

EFFECTS OF WORKING CAPITAL MANAGEMENT ON FINANCIAL PERFORMANCE OF PRIVATE MANUFACTURING FIRMS IN KENYA

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Abstract: *In Kenya, manufacturing is the second most important sector, the first being Agriculture. The sector's importance is based on its contribution to gross domestic product, foreign exchange earnings and the number of people it employs. The sector is however struggling since the 1980s and has seen some companies cease operating. Unfavorable working conditions have been cited as one of the huge causes why the companies have ceased operation. This issue has caused manufacturing firms to maintain inadequate or excessive working capital levels, of which both scenarios are undesirable and impact negatively on the financial performance. Consequently, the objective of this research was to examine the impact of working capital on overall financial performance of manufacturing firms in Kenya. The study objectives were: examining the impact the level of Accounts receivables and cash management on the financial performance of Kenyan manufacturing firms. The research study employed a multi correlational research design. Secondary data was used and a record survey sheet was used to collect. The target was 311 private manufacturing firms that are registered by KAM and which are located in Nairobi Industrial Area and its environments. Proportional allocation was used to determine the size of each sample for different strata. The data collected was analyzed using SPSS statistical software for analysis. The general multiple regression analysis was then used to estimate causal relationship between financial performance and the independent variables. The results of the study showed that Account Receivables have a positive and statistically significant effect on Financial Performance of private manufacturing firms in Kenya. Cash management was found to a positive and statistically significant effect on financial performance of private manufacturing firms in Kenya and is therefore an important variable in the determination of financial performance and the implication was that with these resources the firm amassed more resources to continue with its operations and consequently realized increases in financial performance. The study makes the following recommendations; private manufacturing firms should establish optimal cash levels. Board of Directors and Financial managers are recommended to come up with ideal credit policies that minimize the risks of bad debts and collection costs.*

Keywords: *Accounts receivables, Cash management, & Financial performance*

1.1 Introduction

Working capital deals with the financial stability of a company and also plays a crucial role in maximizing shareholders wealth, therefore a very important aspect in every company. Working capital refers to the capital an organization has at its disposal to fund its day to day operations. Working capital is among the top on the list of firms challenges currently being faced by manufacturing firms. In fact, the only issue ranked as a bigger concern is escalating costs- which are also directly related to working capital and cashflow. Maintaining an

optimum level of working capital is difficult. At optimum level a firm should have neither excess working capital nor inadequate working capital because both scenarios have adverse effects on profitability and liquidity positions. It is therefore, important that management puts in place effective working capital management practices. Efficiency in working capital management makes it possible for the firm to maximize the benefits from net current assets by having an optimum level to meet working capital demands. In manufacturing firms, administration of working capital is an important and challenging task due to the high proportion of working capital involved and its peculiar characteristics.

Liquidity and profitability aspects of a firm are very important in a corporate business life (Vataliya, 2009). Consequently there should be a tradeoff between the liquidity and profitability goals in a company. Each of them has its importance and as such none of them should be sacrificed at the expense of the other. Organizations cannot survive the long run if they are not making profits and on the other hand if they are not liquid they will be faced with the threat of insolvency and or bankruptcy. Managers should therefore put effective measures of managing working capital because this ultimately determines if the firm makes profits or not. Cash conversion Cycle is one of the most used measures of working capital management. It refers to the time lapse between when the raw materials are purchased and the time the sales of finished goods is done. Working capital investment is larger where there is a huge time lag and some findings show that this leads to increased profitability because it encourages more sales.

The manufacturing sector in the developed economies is large and contributes greatly to the economic development. While the manufacturing sector has been declining for the last two decades, it remains a vital part of developed countries economies. In 2013, the sector employed about 8.8% of total U.S people in employment which is about twelve million workers (Economic Policy Institute, 2014). In 2009 the sector employed about 2.6 million people in the U.K which is over 8% of total UK employment. The sector also generated one hundred billion pounds in gross value added which represents 11% of the UK economy (Economic Policy Institute, 2014).

According to 2012 report by World Bank, manufacturing contributes to only 13% of GDP in Sub Saharan Africa. Manufacturing accounts for 25% of exports in SSA (Economic Policy Institute, 2014). In Nigeria, the manufacturing sector is small accounting for an estimated 2.6% GDP in 2012. Real growth in the sector averaged 8.5 p.a during the period of 2005-2012. The manufacturing sector is also one of the most important components of the Tunisian economy, with manufacturing exports accounting for 70% of the total exports (Economic Policy Institute, 2014).

Kenya's manufacturing sector is relatively strong compared to other countries that are in a similar phase of economic development. In 2013, the sector contributed an estimated 10.6% to GDP. Kenya is also one of the top exporters of manufactured goods in SSA region. According to the United Nations Industrial Development Organization (UNIDO), Kenya's manufacturing value added per capita was US\$ 61.8 in 2012, up 2.6 % in real terms from 2005. Kenya's manufacturing sector is dominated by food and consumer goods processing, meat and fruit canning, wheat flour and maize milling and sugar refining. Real growth in the manufacturing sector averaged 4.1 % p.a. during 2006- 2013, lower than the average annual growth in overall real GDP of 4.6% p.a. (Economic Policy Institute, 2014). Consequently, manufacturing sector output has declined in recent years which exposes a gap in the country's ability to achieve a fully industrialized economy by 2030, in accordance with the country's vision 2030.

Manufacturing sector employs about 20% of the total workers in the economy, which is higher than what other sectors employ. This asserts that the manufacturing sector is an important sector in the Kenyan economy, and developing this sector will generate more employment, foreign exchange and increased gross domestic product.

There are 721 manufacturing firms registered in the directory of Kenya Association of manufacturers (KAM, 2016). KAM is a membership organization whose role is to provide leadership and services aimed at enhancing the development of a competitive manufacturing sector in Kenya. Manufacturing firms registered under KAM are more formal than other unregistered firms which makes this sector an appropriate area of study, especially because the study requires sensitive financial information. The target population will be 311 private firms that are located in Nairobi and its environs that are in the 2017 directory of KAM.

1.2 Problem Statement

The manufacturing industry in Kenya accounts for about 14% of the Gross Domestic Product, which is a slight increase since independence because the sector has stagnated since the 1980's. In Kenya a lot of manufacturing firms are struggling to break even and some key players have been forced to relocate to other countries. Cadbury East Africa, Colgate Palmolive, Reckitt Benckiser and Procter and Gamble are some of the huge international firms that have stopped their manufacturing operations in Kenya, preferring to base their manufacturing in other countries. Eveready, Tata Chemicals, Kenya Fluorspar are some of the many firms that have scaled down their operations by closing some of their factories. Sameer Africa has also closed down its Yana tyres manufacturing factory in Nairobi after being in operation for decades.

According to Kenya Manufacturers' Association about 10 to 15 companies shut down every year. Majority of these firms are privately owned. Companies are shutting down and others are operating at breakeven point (KAM, 2006). All these companies cite high operation costs as the major cause of the precarious financial situation (Republic of Kenya, 2007). If these problems are not addressed manufacturing firms can go under which can have a significant ripple effect on the entire economy (Ali, 2009). This will also mean that Kenya will not be able to achieve its vision 2030 of being a middle level economy.

Most of the past researchers have found a significant relationship between working capital management and firms' financial performance. The researches have also discovered that some criteria used by managers in making working capital decisions do not rely on Finance principles, but rather they use vague rule of thumb or poorly constructed models (Emery, Finnerty and Stowe, 2004). This results in inefficient use of working capital, which results in an organization being overcapitalized, undercapitalized or liquidating. According to Egbide (2009) large number of business failures is largely due to the inability of the financial manager to plan and control the working capital of their firms. These working capital practices inadequacies are still practiced today in the form of high bad debts, high inventory costs, liquidity problems etc. that adversely affect their operating performance (Egbide, 2009).

In spite of the above consequences, this field has not been given significant attention in Kenya. After carrying out literature review, the researcher failed to find any directly related research topics carried out in Kenya, particularly in private manufacturing firms which makes the largest number compared to public manufacturing firms. The researcher therefore, believes the problem is largely untouched and there is a knowledge gap that needs to be filled.

Lack of proper research on this area presents Kenyan company managers with limited facts in relation to working capital management and its effect on firm's performance. This constitutes the study problem, and thus

the need to study effects of working capital practices on the performance of private manufacturing firms in Kenya.

1.3 General Objective

To determine the effect of working capital management on financial performance of private manufacturing firms in Kenya

1.3.1 Specific Objectives

1. To determine the effect of accounts receivables on financial performance of private manufacturing firms in Kenya.
2. To determine the effect of cash management on financial performance of private manufacturing firms in Kenya

1.4 Research Questions

1. Accounts receivables has no effect on the financial performance of private manufacturing firms in Kenya.
2. Cash management has no effect on the financial performance of private manufacturing firms in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical review

2.1.1 Asset Profitability Theory.

Asset Profitability is a theory by Sathamoorathi (2002) and it argues that increasing current asset to total assets ratio affects the firm's profitability negatively. It further argues that increasing current liabilities to total liabilities ratio affects the firm's profitability positively. Consequently, according to this theory decreasing the ratio of current assets to total assets and increasing the ratio of current liabilities to total liabilities, when carried out independently, results in an increase in profitability but with it also comes an increase in corresponding risk. There are several explanations as to why increasing the ratio of current assets to total assets decreases profitability and one is that current assets has lower profitability compared to fixed assets. Also, short term liabilities are cheaper than long term liabilities. According to this theory decreasing the ratio of current assets to total assets usually result in increased profitability and an increase in risk as well. The reasoning behind the increased profitability is due to the increased fixed assets which generate higher returns (Sathamoorathi, 2002).

Sathamoorathi (2002) in this theory also states that increasing the ratio of current liabilities to total assets increases profitability. The increase in profits is because there's an increase in short term liabilities, which are short term sources of finance and a decrease in the long term sources of finance. Due to the fact that short term sources of funds are cheaper compared to long term sources of finance, increasing the ratio simply means substituting cheaper sources for more expensive finance sources. Consequently, there will be a decline in cost resulting in increased profits.

2.1.2 Cash Management Theory

Cash management Theory is concerned with the managing of cash flows into and out of the firm; cash flows within the firm and cash balances held by the firm at a point of time by financing deficit or investment surplus

cash. Short term management of corporate cash balances is a major concern of every firm because it's impossible to predict cash flows accurately, more so the inflows, and there is no perfect coincidence between cash outflows and inflows. During some periods cash out flows will exceed cash inflows due to payments for dividends, tax or inventory build up. At other times, cash inflow will be more than cash sales and debtors may realize in large amounts promptly (Pandey, 2005). An imbalance between cash inflows and outflows would mean failure of cash management function of the firm. Persistence of such an imbalance may cause financial distress to the firm and, hence, business failure.

The theory may be applied by firms today to help manage their cash while taking into consideration the possible and inevitable fluctuations in their daily cash flow. In regard to this theory companies should have an upper and lower limit in which their cash balance move. To ensure the firm stays within these limits the firms either buy or sell marketable securities only when the cash balance is equal to any one of the limits.

When the firm's cash balance reaches the upper limit it purchases a certain number of saleable securities so that it can come back to the desired level. In the scenario that cash balance of the company reaches the lower limit then the firm sells its saleable securities and acquires enough cash to fix the problem.

2.2 Conceptual Framework

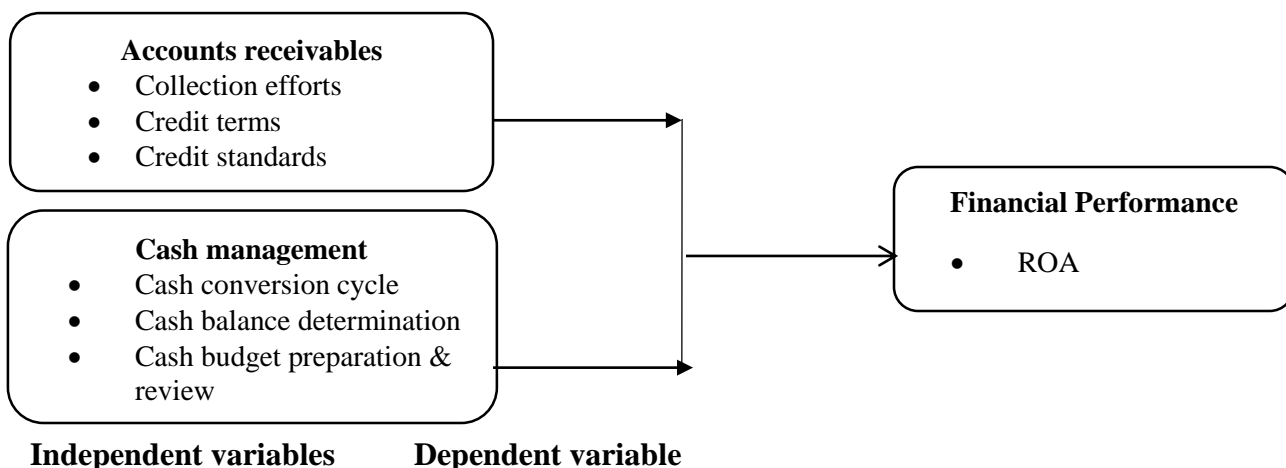


Figure 1: Conceptual framework

2.3 Empirical Review

2.3.1 Accounts Receivables

Accounts receivables are also known as debtors and occur when a company gives their customers credit terms to pay for products or services. Customers that buy products or services on credit are called sundry debtors and are a major component in business. A study conducted by Bougheas, Mateut and Mizen (2009) showed that in Germany and Italy account receivables account for more than a quarter of their total assets. In American firms, 17.8% of the total assets are account receivables (Rajan and Zingales, 1995). This makes management of accounts receivables indispensable. There are several reasons for extending trade credit to consumers.

Deloof (2003) made a study of 1009 big non monetary firms for a length of 5 years from 1992- 1996 to determine if working capital influences profitability of Belgian firms. In his study, Deloof (2003) measured profitability by gross operating income which he calculated as (total assets less financial assets). He justified

his deducting of financial assets from total Assets within the method through maintaining that a number of companies in his sample, financial assets, which specifically include shares in different companies, are a significant part of the total asset and as such operating activities would have contributed little to the overall ROI. By way of using correlation and regression analysis, Deloof realized a significant negative relationship among gross operating profits and the number of days in accounts receivables, inventories and debts payables of Belgian corporations. Deloof observed that for Belgian corporations, there is a negative relationship between number of days money owed payable and gross earnings (gross profit). He argues that the negative relationship is because companies that don't make as much profits wait longer to settle their bills.

A comparable research on the impact of working capital management on corporations' profitability was carried by Dermigunes and Samiloglu (2008) on Turkish corporations. Their sample was drawn from companies listed on the Istanbul stock trade throughout 1998-2007. Using multivariate regression model, their empirical findings show that debts receivables duration, inventory duration and leverage affect profitability negatively while sales growth has a positive impact on a firm's profits.

In the Kenyan perspective, Kungu (2015) undertook a study of 81 manufacturing firms indexed at the Nairobi stocks exchange to determine the impact working capital management variables has on the profitability of those firms. Kungu (2015) used correlational research design and he justified its use by stating that it explores relationships to make predictions. The findings of his study showed that there was a positive linear relationship between credit policy and profitability. He concluded that firms can enhance their profits by managing their account receivables in more efficient methods. His findings however contradict those of Deloof (2003) whose findings showed a negative relationship between gross operating income and the number of days in Accounts receivables. There is therefore need to research this topic further to solve the contradiction, and this is what this research study aims to do.

2.3.2 Cash Management

According to Lantz (2008) managers have three motives for holding cash; transaction motive, speculative motive and precautionary motive. The transaction motive is whereby they keep cash to meet their own obligations such as payment to suppliers. Companies cannot depend on customers to always pay on time because they sometimes pay after due date and this translates to extra costs for the firm. The speculative motive refers to the situation where by the market is unpredictable, and opportunities could arise at any time and when they arise, firms should have cash available. Lastly is the precautionary motive where by just like the market is unpredictable so are the activities of the business. These activities include a sudden increase or decrease in demand, machine breakdowns which could occur and have a negative influence for the whole company if not taken care of (Lantz, 2008).

In their research paper, Lazaridis and Tryfonidis (2006) studied a sample of 131 companies listed in Greece on the Athens Stock Exchange for a period of four years between 2001 and 2004. The focus of the study was establishing whether there exists a relationship that is statistically significant between profitability and cash conversion cycle and its components (inventory, accounts payables and accounts receivables). They used the Pearson correlation and the pooled ordinary least squares (OLS) to analyze the relationship. They defined profitability as the gross operating profit. They found that lower gross operating profit is associated with an increase in the number of days of accounts payables. They also concluded that managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component of cash conversion to an optimum level.

Biger et al., (2010) conducted a research similar to Lazaridis and Tryfonidis's (2006) though it differed in that it precisely looked at American Manufacturing firms listed on the New York Stock Exchange. They used a sample of 88 American firms for a period of three years from 2005 to 2007 to establish the relationship between working capital management and corporate profitability. They used regression analysis and like Lazaridis and Tryfonidis (2006) they too found a statistically significant relationship between cash conversion cycle and profitability measured as gross profit margin. Their conclusion is that profitability can be enhanced if firms manage their working capital efficiently.

Mwangi (2013) investigated the relationship between working capital management and financial performance of manufacturing firms quoted at the Nairobi Stock Exchange for the period 2007 to 2011. The findings were that Cash conversion cycle period and Net payment period has significant negative relation with return on Equities. It also found out that inventory turnover in days negatively affects relationship with ROE. This study however did not evaluate whether when taken independently, current assets increase or decrease, current liabilities and current assets to total asset ratio affects the profitability of the firm.

2.4 Summary

The upshot of the literature review on working capital management is that while working capital components impact on financial performance of firms, there is ambiguity regarding the direction of the impact of different components on firms' financial performance. The literature review considers four independent variables of working capital which are accounts receivables, cash management, accounts payables and inventories. There are conflicting conclusions on the relationship between working capital variables and their impact on financial performance of firms. For example Deloof (2003) study findings conclude a negative relationship between day sales inventory and profitability which is contrary to Mathuva (2010) whose study concludes a significant positive relationship on the same. This shows that there is no clear direction of the relationship between working capital variables and financial performance. This study focus is on private manufacturing firms which will help indicate whether the difference in the direction of the impact is affected by the nature of industries selected in different studies.

2.5 Research Gaps

Dellof and Jegers (1996) argued that large amounts of inventory and a flexible trade credit policy can lead to increased profitability. Zariyawati et al. (2009) on the contrary found that high risk investment can result in a higher return. Firms with high liquidity in working capital will therefore be faced with a lower risk of failing to meet its financial obligations, but will experience low profits. Sathamoorthi (2002) states that an increase in total assets to the total asset ratio affects firm's profitability negatively while increase in current liabilities to total liabilities has a positive effect on profitability of firms. The conflicting arguments create a gap whereby some arguments favor high levels of current assets while others are of contrary suggestion. There is therefore need for a study to establish which argument is applicable in manufacturing firms in Kenya.

After carrying out an empirical review, the researcher came to the conclusion that all the reviewed studies have focused on the effect of inventory collection period, debt collection period, payables period and debt ratio on performance of the firm. None of the reviewed literature has established whether or not and how the level of currents assets and current liabilities affect the financial performance of the firm. Further, some researchers have looked at the effect of working capital management of the performance of all forms combined, without studying each industry sector individually. Some research findings are therefore misleading because industry

sectors are different, and each sector has different working capital needs and this may affect how each sector financial performance is affected by working capital.

3.0 METHODOLOGY

This research adapted correlational research design to explore relationships and to make predictions. The design was used to identify, describe and show relationships and to analyze variables of working capital management that affect financial performance in private manufacturing firms in Kenya. The study targeted population was 311 private manufacturing firms operating in Nairobi County. The study will focus exclusively on private manufacturing firms that deal with transformation of raw materials to finished products. The 311 firms operate in twelve major industry groups.

Proportional allocation was used to determine the size of each sample for different strata. The sample was stratified into the twelve sub-sectors as per KAM 2011 directory classification. The sample was determined from each strata to give a total sample of 78 manufacturing companies.

The researcher used secondary data in empirical analysis. This study used published secondary data from the companies audited income statements and statement of financial positions posted on their respective websites. Data was collected, cleaned, sorted and coded using numerical numbers. It was then entered in the SPSS statistical software for analysis. Descriptive statistics and inferential statistics statistical techniques were used to analyze the data. To assess the impact of working capital management variables on financial performance of the industry, multivariate regression model will be used based on the cross sectional pooled data got from annual reports and other financial statements.

To test the proposition, the multiple regression model was used as follows;

$$FP_{it} = \beta_0 + \beta_1 AR_{it} + \beta_2 CM_{it} + \mu_{it} + \epsilon_{it} \dots\dots\dots (1)$$

Where

- FP_{it} is financial performance i at time t
- β_0 is the constant or intercept
- β_i ; ($i = 1,2,3,4$) is coefficient of regression
- AR_{it} Is independent variable, accounts receivables i at time t
- CM_{it} is independent variable, cash management i at time t
- μ_{it} is the individual level effect
- ϵ_{it} is the idiosyncratic error

4.0 RESULTS AND DISCUSSIONS

4.1 Descriptive statistics

Table 4.1 Descriptive statistics

	Return on assets	Accounts receivables	Cash management
Mean	0.174091	2.185227	0.602045
Std. Dev.	0.222107	2.064588	0.437863
Skewness	2.661172	2.698116	1.873311
Kurtosis	12.10199	10.08522	6.113966
Jarque-Bera	203.8182	145.4194	43.51224
Probability	0.000000	0.000000	0.000000

4.1.1 Accounts receivables

The measures used were mean, median, maximum and minimum value, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low performance mean of 2.185227% is associated with less volatility of the series. The standard deviation of; 2.064588% is high. Stock return portrays a positive Skewness 2.698116 indicating a right tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 10.08522 which is >3, which shows that the variable is normally distributed. Furthermore, significant JB value (145.4194) shows that the variable is normally distributed.

4.1.2 Cash management

The measures used were mean, median, maximum and minimum value, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low performance mean of 0.602045 % is associates with less volatility of the series. The standard deviation of; 0.437863 % is high. Stock return portrays a positive Skewness 1.873311 indicating a right tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 6.113966 which is >3, which shows that the variable is normally distributed. Furthermore, significant JB value (43.51224) shows that the variable is normally distributed.

4.1.3 Financial performance

The measures used were mean, median, maximum and minimum value, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low performance mean of 0.174091% is associated with less volatility of the series. The standard deviation of; 0.222107 % is high. Stock return portrays a positive Skewness 2.661172 indicating a right tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 12.10199 which is >3, which shows that the variable is normally distributed. Furthermore, significant JB value (203.8182) shows that the variable is normally distributed.

4.2 Unit root test

4.2.1 Financial Performance

Table 4.2 Financial Performance

Method	Statistic	P-value
Levin, Lin & Chu t	-20.7962	0.0000
Im, Pesaran and Shin W-stat	-6.86305	0.0000
ADF - Fisher Chi-square	48.0058	0.0002
PP - Fisher Chi-square	56.6539	0.0000

Table 4.2 presents the unit roots tests of the dependent variable Financial Performance. Particularly the table presents the results of one test of unit roots in a panels setting. From the test results the Levin, Lin & Chu t - 20.7962 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. Im, Pesaran and Shin W-stat -6.86305 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. ADF - Fisher Chi-square 48.0058 and p-value 0.0002 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. PP - Fisher Chi-square 56.6539 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. The probabilities are very significant implying that we do reject the null hypothesis of a unit root problem. All the above unit roots methods show that the variables were stationary at level.

4.2.2 Account Receivable

Table 4.3 Account Receivable

Method	Statistic	P-value
Levin, Lin & Chu t	-81.2622	0.0000
Im, Pesaran and Shin W-stat	-26.0607	0.0000
ADF - Fisher Chi-square	76.3473	0.0000
PP - Fisher Chi-square	76.9487	0.0000

Table 4.3 presents the unit roots tests of the independent variable Account Receivable. Particularly the table presents the results of one test of unit roots in a panels setting. From the test results the Levin, Lin & Chu t - 81.2622 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. Im, Pesaran and Shin W-stat -26.0607 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. ADF - Fisher Chi-square 76.3473 and p-value 0.0002 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. PP - Fisher Chi-square 76.9487 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. The probabilities are very significant implying that we do reject the null hypothesis of a unit root problem. All the above unit roots methods show that the variables were stationary at level.

4.2.3 Cash Management

Table 4.4 Cash Management

Method	Statistic	P-value
Levin, Lin & Chu t	-77.2886	0.0000
Im, Pesaran and Shin W-stat	-25.3086	0.0000
ADF - Fisher Chi-square	79.3229	0.0000
PP - Fisher Chi-square	88.5918	0.0000

Table 4.4 presents the unit roots tests of the independent variable Cash Management. Particularly the table presents the results of one test of unit roots in a panels setting. From the test results the Levin, Lin & Chu t - 77.2886 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. Im, Pesaran and Shin W-stat -25.3086 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. ADF - Fisher Chi-square 79.3229 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. PP - Fisher Chi-square 88.5918 and p-value 0.0000 test statistics reveals that the null hypothesis that the variable is stationary at level was not rejected. The probabilities are very significant implying that we do reject the null hypothesis of a unit root problem. All the above unit roots methods show that the variables were stationary at level.

4.3 Correlation Analysis

Table 4.5: Correlation Analysis

	Return on assets	Accounts receivables	Cash management
Return on assets	1.000000		
Accounts receivables	0.601664	1.000000	
Cash management	-0.152915	-0.285414	1.000000

Table 4.5 presents the results on correlation analysis of the five variables. From the results the correlation analysis shows that there was positive correlation between account receivables and Return on assets of 0.601664. There was a negative effect between cash management and return on assets. The aspect was decrease in cash management causes a decrease in returns on asset. These results shows that the level of muticollineariry is very low. This would allow for regression analysis to be conducted efficiently.

4.4 Cointegration test

Engle and Granger (1987) note that, cointegration test is based on an examination of the residuals of a spurious regression performed using I (1) variables. If the variables are cointegrated then the residuals should be integrated of order zero I (0). On the other hand if the variables are not cointegrated then the residuals will be integrated of order one I (1).

Table 4.6: Kao Residual Cointegration Test

Kao Residual Cointegration Test		
	t-Statistic	Prob.
ADF	-2.940228	0.0016
Residual variance	0.037799	
HAC variance	0.017433	

From table 4.6 the Kao Residual Cointegration Test t-statistic value of -2.940228 and the p-value of 0.0016 implies that is cointegration among the various measures of working capital and financial performance.

4.5 Autocorrelation

Table 4.7: Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.935780	Prob. F(2,37)	0.4014
Obs*R-squared	2.118481	Prob. Chi-Square(2)	0.3467

Table 4.7 Presents the results for the test of serial correlation. The test results does not reject the null of no autocorrelation up to order. The null hypothesis was not rejected on the bases that the p-value of the two test statistics was statistically significant. The F-statistic value of 0.935780 and the p-value of 0.4014 indicates that the residuals were serially uncorrelated. The Obs*R-squared value of 2.118481 and the p-value of 0.3467 shows that there was no autocorrelation.

Table 4.8: Regression Coefficients

Dependent Variable: Financial performance Method: Panel Dynamic Least Squares (DOLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Accounts receivables	0.050838	0.012180	4.173923	0.0002
Cash management	0.234850	0.086655	2.710162	0.0109
R-squared	0.584223	Mean dependent var		0.174091
Adjusted R-squared	0.423277	S.D. dependent var		0.222107
S.E. of regression	0.168673	Sum squared resid		0.881972
Long-run variance	0.012397			

4.5.1 Accounts receivables

From table 4.8 the regression coefficient of Accounts receivables was found to be 0.050838. This value shows that holding other variables in the model constant, an increase in Accounts receivables by one unit causes the financial performance to increase by 0.050838 units. The value of the coefficient is also positive. The coefficient was positive and statistically significant with a t-statistic value of 4.173923 and the standard error was found to be 0.012180 and the p-value was found to be 0.0002. Kungu (2015) used correlational research design and he justified its use by stating that it explores relationships to make predictions. The findings of his

study showed that there was a positive linear relationship between credit policy and profitability. He concluded that profits can be enhanced if firms manage their accounts receivables in a more efficient way. His findings however contradict those of Deloof (2003) whose findings showed a negative relationship between gross operating income and the number of days in Accounts receivables. There is therefore need to research this topic further to solve the contradiction, and this is what this research study aims to do.

4.5.2 Cash management

From table 4.8 the regression coefficient of Cash management was found to be 0.234850. This value shows that holding other variables in the model constant, an increase in Cash management by one unit causes the financial performance to increase by 0.234850 units. The value of the coefficient is also positive. The coefficient was positive and statistically significant with a t-statistic value of 2.710162 and the standard error was found to be 0.086655 and the p-value was found to be 0.0109. Mwangi (2013) did a study on relationship between working capital management and financial performance of manufacturing firms quoted at the Nairobi Stock Exchange for the period of five years from 2007 to 2011. The study found out that Cash conversion cycle period and Net payment period has significant negative relation with return on Equities. It also found out that inventory turnover in days has negative relationship with ROE. However, this study did not evaluate whether independently, increase or decrease in current assets, current liabilities, current assets to total assets ratio has any effect on the profitability of the firm.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of findings

The study utilized various techniques in an attempt to diagnose the properties of Accounts receivables and cash management as a variable. The findings descriptive statistic results showed that the Accounts receivables and cash management were not normally distributed. The four unit root statistics showed that the study variables had no unit root thus it was stationary. The unit root test was important in order to establish the appropriate regression technique method for regression analysis. The study revealed that the variable was stationary. The study also conducted correlation analysis between Accounts receivables and each of the other independent variables.

5.2 Conclusion

Accounts receivables variable was found to have a positive and statistically significant effect on financial performance in Kenya. The study, thus concluded that Accounts receivables is an important variable in the determination of financial performance manufacturing firms in Kenya. The implication was that when the Accounts receivables, the firm amassed more resources to continue with its operations and consequently realized increases in financial performance. Cash management variable was found to have a positive and statistically significant effect on financial performance in Kenya. The study, thus concluded that Cash management is an important variable in the determination of financial performance manufacturing firms in Kenya. The implication was that for Cash management, the firm amassed more resources to continue with its operations and consequently realized increases in financial performance.

5.3 Recommendation

This research brings to light the effects of working capital management on financial performance of private manufacturing firms in Kenya. From the results, the study recommends Inventory and Financial managers of

manufacturing firms utilize the findings of this research in designing working capital management reform models. The study recommends that the Board of Directors and Financial managers come up with ideal credit policies so as to minimize the risk of bad debts. Ideal credit policies should enhance that the firms are able to collect debts from their debtors and still maintain a good working relationship with them. Taking into account that this study found that there is a positive and statistically significant effect on financial performance of manufacturing firms in Kenya, firms should come up with policies that encourages debtors to pay their debts in the shortest time so that the firms can quickly reinvest the cash.

5.4 Area for further research

This research was not able to identify all the possible variables with explanation power on financial performance of manufacturing firms in Kenya. The study was only able to explain about R-squared 0.584223 or 58.4223% and Adjusted R-squared 0.423277 or 42.3277% of the variations on financial performance of manufacturing firms in Kenya. The study thus recommends that future research should consider other factors that may affect the financial performance of manufacturing firms in Kenya.

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