EFFECTS OF WORKING CAPITAL ON FIRM'S VALUE AMONG MANUFACTURING FIRMS LISTED IN THE NAIROBI SECURITIES EXCHANGE

BY

ANGELICA NDUNGU

A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF SCIENCE FINANCE, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

DECEMBER 2020

DECLARATION

I declare that this research project is my original work and has never been presented to any other University for assessment or award of degree.

Signed…………………………………   Date……………………………

ANGELICA NDUNGU

D63/89221/2016

This research project has been submitted with my approval as University Supervisor.

Signature……………………………………   Date December 8, 2020………………………

Dr. Winnie Nyamute,

Senior Lecturer, Department of Finance and Accounting,

School of Business, University of Nairobi

ACKNOWLEDGEMENT

I give glory to Almighty God for giving me energy and time to undertake this course. I am indebted to my supervisor Dr. Winnie Nyamute and My Moderator Dr. Angela Kithinji for the great guidance and support throughout this project.

Special thanks go to my two children Adrian and Alyssa who are always my source of motivation.

I also wish to acknowledge my fellow students Paula Mukolwe and Leah Njoroge who always encouraged me during the research project.

My appreciation goes to my employer Communications Authority of Kenya for sponsoring me to undertake this course and allowing me enough time to study and undertake this research project. I thank you all and my God bless you.

DEDICATION

I dedicate this research to my two lovely children Adrian and Alyssa who always remained my source of motivation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ACP	Account Collection Period
AIP	Aggressive Investment Policy
APP	Account Payment Period
ASEAN	Association of Southeast Asian Nations
CCC	Cash Conversion Cycle
GDP	Gross Domestic Product
ICMD	Indonesian Capital Market Directory
ICP	Inventory Conversion Period
IOS	Investment Opportunity Set
NPV	Net present value
OLS	Ordinary Least Square
PBV	Price to Book Value

ABSTRACT

This study explored working capital management effects on value of organizations in the manufacturing and allied category. The stakeholder theory and the Cash Conversion Cycle Theory were the theoretical underpinnings of this research using a descriptive cross-sectional study. The target population and sample was the nine firms in the NSE. Checking for normality, multicollinearity, and heteroscestdastcicty were the diagnostic tests conducted before doing the inferential statistics. The correlation findings showed that there were negative and insignificant correlations between accounts receivable days and accounts payables days and firm value whilst a positive and significant correlation between firms' value was observed. The model was found to explain 35.9 % of change in firm value and this was significant. Inventory days had negative and statistically significant impact on firm value whilst account receivable days, and account payable days had positive and insignificant effects on value of a company. The study recommends that managers of manufacturing companies should aim to store less amounts of inventory so as to have low costs of warehousing, insurance, and security costs that usually arise with increasing inventory and allocation of the company's funding so that the company faces high interest expenses. The study recommends that manufacturing firms should strive to reduce the amount of inventory so as to reduce costs because a longer duration of inventory days also increase the costs and would require more funding from the company to meet these costs and this can reduce the value for the firms. There is need for further research on WCM components effects on firm value among small and medium manufacturing firms and other larger firms that are not listed on the NSE. The study further suggests for future research to consider using integrating secondary and primary data to gain more insight on the influence of WCM factors on value of companies.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The concept of working capital management (WCM) is a trade-off between liquidity risks and profitability and thus has an influence on market value of an organization. WCM is a critical part of business finance and has an important role to play in sustainability of an organization and in creating value for the firm's shareholders (Vijayakumaran, 2019). Corporate finance experts see WCM as a significant asset to the firm value as it has major role to play in determining the risk, liquidity, and profitability of the organization and also the overall objective of the value of a firm.

Firms aim to have an upper level of working capital that can maximize wealth of a company (Bandara, 2015). A well created and executed WCM is anticipated to give positive results in company value. WCM has a significance effect on probability and liquidity of an organisation. Therefore, financial managers around the globe have been investigating for approaches in which to achieve efficient WCM so as to maximize value and their profits. The company value cannot be exploited in the long term unless it is able to survive the short term (Mitau, 2013).

The component of working capital has a varied effect on value of an organization and the managers must be attentive in creating working capital optimum. According to Tauringana and Afrifa (2013), managers must select the existing investment levels of each part of working capital to make sure of the smooth running of the day-to-day operations. The study adopts the cash conversion cycle theory which has been widely adopted in studying working capital management which is the period a firm is expected to transform its supply contributions to cash. Thereby this theory was adopted as it defined these periods into accounts receivable days, inventory days, and accounts payables days. Firm value is the response variables and is described as the ability of the company to generate value for different stakeholders associated with the firm that include suppliers, shareholders, customers, and staff. The different parties to whom the firm must create value are known as stakeholders and thus the stakeholder theory was included into the study's theoretical framework.

1.1.1 Working Capital Management

WCM is the present assets investment and present liabilities which can be transformed to liquid assets in less than a year and is thus important for organisation's daily activities (Kesimli & Gunay, 2011). WCM involves creating and a balanced level of present liabilities and present assets needed by the organization. Management of liabilities and short-term assets requires an in-depth inquiry as it has an important part to decide the profitability of the organisation, organisation risk and also its value (Bandara, 2015). WCM can competently generate financial value for an organization where the effect of financial value is to grow the value and company performance. The gross working capital is the one of the parts of WCM and is the organisation's asset in networking wealth and current assets which is also the variance amongst present liabilities and current assets (Pandey, 2011).

There are other proxies that have been used to measure WCM in past empirical studies. For example, Bandara (2015) adopted Working Capital Financing Policy and Working Capital Investment Policy to measure WCM. Mitau's (2013) research identified inventory management, cash management, accounts payables management, and accounts receivables management as variables to measure WCM. In their study, Ademola and Kemisola (2014) used aggressive investment policy, cash conversion cycle, account payment period, inventory conversion period, and account collection period as indicators for WCM. Makori and Jagongo (2013) adopted inventory conversion period, cash conversion cycle, and average collection period, and average payment period,

Ademola and Kemisola (2014) used the relative solvency ratio, cash ratio, cash conversion cycle, net trade cycle, and current ratio. Among these, cash ratio, current ratio, and quick ratio are referred to as conventional proxies of working capital. Others are referred to as dynamic

measures of working capital and include CCC and net trade cycle. CCC remains an important measure of liquidity in comparison to current ratio that has an impact on profitability. Cumbie and Donnell (2017) used accounts payable, inventory, and as accounts receivable.

1.1.2 Firm Value

According to Mariana, Andari, Susiani, and Saudi (2019), the firm value or also called the company's market value is the price paid by prospective buyers of the company. Company value refers to the current value of the anticipated upcoming movements reduced at the rate of return needed by shareholders (Bandara, 2015). A company's value is the observation of an investor towards the organisation that is linked to the process of stock. The major objective is to increase firm value of firm wealth. Making the most of firm value also makes the most of the shareholders wealth as the most important goal of the firm. Company value is shown in stock prices that are increasing and steady. Higher stock prices make organisations get value higher and the effect of this is market confidence on the existing performance of the firm and its future outlook which is significant in investment negotiations (Moeljadi, 2014).

Organisation value can also be known from the earnings and its sales (Mariana et al., 2019). There are several parameters that have been utilized to measure organisational value. Brigham's (1999) study adopted the market value toward performance of the firm as an indicator for market confidence on a company's intrinsic value. This value is found by market devaluation revealed by stock price under book value and market appreciation to stock prices above the book value. Tobin's Q is a ratio of market to book value which is calculated from the ratio of the market price of a firm's equity plus debt that is divided by the corporate assets value.

The Price to Book Value (PBV) is another approach that can be used to measure organisational value. The PBV is used by investors to deliberate the ration of capital markets such as PBV to identify which stock prices are too high(overvalued), reasonable, or tool low (undervalued). The Market-to-book ratio has also been used to measure firm value and is arrived at by dividing the book value of equity and a firm's stock market value (Sabrin, Sarita, Takdir, & Sujono, 2016). The success of an organization that has created thus value gives hope to shareholders in the context of higher profits (Mariana et al., 2019).

1.1.3 Working Capital Management and Firm Value

There are several studies that have established WCM had positive impact on value of a company. These studies include Ademola and Kemisola (2014) study found evidence that WCM had positive effect beverages and food manufacturing companies' market value. Vijayakumaran (2019) found that WCM had an effect on value of organizations. In their analysis of WCM components on firm value, Cumbie and Donnell (2017) found positive evidence showing that the three models of WCM used had a statistically significant relationship on firm value. Negative association amongst WCM and company value has also been found in the literature. These include Sudarsi's (2017) investigation on WCM effects on firm value in Indonesian manufacturing sector which established a negative impact on a value of companies.

Arachchi, Perera, and Vijayakumaran (2017) investigation found that WCM measured by CCC had a negative relation to firm value. Ogundipe Idowu, and Ogundipe (2012) did an examination on WCM impact on firm value in Nigeria and found that there existed negative and link amongst WCM and firm value. Nha and Loan (2015) examined the association

between firm value and WCM and found negative relationship evidence for Vietnamese firms. Chamaazi (2017) assessed WCM and economic value of companies and established a negative link between WCM and economic value.

1.1.4 Manufacturing Sector in Kenya

In 2016, Kenya's manufacturing sector grew 3.2 % in 2014 and later to 3.5 % in 2015 and contributed 10.3 % of gross domestic product (GDP). However, the economy has been growing at a faster rate than the manufacturing industry as the economy grew by 5.6 % in 2015 which suggests that the contribution of the manufacturing sector to the nations GDP has reduced significantly over time. This can be distinguished as an era of deindustrialization where industry and manufacturing are comparatively under-developed (Were, 2016). The manufacturing and allied sector contribution to GDP has been stationary with small increases in the past thirty years with an average of 10 % from 1964-1973 and a slight increase to 13.6 % from 1990-2007 and an average of less than 10 % in the past few years (Mutua & Atheru, 2020).

Majority of the allied and manufacturing companies listed in the Nairobi Securities Exchange (NSE) continue to show their net profits declining. The Kenya Industrial Transformation Programme (KITP), Kenya's Vision 2030, and the "Big Four" agenda are some of the government's plans for the manufacturing sector targeted 2022 growth along with increasing the sector's GDP contribution to 15 % from the current 8.4 % (Kenya Association of Manufacturers [KAM], 2018). In the NSE, the manufacturing and allied category of firms consists of nine manufacturing firms.

1.2 Research Problem

In theory, WCM has a mixed impact of company value of organizations and for shareholders. The evidence suggests that there have been mixed impacts of WCM on firm value. This means that WCM is an important variable for top management and mangers in an organisation in their pursuit of creating wealth for firms by accumulating the company value. The efficiency of working capital is critical more so for construction and manufacturing companies as a major component of their assets are current assets (Horne & Wachowicz, 2000).

Most of the studies have been done in the global context and these research (Ademola & Kemisola, 2014; Vijayakumaran, 2019; Cumbie & Donnell, 2017) have found positive impact of WCM and firm value whilst other studies (Arachchi et al., 2017; Ogundipe et al., 2012; Nha & Loan, 2015; Chamaazi, 2017) established negative relationship between these variables. Locally, Waweru (2011) explored WCM and firm value in the NSE and established an association. Wembe (2014) established a positive relationship between then variables. There is evidence of research on WCM and the firm in Kenya.

However, these studies investigated association amongst firm profitability and WCM (Makori & Jagongo, 2014; Too, Kubasu, & Langat, 2016) and firm performance (Mwangi, Muathe, & Kosimbei, 2014; Nyamweno & Olweny, 2015; Wembe, 2014), with only one study estimating the effects on company value (Waweru, 2011) research on WCM and company value. There is less evidence of studies focusing on WCM and firm value a research question that this study aims to answer.

1.3 Research Objective

This research examined effects of WCM on firm value among manufacturing firms listed in the NSE 2015 – 2019.

1.4 Value of the Study

This consequence of the study is it provides information to the investigation on the link amid WCM and firm value. There is less evidence of studies that have examined this relationship in the Kenyan context and thus the research will contribute to further research between these variables in the Kenyan context in different industries. This study is of significance to the policy and decision makers in the financial management, corporate governance, and top leadership in the manufacturing sector on WCM and firm value in an aim to support decision making on WCM in the corporate sector. The study is imperative to and also in decision making to improve the value for shareholders in manufacturing firms quoted in the NSE.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents available material on working capital and firm value from a local, global, and regional perspective. The determinants of firm value are also presented there in along with the theories guiding the study, and the study's conceptual framework.

2.2 Theoretical Framework

2.2.1 Cash Conversion Cycle Theory

Blinder and Maccini (2001) are credited with the cash conversion cycle theory which they described as the duration that it takes a firm to change its supply contributions into cash. The theory examines how effective a company is in handling its working capital. A firm gets inventory through credit which means that the firm has accounts payable. Firms also sell their products on credit, which can result to accounts receivable. This means that cash is not used in the transactions up until the firm gathers accounts receivable or pays the accounts payable. Hence, CCC estimates the duration between cash recovery and cash outlay (Siddiquee, Khan & Shaem Mahmud, 2009).

The shorter this cycle is, the fewer durations when capital is held in the operations of business and hence the healthier for the firm's objectives (Wang, 2002). Supporters of the CCC contend that shorter cycle permits businesses to acquire cash fast and this is used for debt repayment or extra acquisitions. Thus, it is every business aim to cut the cash

conversion cycle by making fast expenses from clientele and slows the costs to dealers. The CCC can also be negative, for example, if a firm has a position in the market that is strong, it can create terms of purchase to suppliers and thus delay its payments (Brennan et al., 2003).

The cash conversion cycle has been criticized for not yet being fully studied. The criticism comes from the fact that much of the literature on CCC is focused on effects of the theory on company profitability. Several past studies (Shin & Soenen, 1998; Deloof, 2003) show support that the profitability of an organization is reversely related to its CCC. Despite this limitation, the theory has been used in studies (Waweru, 2011; Yator, 2018) that have focused on working capital management as the independent variable in their study.

2.2.2 Stakeholder Theory

Dr. F. Edward Freeman is credited with the Stakeholder Theory and has been successful applied in a myriad of disciplines that include finance, corporate strategy, management, business ethics, marketing, and accounting, (Freeman, 1984). The major assumption of the stakeholder theory is that organisations create value by synthesizing and aligning the interests of stakeholders engaged in an organization.

Stakeholder theory argues that organizations have value for other actors as well. By purchasing products, organisations have value for their suppliers, and they provide value for their staff by paying wages. This suggests that the creation of value is a multidirectional activity and not a directional activity (Kraaijenbrink & Spender, 2011). According to stakeholder theory, organizations must be steered not only for shareholders but also for stakeholders (Harrison, Bosse, & Phillips, 2010).

The stakeholder theory has been criticized for not yet living up its promise as a fruitful theory of the firm. The open idea of value creation, stakeholder theory is not able to make choices on which stakeholders to exclude and which to include when making organisation decisions However, the theory has been adopted in studies of WCM and creating value for a firm. The theory is relevant for this study as companies aim to create value for shareholders and all other entities that they engage with in their business. These include suppliers, consumers, and also their employees.

2.3 Determinants of Firm Value

2.3.1 Firm Specific Determinants

Gharaibeh and Qader (2017) found statistical evidence that growth opportunities, solvency of the firm, profitability, and market capitalization had statistically significant relationships with firm value. Inspected the impression of operating costs, earnings, gearing ratio, dividend payout ratio and cost of capital on firm value, Kamunde (2011) established that there existed an adverse association amongst firm value, gearing ratio, and dividend payout. Ramadan (2016) researched firm value and firm ratios and found evidence of a significant connection between firm size and age, sales revenue, earning per share, operating cost, pay-out ratio, net margin, book value, dividend per share, and capital expenditure.

2.3.2 Environment Specific Determinants

Njagi (2017) investigated the association between firm value, firm's efficiency, macroeconomic environment, and between capital structures of companies listed in the NSE and established that growth in GDP, inflation, and interest rates influenced firm value. Šimáková (2017) examined the exchange rates effects on firm value and the estimation

results revealed that for the whole period, there was a negative connection among exchange rate and companies' stock value. Hsan, Rashid, and Naz (2018) researched on the changes in exchange rates on firm value of Pakistani firms and found that exchange rate volatility had negative effects on company value. Han's (2012) study focused on the association amongst exchange rate and firm value sensitivity among Taiwanese firms and found that company value was indeed affected by volatility in exchange rates.

2.4 Empirical Literature

Cumbie and Donnellan (2017) researched working capital components on firm value among Firms in the United States. The sample consisted of hundred and forty companies from the Russell 2000 index from which a sample of manufacturing firms, retail firms, services industry, and the wholesale trade industry were recruited into the sample. A regression analysis was conducted which revealed that there existed positive connection amongst WCM components and firm value.

Sudiyatno, Puspitasari, and Sudarsi (2017) examined the connection among firm performance, firm value, and working capital policy among in manufacturing organizations in Indonesia. The findings indicated that return on asset had a negative impact on organization value. The study does not measure the straight association amongst working capital variables and value of organizations which is a research gap that this study will fill.

Arachchi, Perera, and Vijayakumaran, (2017) examined effects of WCM on value of an organization from a sample of forty-four firms in Sri Lanka in a four-year period from 2011-

2015. Accounts payables days, inventory days, and accounts receivable days were the independent variables and whilst Tobin's Q was the response variable. Sales growth, firm leverage, and firm size were measured as control variables. The findings indicated that CCC had a negative relationship to firm value.

Nurein and Din (2017) conducted an investigation on the mediating role of innovativeness of the firm on the effect of WCM on value of an organization among four hundred firms that are innovative and non-innovative quoted in the Bursa Malaysia from 2006-2015. It was observed that a better WCM for innovative firms than non-innovative firms as they applied their innovative capacities to enhancing their working capital presentation.

Ademola and Kemisola (2014) investigated WCM impact on market value of companies in Nigeria using aggressive Investment Policy, Cash Conversion Cycle, Account Payment Period, Inventory Conversion Period, and Account Collection Period as explanatory variables and Tobin's Q as the response variable. The results revealed WCM indicators positive significant effects on company value included in the sample.

Moussa (2014) investigated WCM influence on the value and performance of industrial firms from 2000-2010. The study adopted two empirical models in which one of the models consisted of the CCC as a proxy for WCM. It was found that performance of the firm was positively linked with the cash conversion cycle length. The second model showed a positive and significant connection between CCC and company value of the firm suggesting that investors preferred firms with longer periods of CCC.

Locally, Waweru (2011) examined the association between value of firms and WCM of 22 companied listed in the NSE from 2003-2009. The findings showed a link amongst firm value and WCM. Wembe (2014) assessed WCM effects on firm performance of companies operating in the Kenya Ports Authority and found that management of working capital can contribute to excess in the Net present value (NPV) of the company's cash flows and thus an increase to its shareholder value.

## 2.5 Summary of the Literature Review

There is a plethora of studies that have explored the connection amongst WCM and company value firms from a global context (Cumbie & Donnellan, 2017; Sudiyatno et al., 2017) and a regional context (Ademola & Kemisola, 2014; Moussa, 2014). Locally, there is paucity of studies (Waweru, 2011; Wembe, 2014) that have examined the relationship. The studies that have explored this relationship were not focused on the manufacturing sector which this study aims to do given the importance the sector has to the economic development of the country.
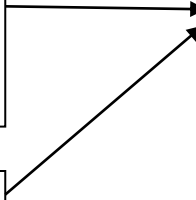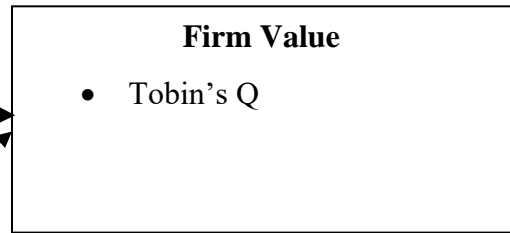
2.6 Conceptual Framework

The WCM indicators are presented in the left side of the page with firm value indicators shown in the right hand side of Figure 2.1. The control variable for the study was firm size.
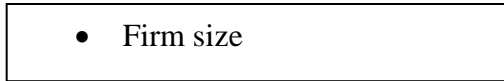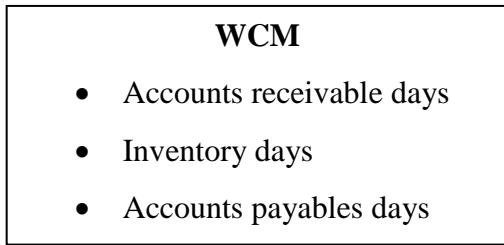
Independent Variables   **Dependent Variable**

Control Variable

Figure 2.1: Conceptual Model

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents, justifies, the selected research techniques that are adopted for this study. These include the study's research design, population, sample, data collection methods, and data analysis.

3.2 Research Design

A descriptive research approach was adopted. The descriptive research approach can be distinguished as either cross-sectional or longitudinal where data is collected and analysed during a specific time period in the former design whilst data is collected over a period of time in the latter design. The descriptive cross-sectional study design was used as the data was gathered and analysed once during a specific time duration.

3.3 Population

A population means the number of elements or units that the findings of the study can be generalized. The nine companies in the manufacturing and allied sector of Nairobi Securities Exchange (NSE) made the target population as shown in Appendix 1.

3.4 Data Collection

Secondary sources were used in this research was information being gathered from the annual reports on the sampled organizations which are readily available from The Internet. The researcher created a data collection sheet that showed the variable information for each of the firms which was used in the analysis of data. This data was quantitative in nature and

thus analysed using statistical techniques. Table 3.1 presented the variables description, the measurements that were used to measure the variables and the source of citation from which the variable measurements was adapted from.

Table 3.1: Description of Variables

Variable	Measurement	Source
Accounts receivable days	(Accounts Receivable / Revenue) x Number of Days In Year	Cumbie & Donnellan (2017)
Inventory days	(Ending inventory/cost of goods sold for the period) x Number of Days In Year	Cumbie & Donnellan (2017)
Accounts payables days	(Accounts Payable / Cost of Goods Sold) x Number of Days In Year	Arachchi, Perera, & Vijayakumaran (2017)
Tobin's Q	Market value of a company divided by its assets' replacement cost	Ademola & Kemisola (2014)
Firm Size	Natural log of total assets	Ramadan (2016)

3.6 Data Analysis

3.6.1 Diagnostic Tests

Diagnostics are techniques of analysis that are aimed to identify whether there are unfavourable cases such as lack of heterogeneity of variance and models which can be found in data (Eyduran, Ozdemir, & Alarslan, 2005). One of the tests was to check for normality. The study used the Kolmogorov-Smirnov (K-S) test and the K-S and Shapiro-Wilk tests as they are the most widely used methods to check for normality and this was used in this study. The study also checked for multicollinearity in the data. Multicollinearity is present when the

independent variables of included in a regression model have high correlations between them.

3.6.2 Analytical Model

The study's objective was to explore the connection amongst WCM and company value. Multiple regression was adopted to determine the effect of WCM components on Tobin's Q represented firm value. The proposed analytical model was thus;

$$\text{Tobin's Q} = \beta_0 + \beta_1 ARD_t + \beta_2 ID_{t} + \beta_3 APD_t + \beta_4 ER_t + \mu_t$$

Where;

Tobin's Q refers to firm value

$ARDt_t$ is the Accounts receivable days

ID_t refers to Inventory days

APD_t represents the accounts payables days

ER_t Exchange rate

3.6.3 Tests of Significance

Tests of significance are a formal technique which is used to compare observed data with a hypothesis which is the object of assessment. Tests of significance are designed to create an objective measure to make decisions about the validity of the generalization (Parkhurst, 2001). This study used the *p* value as the test of significance and was measured at the 95 % confidence level.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter is about the analysis of data and its interpretation. The results are presented in tables and supported by an interpretation. In terms of content, the chapter has sub-sections of diagnostics, descriptives, correlation, and regression analysis. Discussion of findings is the last sub-section of the chapter where findings are compared with previous studies.

4.2 Diagnostics

The diagnostic test conducted before embarking on the data analysis included checking for normality, multicollinearity, and heteroscedasticity which are presented in this section of the chapter.

4.2.1 Normality

Table 4.1 indicates the significance levels show that the values were larger than 0.05 which means that we discard the null hypothesis that there is no normal distribution and thus conclude that the data meets a normal distribution.

Table 4.1: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Tobin's Q	.226	45	.000	.876	45	.062
Accounts receivable days	162	45	.055	.840	45	.060
Inventory days	.141	45	.024	.953	45	.066
Accounts payables days	.226	45	.000	.772	45	.058

a. Lilliefors Significance Correction

4.2.2 Multicollinearity

According to Dupuis and Victoria-Feser (2013), the most used approach of identifying multicollinearity in the data is the use of variance inflation factors (VIF) where the rule of thumb is to find VIF values that are less than 5 or 10. The VIF values for the independent variables which indicate that the values are less than 5 which lead to the conclusion that there exists no collinearity in the data as shown in Table 4.2.

Table 4.2: Collinearity Statistics

Independent Variables	Tolerance	VIF
Accounts receivable days	0.718	1.392
Inventory days	0.783	1.277
Accounts payables days	0.843	1.187

4.2.3 Heteroscedasticity

The Breusch–Pagan test is a chi-squared test and is interpreted a p value of less than 0.05 means that the hypothesis of homoscedasticity is disallowed and heteroscedasticity is presumed. Table 4.3 shows that the p-value is less than 0.05 ($p = 0.045$).

Table 4.3: Breusch-Pagan Test Statistics

Heteroscedasticity tests	LM	Sig
BP	1.663	0.045

4.3 Descriptives

The descriptives show that the highest account receivable days were 294 days and the least days were 27 days. In regard to inventory days, the least inventory days observed was 7 days and the highest was 173 days. The lowest accounts payable days observed were 44 days and

the highest was 785 days. In terms of Tobin's Q, the lowest value for this variable was 10 and the highest score was 109.

The findings show that the mean days for account receivable days were 92 days with a standard deviation of 59.09628. The mean inventory days were 67 and had a standard deviation of 36.36525. The findings show that 186 days was the average period for manufacturing firm's account payable days and supported by a standard deviation of 139.30289. The mean score average for Tobin's Q for the sampled firms was 44 and supported by a standard deviation of 27.05466.

Table 4.4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Accounts receivable days	45	27	294	92	59.09628
Inventory days	45	7	173	67	36.36525
Accounts payables days	45	44	785	186	139.30289
Tobin's Q	45	10	109	44	27.05466

4.6 Correlation Analysis

The analysis discovered a negative correlation between account receivable days ($r = -0.024$) and accounts payable days ($r = -0.245$) and this was insignificant at the 5 % Alpha level. A negative correlation means that an increase in either variable resulted in a decrease on the other variable with the same magnitude. A positive and statistically significant correlation was observed between inventory days ($r = 0.149$) and firm value at the 5 % Alpha level as shown in Table 4.5.

Table 4.5: Correlation Coefficients

	Accounts receivable days	Inventory days	Accounts payables days
Accounts receivable days	1		
Inventory days	-.413**	1	
	0.005		
Accounts payables days	.309*	0.038	1
	0.039	0.806	
Tobin's Q	-0.024	0.149	-0.245
	0.877	0.329	0.105
	45	45	45

4.7 Regression Analysis

The model summary results indicate that the model explained 35.9 % of change in the dependent variable. This means that components of working capital management explained 35.9 % of change in firm value as shown in Table 4.6.

Table 4.6: Model Summary [a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599[a]	0.359	0.295	22.71353

Table 4.7 show that the significance level was less than 0.05 (p value = 0.001) which indicates that the model is statistically significant in explaining firm value and this was not by chance.

Table 4.7: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11569.821	4	2892.455	5.607	.001[b]
	Residual	20636.179	40	515.904		
	Total	32206	44			

In establishing the effects and direction of the independent variables on firm value, Table 4.8 shows an increase in accounts receivable days resulted in a 0.051 increase in value of the company but this was insignificant as the p value was bigger than 0.05 (p = 0.457). An

increase in inventory days would yield a 0.230 decrease in value of the company and this was significant at 5 % Alpha level. An increase in account payable days resulted in a 0.040 increase in value of the company and this was insignificant at the 5 % alpha level. The regression model is therefore presented as:

$$\text{Tobin's Q} = \mathbf{24.111} + \mathbf{0.051}\text{ Accounts receivable days} + \mathbf{-0.230}\text{ Inventory days} + \mathbf{0.040}\text{ Accounts payables days} + \boldsymbol{\mu_t}$$

Table 4.8: Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	24.111	11.794		2.044	0.048
Accounts receivable days	0.051	0.068	0.112	0.751	0.457
Inventory days	-0.230	0.106	0.309	2.157	0.037
Accounts payables days	0.040	0.027	-0.203	-1.476	0.148

4.9 Discussion of Research Findings

WCM was proxied by accounts receivable days, inventory days, accounts payables days whilst Tobin's Q was representative of company value. The findings showed there existed a positive and insignificant relationship between value of an organization and accounts receivable days and accounts payables days. These findings are corroborating those of Sianipar and Prijadi (2018) that found days of account payable and account receivable had an insignificant positive relation to Tobin's Q.

These findings are in disharmony with earlier studies that found a positive effect of days of account payable and account receivable on value of a company. This include Cumbie and

Donnellan's (2017) observations that accounts payable days and accounts receivable days outstanding had a positive connection between working capital components and firm value. Other studies that the findings disagree with are Moussa (2014) observation of positive and significant connection between CCC and company value suggesting that investors preferred firms with longer periods of CCC. García-Teruel and Martínez-Solano (2007) discovered that supervisors created value by lessening their ACP from a sample of SMEs in Japan.

The relationship amongst inventory days and firm value, the outcome indicates that there existed a negative and significant effect of inventory days on value of the firm. An increase in inventory days reduces company value. This finding corroborates that of Arachchi et al. (2017) that exhibited a negative and significant relationship with firm value. According to Sianipar and Prijadi (2018), a company storing large amounts of inventory can increase the cost of warehousing, insurance, and security costs that usually arise with increasing inventory and allocation of the company's funding so that the company faces high interest expenses. In terms of theory, the findings support the arguments of the CCC theory that managers ought to struggle to achieve shorter conversion cycle days to increase value for the firm.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter comprises of the summary of findings, the conclusions of the study, recommendations of the study, limitations of the study, and suggestions for future research.

5.2 Summary of Findings

The study aimed to determine the relationship amongst WCM and listed manufacturing companies' value. These WCM indices were accounts receivable days, inventory days, accounts payables days. The descriptive summaries show that the highest account receivable days were 294 days and the least days were 27 days. In regard to inventory days, the least inventory days observed was 7 days and the highest was 173 days. The lowest accounts payable days observed were 44 days and the highest was 785 days. In terms of Tobin's Q, the lowest value for this variable was 10 and the highest score was 109. The findings show that the mean days for account receivable days was 92 days, the mean inventory days were 67, and 186 days was the average period for manufacturing firm's account payable days. The mean score average for Tobin's Q for the sampled firms was 44.

The correlation showed that there were negative and insignificant correlations between accounts receivable days and accounts payables days and firm value whilst a positive and significant correlation between firms' value was observed. The model was found to explain 35.9 % of change in firm value and this was significant. Inventory days had a negative and statistically significant effect on value of companies.

5.3 Conclusion

The results revealed that inventory days had a negative and significant effect on listed manufacturing companies' value. An increase in inventory days would result in a reduced value of the company. The study therefore concludes that inventory days had an effect on listed manufacturing companies' value.

Accounts receivable days and accounts payables days had a positive and insignificant effect on firm value. The study therefore concludes that accounts receivable days and accounts payables days do not have an effect on value of manufacturing organisations. These findings support the idea that account receivables are an advantage to a firm because it involves giving a line of credit to their most trusted customers and this did not have any effect on value of a company. The study therefor concludes that extending a line of credit and giving goods to their most trusted and loyal customers did not have any effect on organizational value.

5.4 Recommendations

The study recommends that managers of manufacturing companies should aim to store less amounts of inventory so as to have low costs of warehousing, insurance, and security costs that usually arise with increasing inventory and allocation of the company's funding so that the company faces high interest expenses.

The study recommends that manufacturing firms should strive to reduce the amount of inventory so as to reduce costs because a longer duration of inventory days also increase the

costs and would require more funding from the company to meet these costs and this can reduce the value for the firms.

The study recommends that manufacturing firms should aim to reduce their account receivable days as having debts from their clients can have an effect on organizational value. The debts can become a liability for the firm and this will in the long run affect their value in the market.

5.5 Limitations of the Study

The study was limited to secondary methods of research which means that the data was not directly collected from personal experience of respondents who would give insight on the influence of WCM on firm value. The limitations of resources of time and restrictions posed by the COVID-19 influenced the selection of a small sample of listed firms in the NSE and thus a large sample of manufacturing samples was not included in the sample.

5.6 Suggestions for Further Research

There is need for further research on impact of WCM indicators on value of a company among SME manufacturing firms and other larger firms that are not listed. The study further suggests for future research to consider using integrating secondary and primary data to gain more insight on the influence of WCM factors on value of companies.

REFERENCES

Adiputra, G. I. (2017). The Effect of Internal and External Factors on the Value of a Firm through its Investment Opportunities on the Stock Exchange of the Southeast Asian Countries. *International Business Management, 10*(4), 370 – 376.

Sianipar, A., & Prijadi, R. Effect of Working Capital and Financial Aspects to Firm Value: an Empirical Study on Indonesian Listed Firms. *Advances in Economics, Business and Management Research, 89,* 388-393.

García-Teruel, P. J., & Martínez-Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance, 3*(2), 164-177.

Ademola, O. J., & Kemisola, O. C. (2014). The Effect of Working Capital Management on Market Value of Quoted Food and Beverages Manufacturing Firms in Nigeria. *International Journal of Business and Social Science, 8*(1), 168-177.

Arachchi, A. N. H., Perera, W., & Vijayakumaran, R. (2017). The Impact of Working Capital Management on Firm Value: Evidence from a Frontier Market. *Asian Journal of Finance & Accounting, 9*(2), 399-413.

Bandara, R. M. S. (2015). Impact of Working Capital Management Policy on Market Value Addition. *Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics, 1*(2), 354-373.

Blinder, S., & Maccini, J. (2001). The resurgence of inventory research: what have we learned. *Journal of Economic Survey, 5*(1), 291-328.

Brigham, E. F., & Houston, J. F. (2001). *Fundamentals of Financial Management.* (9th edn.). Fort Worth, TX: Harcourt College Publishers.

Chamaazi, Z. (2017). The Relation Between Cash Conversion Cycle and Economic Value Added in Companies Listed on Tehran's Stock Exchange, Iran. *European Journal of Economic and Financial Research, 2*(2), 92-112.

Cumbie, J. B., & Donnellan, J. (2017). The Impact of Working Capital Components on Firm Value in US Firms. *International Journal of Economics and Finance, 9*(8), 138-150.

Dupuis, D. J., & Victoria-Feser, M. (2013). Robust VIF regression with application to variable Selection in large data sets. *The Annals of Applied Statistics, 7,* 319-341.

Eyduran, E., Ozdemir, T., & Alarslan, E. (2005). Importance of Diagnostics in Multiple Regression Analysis. *Journal of Applied Sciences, 5,* 1792-1796.

Freeman, R. E. (1984). Strategic management: A stakeholder approach. Boston, MA: Pitman Publishing Inc.

Gharaibeh, A. M. O., & Qader, A. A. A. A. (2017). Factors influencing firm value as measured by the Tobin's Q: Empirical evidence from the Saudi stock exchange (TADAWUL). *International Journal of Applied Business and Economic Research, 15*(6), 333-358.

Han, L. (2012). Exchange Rate Effects on a Small Open Economy: Evidence from Taiwanese Firms. *The International Journal of Business and Finance Research, 6*(3), 1-12.

Harrison, J. S., Bosse, D. A., & Phillips, R. A. (2010). Managing for stakeholders, stakeholder utility functions and competitive advantage. *Strategic Management Journal, 31,* 58-74.

Horne, J. C., & Wachowicz J. M. (2000). *Fundamentals of Financial Management.* New York, NY: Prentice Hall Publishers.

Ihsan, H., Rashid, A., & Naz, A. (2018). Exchange Rate Exposure and Firm Value: An Assessment of Domestic versus Multinational Firms. *The Lahore Journal of Economics, 23*(1), 51–77.

Kamunde, J. N. (2011). *The determinants of firm value in the telecommunication sector in Kenya.* Unpublished research project. Nairobi. University of Nairobi.

Kenya Association of Manufacturers (2018). *Manufacturing in Kenya under the Big 4 Agenda; A Sector Deep Dive Report.* Nairobi: Kenya Association of Manufacturers.

Kesimli, I. G., & Gunay, S. G. (2011). The impact of the global economic crisis on working capital of real sector in Turkey. *Business and Economic Horizons, 4*(1), 52-69.

Kraaijenbrink, J., & Spender, J. C. (2011). Theories of the Firm and their Value Creation Assumptions. Annual International Conference of the Strategic Management Society, 6-9 November, Miami, United States.

Makori, D. M., & Jagongo, A. (2014). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms Listed on Nairobi

Securities Exchange, Kenya. *International Journal of Accounting and Taxation, 1*(1), 1-14.

Mariana, C., Andari, D., Susiani, R., & Saudi, M. H. M. (2019). Internal Factors and Firm Value: A Case Study of Indonesia Listed Companies. *Journal of Advanced Research in Dynamical & Control Systems, 11*(3), 412-416.

Mitau, M. S. (2013). *Working Capital Management and Its Effect on Firm's Profitability in Kenya: A Survey of Non-Financial Institutions Listed on the Nairobi Securities Exchange.* Unpublished research project. University of Nairobi. Nairobi. Kenya.

Moeljadi, N. (2014). Factors Affecting Firm Value: Theoretical Study on Public Manufacturing Firms in Indonesia. *South East Asia Journal of Contemporary Business, Economics and Law, 5*(2), 6-15.

Moussa, A. A. (2019). The impact of working capital management on firms' performance and value: evidence from Egypt. *Journal of Asset Management, 19*(4), 259–273.

Mutua L., M., & Atheru, G. K (2020). Capital Structure and Financial Performance of Companies listed under Manufacturing and Allied Sector at Nairobi Securities Exchange in Kenya. *Journal of Finance and Accounting, 4*(1), 24-38.

Mwangi, L. W., Muathe, S. M., & Kosimbei, G. (2014). Effects of Working Capital Management on Performance of Nonfinancial Companies Listed In NSE, Kenya. *European Journal of Business and Management, 6*(11), 195-205.

Nha, B. D., & Loan, N. T. (2015). *Working capital management* and *firm value*: *Evidence* from the *Vietnamese Stock Market*. Ton Duc Thang University. Vietnam.

Njagi, J. N. (2017). *Capital Structure, Macroeconomic Environment, Firm's Efficiency and Value of Companies Listed at the Nairobi Securities Exchange.* Unpublished PhD Thesis. University of Nairobi. Nairobi. Kenya.

Nurein, S., & Din, S. (2015). *Working Capital Management and Firm Value: The Role of Firm Innovativeness.* International Conference on Economics and Development 15-16 June 2017, Colombo Sri Lanka. pp. 7-24

Nyamweno, C. N., & Olweny, T. (2015). Effect of Working Capital Management on performance of Firms Listed at the Nairobi Securities Exchange. *Economics and Finance Review, 3*(11), 1-14.

Odhiambo, V. E. (2016). Role of Working Capital Management Practices on Financial Performance of Private Colleges in Nairobi County. *The strategic journal of business management & change, 3*(8), 128-143.

Ogundipe, S. E., Idowu, A., & Ogundipe, L. O. (2012). Working Capital Management, Firms' Performance and Market Valuation in Nigeria. *International Journal of Social and Human Sciences, 6, 143-*147.

Pandey, I. M. (2011) Working capital management. In: Pandey, I.M. (ed.) *Financial Management,* pp. 657–658. Vikas Publishinh House Pvt Ltd, New Dehli (2011)

Parkhurst, D. F. (2001). Statistical Significance Tests: Equivalence and Reverse Tests Should Reduce Misinterpretation. *BioScience, 51*(12), 1051-1057.

Post, J., Preston, L., & Sachs, S. (2002). *Redefining the Corporation: Stakeholder Management and Organizational Wealth.* Stanford, CA: Stanford University Press.

Ramadan, I. Z. (2016). Panel Data Approach of the Firm's Value Determinants: Evidence from the Jordanian Industrial Firms. *Modern Applied Science, 10*(5), 163-169.

Sabrin, S., Sarita, B., Takdir, D., & Sujono, S. (2016). The Effect of Profitability on Firm Value in Manufacturing Company at Indonesia Stock Exchange. *The International Journal of Engineering and Science, 5*(10), 81-89.

Salhin, A., Kyiu, A., Taheri, B., Porter, C., Valantasis-Kanellos, N. & König, C. (2016). "Chapter 9 Quantitative Data Gathering Methods and Techniques" In: Paterson, A., Leung, D., Jackson, W. (MacIntosh, R. & O & Gorman, K.D. (ed) . Oxford: Goodfellow Publishers

Siddiquee, M. Khan, N., Shaem, B., & Mahmud, T. (2009). Analyzing Working Capital Performance: evidence from Dhaka stock exchange. *The Strategic Journal of Business & Change Management, 2(3*), 1-5.

Šimáková, J. (2017). The Impact of Exchange Rate Movements on Firm Value in Visegrad Countries. *JOURNAL University of Agriculture and Silviculturae Mendelianae BRUNENSIS, 65*(6), 2105-2111.

Sudiyatno, B., Puspitasari, E., & Sudarsi, S. (2017). Working Capital, Firm Performance, and Firm Value: An Empirical Study in Manufacturing Industry on Indonesia Stock Exchange. *Economics World, 5*(5), 444-450.

Tauringana, V., & Afrifa, G. A., (2013). The relative importance of working-capital management and its components to SMEs' profitability. *Journal of Small Business and Enterprise Development, 20*(3), 453-469.

Too, S. K., Kubasu, A., & Langat, L. C (2016). *Effect of Working Capital Management Practices on a Firm's Profitability: A Case of Manufacturing Firms Listed in Nairobi Securities Exchange. International Journal of Economics, Commerce and Management, 5*(6), 701-736.

Vijayakumaran, R. (2019). Efficiency of Working Capital Management and Firm Value: Evidence from Chinese Listed Firms. *International Journal of Financial Research, 10*(6), 133-144.

Wang, Y. J. (2002). Liquidity Management, Operating Performance, and Corporate Value: Evidence from Japan and Taiwan. *Journal of Multinational Financial Management, 12,* 159-169.

Waweru, C. G. (2011). *The relationship between working capital Management and Value of Companies quoted at the NSE.* Unpublished research project. University of Nairobi. Nairobi. Kenya.

Wembe, M. A. (2014). Effects of Working Capital Management on the Performance of Firms in Kenya: A Case Study of Kenya Ports Authority. *International Journal of Science and Research, 4*(4), 1124-1136.

Were, A. (2016). *Manufacturing in Kenya: Features, Challenges and Opportunities: A scoping exercise.* Retrieved from https://set.odi.org/wp-content/uploads/2016/09/Manufacturing-in-Kenya-Anzetse-Were.pdf

Yator, P. K. (2018). *The Working Capital Management Practices and Financial Performance of Middle Level Colleges in Eldoret Town, Kenya.* Unpublished research project. Nairobi. University of Nairobi.

Vural, G., & Sökmen, A. G., & Cetenak, E. H. (2012). Effects of Working Capital Management on Firm's Performance: Evidence from Turkey. *International Journal of Economics and Financial Issues, 2*(4), 488-495.

APPENDICES

APPENDIX 1: DATA COLLECTION SHEET

Company	Year	Accounts receivable days	Inventory days	Accounts payables days	Tobin's Q
B.O.C Kenya Ltd	2015				
	2016				
	2017				
	2018				
	2019				
British American Tobacco Kenya Ltd	2015				
	2016				
	2017				
	2018				
	2019				
Mumias Sugar Co. Ltd	2015				
	2016				
	2017				
	2018				
	2019				
Kenya Orchards Ltd	2015				
	2016				
	2017				
	2018				
	2019				
Carbacid Investments Ltd	2015				
	2016				
	2017				
	2018				
	2019				
Unga Group Ltd	2015				
	2016				
	2017				
	2018				

	2019				
Flame Tree Group Holdings Ltd	2015				
	2016				
	2017				
	2018				
	2019				
East African Breweries Ltd	2015				
	2016				
	2017				
	2018				
	2019				
Eveready East Africa Ltd	2015				
	2016				
	2017				
	2018				
	2019				