holding inventories, receivables and payables and thereby leading to a favorable length of cash conversion cycle. Teruel and Solano (2007) noted that there was a strong negative relationship between working capital and financial performance in their study on the small and medium enterprises in Spain. Teruel posited that managers can generate revenue for their firms by managing the CCC and keeping the accounts receivables, payables and inventory at an optimal level.

Uyar (2009) noted that there was a considerable negative association between CCC and profitability of firms listed in Istanbul Stock Exchange. Gill, Bigger and Mathur (2010) on the other hand found a positive relationship between CCC and performance measured through operating gross profit. Cash conversion cycle was found to have a negative correlation with corporate profitability of Vietnamese firms (Dong & Su 2010). A study on cash conversion cycle and firm performance of Japanese firms confirmed the finding that CCC had a strong negative correlation with firm performance measured through return on assets for all the industries apart from consumer and services industry (Nobanee, Abdulatif&AlHajjar, 2011). Karaduman, Akbas, Caliksan and Durer (2011) also found that CCC influenced the performance of firms listed in Istanbul Stock Market. It was further noted that performance could be enhanced by improving the efficiency of working capital in the firms

Vijayakumar (2011) noted that the cash conversion cycle had a negative link with firm performance in selected Indian automobile firms. The author further noted that firms in this industry can attain sustainable competitive advantage through effective and efficient utilization of resources of the organization through careful reduction of the cash conversion cycle to its minimum. Further, the performance of the firm is likely to improve with decrease in CCC. Zubairi

(2010) asserted that the firm's performance and the cash conversion cycle are influenced by the size of the firm in Pakistan. This is because larger firms are able to efficiently collect receivables due to the power. It was noted that the size of the firm actually affected performance of such firm. The firm's liquidity was found to have a direct positive link with performance.

Mengesha, Seyoum and Gizaw (2014) carried out a study on the impact of working capital management on financial performance of selected manufacturing companies in Ethiopia. The study used audited financial statements of 11 metal manufacturing firms for a period of 4 years. Working capital was measured through CCC while return on assets and return on investment measured profitability. It was found that CCC had a significant negative relationship with return on asset. It was therefore concluded that CCC impacted negatively on profitability of the firms and that managers can increase firms' profitability by improving working capital management measures. Agyei and Yeboah (2011) looked into working capital management and profitability of selected banks in Ghana. It was found that CCC had a positive relationship with banks' profitability. Falope and Ajilore (2009), in their study on working capital management and corporate profitability of Nigerian quoted companies revealed a significant negative correlation between net operating profitability and cash conversion cycle. Akoto, Victor and Angmor (2013) on the other hand found that cash conversion cycle, current ratio and current asset turnover significantly and positively influenced profitability of listed manufacturing firms in Ghana.

Makori and Jagongo (2013) examined working capital management and firm profitability in Kenya. The study utilized data for the period 2003 to 2012 of five manufacturing and construction firms listed in Nairobi Securities Exchange. The number of day's accounts receivable and CCC proxied working capital. The study found that cash conversion cycle and number of day's accounts receivable had a negative association with profitability. It was further noted that financial leverage and the sales growth had significant effects on firm's profitability. It was concluded that firms can gain sustainable competitive advantage through efficient and effective utilization of their resources through reduction of the cash conversion cycle to its minimum. Though, Makori and Jagongo (2013) examined working capital management and firm profitability in Kenya, the study was limited to listed firms.

Profitability

Sandhar (2013) noted that profitability entails the capacity to make benefits from all the business operations of an organization, firm or company. It portrays the management's efficiency in converting available resources to profits. Iqbal, Ahmad and Riaz (2014) in their study of the relationship between working capital management and profitability of firms listed in Karachi Stock Exchange noted that gross and net operating profit was a good predictor of firms'

profitability. The authors noted that for firms to generate high levels of profitability then they should manage their working capital effectively and efficiently. In other words, it is imperative for such firms to manage their current assets and current liabilities optimally. Further, properly managing cash, accounts receivables and inventories would result to increased profitability in such firms. Deelof (2003) on the other hand noted that profitability could be increased through a long cash conversion cycle. This is because a long cash conversion cycle would call for more investment in working capital management which could lead to higher profitability due to increased sales. However, Deelof (2003) further notes that careful investment in working capital should be considered to avoid a faster increase in the cost of marginal investment in relation to the benefits accrued from such investment as having more inventory on hand.

According to Ching, Novazzi and Gerab (2011), who examined the association between working capital management and profitability in Brazilian listed firms, noted that effective management of working capital was vital in achieving profitability. It was further noted that return on sales as a profitability measure increased with effective management of inventory and cash conversion cycle to optimal levels in working capital intensive firms. Increase in the return on assets was associated with effective management of inventory in the firms. The study concluded that profitability could be achieved through proper management of working capital. Alipour (2011) noted that profitability in firms is directly influenced by how working capital is managed. Working capital management indicated a significant relationship with profitability among the Iranian listed firms when profitability was measured through gross operating profit. It was further noted that corporate value can be increased through decreasing average collection period and inventory turnover period to release the cash held in such assets.

Charitou, Elfani and Lois (2010) noted that efficient use of firm resources lead to more stability and profitability after they established the relationship between working capital management and profitability of listed firms on the Cyprus Stock Exchange. They found that cash conversion cycle was directly linked to firms' profitability. The components of cash conversion cycle were also noted to have isolated impact on profitability that is days in inventory, day's sales outstanding and creditors' payment period. Further efficient management of cash conversion cycle to optimal levels was noted to lower default risk and thereby enhancing the value of the firm. The study concluded that profitability rested on optimal management of working capital components.

Vishnani and Shah (2007) noted that corporate profitability improves when the return on capital employed exceeds the cost of investing such capital. This implies that managing working capital needs to yield a return that exceeds the investment decision to improve the value of a firm. In their study on working capital impact on profitability in Indian firms, they noted that the

return on capital employed, a measure of firm's level profitability given the level of capital employed, was influenced by inventory and payment periods. Inventory period impacted negatively on return on capital employed implying that an increase in inventory holding period resulted to decrease in profitability. Payment period revealed positive relationship with return on capital employed and hence enhanced profitability.

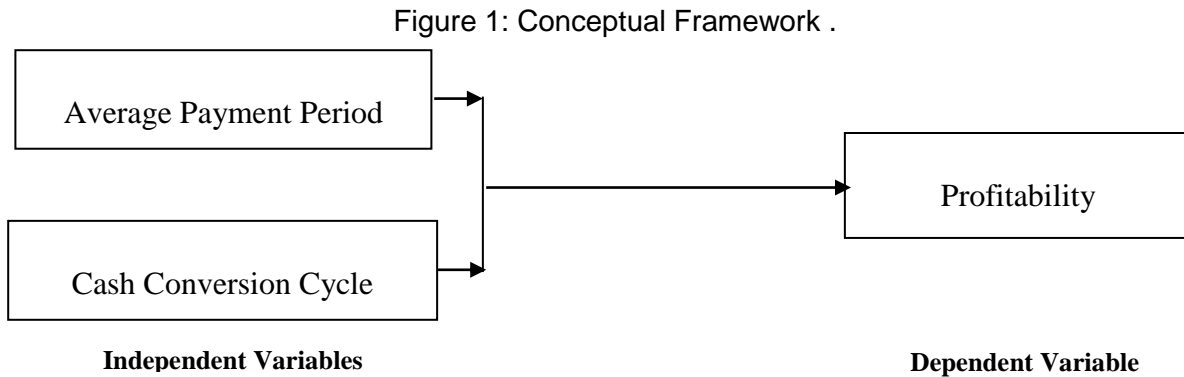
Uwuigbe, Uwuigbe, Uwalomwa and Egbide (2012) in their study on cash management and corporate profitability of manufacturing firms in Nigeria noted that profitability in firms can be achieved through efficient running of manufacturing operations and optimal management of cash. This is because cash shortage can disrupt manufacturing operations while excessive cash can remain idle without contributing anything towards the firm's profitability. Zawaira and Mutenheri (2013) asserted that firm's profitability may not be influenced by all working capital measures. In their study of the association between working capital management and profitability of non-financial firms listed on Zimbabwe Stock Exchange noted that profitability was not associated with receivables collection period, inversion conversion period, cash conversion cycle, quick ratio, current asset ratio among other measures. Rather, profitability was enhanced by liquidity and size of the firm. Payables deferral method was found to negatively influence profitability. The study recommended that Zimbabwean firms should effectively and efficiently manage liquidity and payables if they were to achieve profitability.

Mavutha (2010) argued that corporate profitability is achieved through optimal management of working capital. Specifically, in his study on the working capital management in relation to corporate profitability among Kenyan listed firms noted that shortening collection period and stretching payment period boost corporate profitability. Inventory conversion period was also noted to increase corporate profitability. This is because maintaining higher levels of inventory on hand was argued to reduce production costs due to potential interruptions and price valuations associated with stock outs.

Owele and Makokeyo (2015) argued that the firm's profitability rests on the working capital management approach adopted by such a firm. In their study on working capital management approaches and financial performance of agricultural firms listed in Nairobi Securities Exchange, the authors noted that most profitable firms used a conservative working capital management approaches while those that used aggressive capital management approaches were less profitable. It was further noted that firms may register high profits in relation to large asset base but still generate low profitability. This is associated with larger proportions of assets being idle and therefore affecting profitability. Waithaka (2012) on the other hand emphasized the importance of efficient management of working capital to improve

profitability. He argues that efficient cash management, receivables and inventory management had direct influence on sales, growth in total assets and increase firm profitability.

Conceptual Framework



The conceptual framework indicated that the independent variables were two and included average payment period (APP) and cash conversion cycle (CCC). Profitability was illustrated as the dependent variable while County Government regulations constituted the intervening variable. The framework further indicated that there was a hypothesis that APP, and CCC influenced profitability of manufacturing firms in Nakuru town. It was also believed that there were regulations by the County Government that were likely to influence how working capital management impacted on profitability of these firms in Nakuru town. This conceptual framework was one of the guiding principles of the study.

METHODOLOGY

Research Design

A research design is simply the roadmap of conducting an empirical study (Kothari, 2008). This study adopted descriptive survey research design which is quantitative in nature. Descriptive design is synonymous with most of empirical studies since such studies seek to find out the description of given phenomena. The study surveyed employees working with manufacturing firms in Nakuru town and was conducted over a period of two months. This further justified the choice of this design due to the specific period of conducting the study.

Target Population

The target population comprises of members who have close similarities. The accounts/finance employees and managers of manufacturing firms in Nakuru town constituted the target

population. There were a total of 156 employees attached to the aforesaid sections of the said firms. The study focused on the accounts/finance employees and managers due to the perception that they were the most conversant persons regarding issues touching on working capital and profitability of their respective entities.

Sample and Sampling Technique

The relatively large population (156) necessitated sampling. According to Jacobs (2011), when the target population equals to or exceeds 100 ($N \geq 100$) sampling is required. The study adopted Nassiuma (2000) formula to calculate the sample size as shown.

$$n = \frac{NC^2}{C^2 + (N-1)e^2} \quad \text{Where}$$

n = Sample size

N = Target population size

C = Coefficient of variation (0.5)

e = error margin (0.05)

$$\text{Therefore, } n = \frac{156 (0.5)^2}{0.5^2 + (156-1)0.05^2}$$

$$n = 61.2$$

$$n = 62 \text{ respondents}$$

Accordingly, the size of the sample was 62 respondents. In order to ensure fair representation, stratified random sampling method was adopted where the 23 manufacturing firms constituted 23 strata.

Research Instrument

The study used a set of structured questionnaires to collect primary data from the 62 sampled respondents. The questionnaire according to Mugenda and Mugenda (2009) is a suitable instrument for collecting primary data in survey studies. The questionnaire was categorized in such a way that it captured data pertinent to respondents' demographics and study objectives.

Pilot Testing

A pilot study was conducted before carrying out the actual study. The pilot was conducted in Eldoret town whereby a few manufacturing firms were randomly selected. The essence of pilot testing was to determine the reliability and validity of the research instrument. Validity and reliability are present in every research design for reducing the risk of getting wrong answers

which are not cannot be generalizable in nature (Saunders et. al. 2007). While, validity aims to investigate the level of complication of the research design and the extent of control, achieved to set research question reliability guarantees the consistency and legitimate generalizability of results which are obtained (Walliman, 2006). Reliability was tested using the Cronbach alpha whereby the reliability threshold was alpha equal to or greater than 0.7. The results of the reliability test as shown in Table 1 indicated that the questions under each variable were reliable.

Table 1: Reliability Test Results

Variable	Test Items	Alpha Value (α)
Average Payment Period	6	0.81
Cash Conversion Cycle	6	0.79
Profitability	5	0.77

On the other hand, validity was tested using the Principal Axis Factoring (PAF) method whereby the factors under each of the three study constructs (average payment period, cash conversion cycle, and profitability) returned Eigen values greater than 1.

Data Collection Procedure

The official consent of the University was obtained in order to be allowed to proceed with data collection. This was followed by seeking the consent of the management of all targeted manufacturing firms. The questionnaires were administered on the respondents through the firm's management. The respondents were allowed about 5 working days to fill in the questionnaires. The filled questionnaires were then collected from the respondents through the management of the firms under survey.

Data Processing and Analysis

The collected questionnaires were verified to ensure that they were completely filled. Data coding, processing and analysis then followed where the Statistical Package for Social Sciences (SPSS) analytical tool was used. Descriptive statistics which included measures of distribution, central tendencies and variation were used. More so, inferential statistics in form of Pearson's correlation and multiple regression were employed. The following regression model was used.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \varepsilon$$

Where:

$$Y = \text{Profitability}$$

B_0	=	Constant
X_1	=	Average payment period
X_2	=	Cash conversion cycle
ε	=	Error Term
β_1, β_2	=	Régression coefficients of independent variables

EMPIRICAL FINDINGS

Response Rate

The questionnaire was administered to a total of 62 managers, accountants and finance officers working with manufacturing firms in Nakuru town. After a period of approximately five working days, the filled questionnaires were collected from the respondents. Out of the ones collected, 51 had been duly and correctly filled. This meant that that the response rate was 82.30% as depicted in Table 2. The response rate was conspicuously high which reflected sufficiency of the data collected.

Table 2: Response Rate

Questionnaires Issued	Questionnaires Successfully filled and Returned	Response Rate
62	51	82.30%

Descriptive Analysis for Average Payment Period

In addition, the study examined respondents' views on average payment period in connection with profitability of manufacturing firms in Nakuru town. The pertinent findings are reflected in Table 3.

Table 3: Descriptive Statistics for Average Payment Period

		n	Min	Max	Mean	Std. Dev
i.	Average payment period is an indicator of working capital	51	3	5	4.00	.566
ii.	Our firm takes more than a month to pay its creditors	51	2	5	2.92	1.017
iii.	Our firm takes long to pay its bills	51	2	4	2.82	.974
iv.	Average payment period influences our firm's profitability	51	2	4	3.41	.572
v.	The longer our firm takes to pay its creditors, the more the funds it has for its operations	51	2	4	3.25	.796
vi.	Increased funds leads to increased profitability	51	3	4	3.69	.469

It was generally concurred (mean \approx 4.00;stddev< 1.000) that average payment period is an indicator of working capital and increased funds leads to increased profitability. Nevertheless,

respondent remained unclear (mean ≈ 3.00 stddev ≈ 1.000) as to whether or not manufacturing firms take more than a month to pay their creditors; take long to pay their bills; or if average payment period influences their profitability; the longer they take to pay their creditors, the more the funds they have for their operations.

Descriptive Analysis for Cash Conversion Cycle

The study also examined the opinions of the sampled respondents in relation to cash conversion cycle and in light of profitability where the results of the descriptive analysis are as presented in Table 4.

Table 4: Descriptive Statistics for Cash Conversion Cycle

		n	Min	Max	Mean	Std. Dev
i.	Cash conversion cycle is an indicator of working capital	51	3	5	3.75	.483
ii.	Our firm has a short cash conversion cycle	51	2	5	3.63	.720
iii.	A short cash conversion cycle enhances or firm's liquidity	51	2	4	3.61	.635
iv.	Cash conversion cycle is managed by ensuring both accounts payable and receivable are at optimal level	51	2	4	3.53	.644
v.	Cash conversion cycle affects our firm's profitability	51	2	4	3.67	.622
vi.	A shorter conversion cycle enhances our firm's performance	51	2	4	3.57	.755

The study findings indicated that respondents were in agreement (mean ≈ 4.00 ; stddev < 1.000) that cash conversion cycle is an indicator of working capital; manufacturing firms have a short cash conversion cycle; a short cash conversion cycle enhances firm liquidity; cash conversion cycle is managed by ensuring both accounts payable and receivable are at optimal level; cash conversion cycle affects firm's profitability and that a shorter conversion cycle enhances firm's performance.

Descriptive Analysis for Profitability

The views of the sampled respondents in regard to profitability of manufacturing firms in Nakuru town were also examined. The views are presented in Table 5.

Table 5: Descriptive Statistics for Profitability

		n	Min	Max	Mean	Std. Dev
i.	The profits of our firm have been increasing over the years	51	3	4	3.96	.196
ii.	The gross operating income of our firm is relatively high	51	3	4	3.75	.440
iii.	The net operating income of our firm is relatively high	51	3	4	3.43	.500
iv.	There is effective management of current assets and current liabilities	51	2	4	3.29	.807
v.	Cash management is optimal	51	2	4	3.22	.879
vi.	There is effective management of cash receivables	51	2	4	3.61	.635
vii.	There is proper management of inventories	51	3	4	3.76	.428
viii.	Effective management of cash and inventories has increased our firm's profitability	51	3	4	3.63	.488

In respect to profitability, respondents admitted (mean \approx 4.00; stddev < 1.000) that the profits of manufacturing firms have been increasing over the years; the gross operating income of these firms is relatively high; there is effective management of cash receivables; there is proper management of inventories and that the effective management of cash and inventories has increased firms' profitability. It was further noted that respondents were non-committal (mean \approx 3.00; std dev < 1.000) to the opinion that the net operating income of manufacturing firms is relatively high; there is effective management of current assets and current liabilities; and that cash management is optimal.

Inferential Analysis: Relationship between Average Payment Period and Profitability

The study further examined the relationship between average collection period and profitability of manufacturing firms in Nakuru town. Table 6 depicts the findings of pertinent correlation analysis.

Table 6: Relationship between Average Payment Period and Profitability

AveragePaymentPeriod		Profitability
	Pearson Correlation	.374**
	Sig. (2-tailed)	.007
	n	51

** . Correlation is significant at the 0.05 level (2-tailed).

It was noted that average payment period and profitability had a positive, moderate and statistically significant relationship at 0.05 significance level ($r = 0.374$; $p < 0.05$). Therefore,

average payment period had a positive influence on profitability of the firms under study. It can also be deduced that by delaying payment to creditors and paying bills, the firms would potentially employ the funds to generate more revenue and, therefore, increase their profitability. It can also be inferred that an increase in average payment period would increase profitability and the reverse is also true.

Inferential Analysis: Relationship between Cash Conversion Cycle and Profitability

This part covers the findings emanating from correlation analysis between cash conversion cycle and profitability of manufacturing firms in Nakuru town. The results of the analysis are presented in Table 7.

Table 7: Relationship between Cash Conversion Cycle and Profitability

CashConversionCycle		Profitability
	Pearson Correlation	-.353*
	Sig. (2-tailed)	.011
	n	51

*. Correlation is significant at the 0.05 level (2-tailed).

The findings illustrated a negative and statistically significant relationship between cash conversion cycle and profitability at 0.05 significant level ($r = -0.353$; $p < 0.05$). This implied that cash conversion cycle had a negative and significant effect on profitability of manufacturing firms. It could also be argued that the longer the firm takes to convert the resource inputs into cash flows through extended accounts collection period, long inventory conversion period and shorter average payment periods, then the low profitability the firm would likely realize, hence the negative effect; and the reverse is also true.

Inferential Analysis: Effect of Working Capital Management on Profitability of Manufacturing Firms

The study further evaluated the extent to which working capital management affected the profitability of manufacturing firms in Nakuru town. This was achieved through the use of requisite inferential statistics (coefficient of determination, ANOVA, and multiple regression analysis).

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.482 ^a	.233	.166	.30881

a. Predictors: (Constant), AveragePaymentPeriod, Cash Conversion Cycle

The results outlined in Table 8 are in respect to the correlation and coefficient of determination analyses; R and r^2 respectively where R = 0.482 while $r^2 = 0.166$. The study results indicated that there exists a moderate and positive relationship between working capital management and profitability of manufacturing firms in Nakuru town. More so, the results show that 16.6% of firm profitability could be explained by working capital management.

Table 9: ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.330	4	.333	3.487	.014 ^a
	Residual	4.387	46	.095		
	Total	5.717	50			

a. Predictors: (Constant), AveragePaymentPeriod, Cash Conversion Cycle

b. Dependent Variable: Profitability

The results of analysis of variance as reflected in Table 9 held that working capital management as manifested by inventory conversion cycle, cash conversion cycle, average collection period, and average payment period had a statistically significant relationship with firm profitability (F = 3.49; $p < 0.05$).

Table 10: Regression Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	2.947	.816		3.613	.001
AveragePaymentPeriod	.213	.157	.235	1.354	.182
Cash Conversion Cycle	.220	.107	.300	2.061	.045

A. Dependent Variable: Profitability

$$Y = 2.947 + 0.213X_1 + 0.220X_2$$

Y, X_1 , X_2 , X_3 , and X_4 represent profitability, average payment period, and cash conversion cycle respectively. According to the results, the first null hypothesis failed to be rejected. The

foregoing was due to the fact that average payment period ($t = 1.354$; $p > 0.05$) had a relationship with firm profitability that was not statistically significant. However, the second null hypothesis was rejected since the relationship between cash conversion cycle and firm profitability was found to be statistically significant ($t = 2.061$; $p < 0.05$). The results further indicated that, in general, working capital management had a significant effect on profitability of manufacturing firms in Nakuru town ($t = 3.613$; $p < 0.05$). It is indeed a fact to state that, cash conversion cycle was the most significant indicator of working capital management in as far as profitability of the aforesaid firms was concerned.

Summary

It was generally concurred that average payment period is an indicator of working capital and that increased funds lead to increased profitability. Nevertheless, it was unclear whether manufacturing firms take more than a month to pay their creditors; take long to pay their bills; average payment period influences their profitability; and if the longer the firm takes to pay its creditors, the more the funds it has for its operations. In addition, it was noted that average payment period and profitability had a positive and statistically significant relationship ($r = 0.374$; $p < 0.01$).

It was believed that cash conversion cycle is an indicator of working capital and that their firm has a short cash conversion cycle. It was also agreed cash conversion cycle was managed by ensuring both accounts payable and receivables are to optimal level and that a short cash conversion cycle enhances firm's liquidity and profitability. It was further admitted that a shorter conversion cycle enhanced manufacturing firms' performance. The study revealed existence of a negative and statistically significant relationship between cash conversion cycle and profitability at 0.05 significant level ($r = -0.353$; $p < 0.05$).

Profitability is a key element for the continued success of a firm. In respect to this construct, it was generally agreed that profits of their firms have been increasing over the years coupled with a relatively high gross operating income. It was also admitted that there is effective management of cash receivables, proper management of inventories and that the effective management of cash and inventories in the firm has increased their firm's profitability. It was, however, not clear whether the net operating income of manufacturing firms was relatively high and whether there was effective management of current assets and current liabilities and that cash management was optimal.

CONCLUSIONS

It was concluded that the average payment period had a positive effect on profitability of the firms. The findings supported earlier observations (Hassan et al., 2014) that elucidated that the average payment period was positively related to gross profit margin. An increase in the average payment period would likely result in enhanced profitability. The study further concluded that average payment period is an indicator of working capital. This was in agreement with the findings of a study on the Jordanian manufacturing firms that noted that average payment period was a proxy for working capital. The study further concluded that increased funds leads to increased profitability. The results also concurred with the findings of a study conducted by Mathuva (2010) on the influence of working capital management on corporate profitability in Kenya. Mathuva's study had found that average payment period highly and positively influenced profitability of firms.

In regards to the influence of cash conversion cycle, it was inferred that cash conversion cycle had a substantial negative effect on profitability. The findings were similar to a previous study conducted by Uyar (2009). The study had noted that there was a considerable negative association between CCC and profitability of firms listed in Istanbul Stock Exchange. The findings also concurred with Vijayakumar (2011) who had observed that the cash conversion cycle had a negative link with firm performance in selected Indian automobile firms. The findings were also in agreement with a local study by Makori and Jagongo (2013). The study had found that cash conversion cycle and number of day's accounts receivable had a negative association with profitability. This is associated with the lengthy period that may be undertaken to realize cash flow on input resources. The study also concluded that cash conversion cycle is an indicator of working capital and that their firm has a short cash conversion cycle which is managed by optimizing payables and receivables. In addition, it was inferred that a short cash conversion cycle enhances firm's liquidity and profitability.

RECOMMENDATIONS

To realize enhanced firm profitability, the study recommends that manufacturing firms should have an extended payment period through negotiation with the firm stakeholders such as the 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.

Cash conversion cycle is critical in the management of working capital. It is therefore recommended that manufacturing firms should have a shorter cash conversion cycle in order to realize cash promptly to run the firm profitably. This may be achieved through optimally managing the average collection period, inventory conversion period and average payment

period. In other words, payables and receivables should be optimally managed in order to enhance firm liquidity and profitability.

LIMITATIONS

There were a number of challenges that were encountered as the research study was being conducted. However, two limitations stood out; that is, the structure of the questionnaire and the skepticism of some respondents. First, the research questionnaire constituted close-ended questions only; an aspect that dissuaded the sampled respondents from giving their open opinions. Regarding the foregoing limitation it was ensured that the questionnaire captured the most relevant aspects of the study variables. Another challenge was the skepticism of some of the sampled respondents. They were not willing to participate in the study. Regarding this limitation, it was explained to them the importance of participating in the study and also that the study findings will be shared with any interested party.

SUGGESTIONS FOR FURTHER STUDIES

The study suggests areas that ought to be further researched in Kenya in regard to working capital management and profitability. Scholars and researchers are advised to carry out empirical studies on the relationship between working capital management and profitability of firms in other sectors such as finance, agriculture and transport. Scholars should also undertake exploratory studies on other factors that may influence profitability of firms besides working capital management.

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