WORKING CAPITAL MANAGEMENT PRACTICES AND PROFITABILITY OF MANUFACTURING COMPANIES LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA

BY

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DECLARATION

"I declare that this research proposal is my original work that it has never been submitted for award of any degree in any other University."

Sign…………………………… Date………………………………….

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I hereby confirm that this proposal was prepared and submitted to the University of Nairobi for examination by Phoebe Aloo under my supervision.

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DEDICATION

I dedicate this work to my family for bearing with me the many times I could not give them attention while studying. I appreciate the financial and moral support from my husband Benard Ooko and encouragement and prayers from my beloved daughters Beldine Shacole and Scyler Barlyvia. I am; because you all are. God bless you in a special way.

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Humanity progresses on collective acts of individuals.

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May the Almighty God bless you abundantly.

LIST OF ABBREVIATIONS AND ACRONYMS

ACP – Average Collection Period

APP – "Average Payment Period"

ASM – Annual Survey of Manufacturers

CA – "Current Assets"

CCC – "Cash Conversion Cycle"

CL – Current Liabilities

CMA – Capital Markets Authority

DR – Debt Ratio

FS – Firm Size

GDP – Gross Domestic Product

ISE – Islamabad Stock exchange

ITP – Inventory Turnover Period

KAM – Kenya Association of manufacturers

KSE – Karachi Stock Exchange

LTD – Limited

NSE – "Nairobi Securities Exchange"

ROI – "Return on Investment"

WCMA – "Working Capital Management Approach"

WCMP – Working Capital Management Practice

ABSTRACT

"Working capital management" is reasonable because majority of organizations, especially, manufacturing, have their current assets accounting to more than a half of the overall assets where the proportion could even be higher for a distribution company. A business organization's liquidity management is very important for every business regardless of its size. However, cash shortages will result when a firm does not essentially manage its liquidity accordingly experience issues paying its commitments when they fall due. Main goal of the current research was the examination of the relationship between a firm's profitability using return on assets as an indicator and the working capital of listed manufacturing firms in Kenya which was tested through use of elements of such as "inventory turnover period, cash conversion cycle, average payment period and average collection period." The foundation of the study was based on risk theory of profit as well as rent theory of profit. "The study employed descriptive research design" where the research's population of study was 8 listed manufacturing companies which were listed on "Nairobi Securities Exchange" for the period ranging from 2004 – 2018. Nevertheless, this research only focused on 7 firms which were found to have traded for the whole study period under investigation. The research gathered "secondary data from the consolidated annual reports and financial statements of the companies." Descriptive statistics, regressions and correlations were major methods used for analysis. The correlation estimations have found out that there existed noteworthy association between average payable period, firm size and debt ratio towards how the manufacturing firms had performed financially. On contrary, "inventory turnover period, average collection period and cash conversion cycle were found to have an insignificant association towards profitability of listed manufacturing." Regression findings indicated that only firm size and account payable period were significantly predicting financial performance of listed manufacturing, unlike "cash conversion cycle, average collection period, inventory turnover period and debt ratio." The study recommends that the manufacturing firms listed on Nairobi securities exchange should put more emphasis on managing their total assets invested and that it employs an optimal level of total assets that has good systems to properly manage in-order to improve performance.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Business set ups in which organizations operate has become so complex due to globalization. Corporate financial managers are therefore faced with so many decisions among which working capital management decision tops indispensables to the business since it has effects on profitability, efficiency and general financial health of a company (Kakozi 2017). Dong (2010) stated that an organization's profitability is dictated by its working capital management practices. Any organization that is concerned with dealing with competition and day to day organizational challenges has a responsibility of managing her working capital that eventually forms part of the financial decisions that any finance manager needs to undertake.

Working capital management (WCM) is reasonable because majority of organizations, especially, manufacturing, have their current assets accounting to more than a half of the overall assets where the proportion could even be higher "for a distribution company. Maintaining too few current assets may result into a firm incurring shortages and difficulties in maintaining smooth operations." However, too much level of current assets may make an organization realize a crappy return on investment (Horne & Wachowicz, 2000). A single reason would be due to the fact that the conversion of current assets being short-lived investment is a continuous process (Rao, 1989)

Filberk and Kruger, (2005) posits that for a firm to realize substantial working capital, it must balance risks and efficiency. With regard to current liabilities, an organization is

solely liable to pay these obligations on basis of time. Liquidness of the ongoing organization can rely on cash flows made through operations based on its assets, however, not basis on liquidity values of such assets (Soenen, 1993; Ejelly, 2004). Manufacturing sector directly influences the Kenyan overall economic growth rate by contributing to "the Gross Domestic Product (GDP)" being one of the pillars in the Government's big 4 agenda initiative. Every firm's objective is to maximize shareholders' wealth. This study will therefore discuss the various "working capital management practices and their impact on profitability of manufacturing companies listed at Nairobi Securities Exchange, Kenya."

1.1.1 Working Capital Management Practices

"Working capital of a company" is a company's total capital which is dedicated for short term operations (Remamoorthy, 1978). It is the balance of an organization's current assets and short-term obligations. WCM basically means management of the short-term financing and investments of an organization (Ross, Westerfield, & Jordan, 2010). Giman (2005) defines "working capital management as the process of regulating, adjusting, and controlling of the balance between the current assets and current liabilities for an organization to operate as usual and its fixed assets get appropriate servicing." According to (Lazaridis & Tryfonidis, 2006), properly managing WC involves applying the approach that would limit the risk and diversify the use of funds by limiting "investment in assets in the other side by properly planning and controlling current assets and short-term obligations."

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Afzar, (2008) stated that there are three approaches of working capital management, that is, conservative WCMA, aggressive WCMA and matching WCMA. Firms that employ a conservative approach finance their permanent assets and part of temporary assets using long-term financing. They place a bigger portion of capital in current assets and less in fixed assets; they are associated with lower levels of risks and returns. According to Afzar and Nazir (2009), a firm that uses an aggressive WCMA finances all its "current assets and some fixed assets with short-term credits." Such a firm places a greater portion of capital in fixed assets than in current assets; it is characterized with higher risks and returns. Moderate/Matching policy states that long-term capital should be utilized to finance permanent assets and short-term credits should be used to finance temporary assets that is, the nature of assets financed should match the maturity of the source of funds.

According to Brigham and Houston (2007), "working capital management practices entail developing working capital policies for routine business operations; they are the best ways to manage working capital components so as to maximize returns and ensure smooth operations in a firm." WCMP are concerned with the techniques used to optimize levels of working capital components; best ways of investing surplus funds, ensuring optimal inventory levels, how to take advantage of quantity and cash discounts, and how to accelerate the collection of receivables. According to Samiloglu and Demirgunes (2008), "a firm's profitability is expressed as a function of four core working capital management practices that dictate a firm's profitability and they include; Cash Conversion Cycle (CCC), Average Collection Period (ACP), Inventory Turnover Period (ITP) and Average Payment Period (APP)."

1.1.2 The Concept of Profitability

Kumar (2008) defined profitability as the potential and capability to earn and generate a return from day to day operations of a firm, institution or a company. Profitability is deemed as the capacity of any identifiable firm to generate a return from its resource use (Upton, 2009). Profitability measures the extent to which an organization benefits from its business undertakings and is concerned with the relationship between earnings in the form of revenues and expenditure.

Hansen and Mowen, 2005 discussed that the four useful profitability measures are; net income (NI) which is the difference between business expenses and operating costs from the total sales revenue, operating profit margin (OPM) which is the difference of the entire cost of stock and all the revenue from sales. The next measure is return on assets (ROA) which is the quotient of gross profit and total assets. On the other hand, ROA considers all the assets without considering their sources making it different with the other ratios and indicates profits of business organizations. The other measure is the return on investment (ROE) which is the ratio of net income and shareholders' equity.

1.1.3 Working Capital Management Practices and Profitability

Management of working capital is essential businesses' financial health of every size (Horne & Wachowitz, 2000). According to Wang (2002), a study to investigate firms in Japanese and Taiwanese revealed that the methods that business organizations use to manage working capital predict their profitability. This profitability increased when inventories are reduced and day's receivables are increased.

Soenen (1998) analyzed business organizations in the US using "Net Trading Cycle" as a tool of estimating "working capital management" and reported the same findings. The study revealed lack of association between the measurement tool and profitability of the organizations.

To optimize their cash flow companies normally manage their working capital cycle by selling their inventories quickly, collecting revenues from customers quickly, and paying their debts/bills gradually. Reducing the credit period offered to customers in this cycle will improve profitability. When customers pay quickly, there is enough cash to replenish inventory which would result into higher sales thereby improving the profitability.

Under assessment of working capital would lead to stunted growth, cash crisis, failed business commitments, production stoppage, lost profits whereas over assessment of working capital may lead to unnecessary inventory accumulations, reduced return on investment (ROI), poor cash management, uninformed credit terms, management inefficiency. Maintaining a steady state of the liquidity of a company therefore requires better yield on the present resources than the present liabilities. As indicated by Raheman and Nasr (2007) and Smith (1980), the major challenge in managing "working capital is to balance liquidity and profitability." Hence the cash should just be enough for working capital needs, not too little, not too much.

1.1.4 Manufacturing Companies Listed at NSE

Manufacturing is the transformation of raw material, substances and components into new or final products (ASMR 2006). Manufacturing is the fourth leading sector in the

Kenyan Economy accounting for 8.4% of the Kenya's Gross Domestic Product (GDP) (Business Intelligence, 2011). Manufacturing also provides employment and sustains livelihood of millions of the Kenyan population directly or indirectly.

This sector is regulated by the "Kenya Association of Manufacturers (KAM)". This is a constitutional body established in the year 1959 and has the mandate to promote trade, ensure companies produce goods and that services are up to standard and formulate and administers policies used by manufacturers in the country. This body also ensures that the cost of doing business in the country is low enough to attract local and foreign investors. This body further acts as a link between the manufacturing sector and the government and is involved in all the negotiations involving the government and the manufacturers (KAM Priority-Agenda 2019). Currently, there are a number of manufacturing companies in Kenya in different product lines. However, "there are only nine listed manufacturing firms placed on the Nairobi Securities Exchange" (www.nse.co.ke).

1.2 Research problem

A business organization's liquidity management is very important for every business regardless of its size. Cash shortages will result when a firm does not essentially manage its liquidity accordingly experience issues paying its commitments when they fall due. "Working capital starvation has" commonly been viewed as a noteworthy course of business disappointment in both developing and developed nations (Rafuse 1996). Working capital administration is huge due with its impact on an association's gainfulness and chance, and thusly its worth (Smith 1980). Working capital administration is fundamental to all organizations however especially to little ones since

they don't approach long haul financing yet they should back the present resources. In any case, there is hazard return exchange off; in that the ideal level requires a harmony among benefit and dissolvability by limiting the all-out expense of liquidity and cost of illiquidity, the working capital administration being improving gainfulness and liquidity (Pandey 1997).

There have been researches done on the concepts under study. For instance, Nazir and Afza (2007) sought to establish the effects of working capital administration approaches on budgetary prosperity of companies Listed in Karachi Stock Exchange in Pakistan. Weinraub and Visscher (1998) inspected the strategies that US firms use to deal with their working capital from 10 different industry bunches for the period 1984-1993. Rehman (2006) separated the impacts of working capital organization on efficiency of 94 firms recorded at ISE in Pakistani. Awunyo, Akoto and Lawer (2013) discussed working capital organization and advantage of Ghanian recorded amassing firms inside five years.

Studies were led in Kenya to talk about the relationship of working capital administration and benefits on various settings. Ngaba (1990) studied this relationship on schools, Owele (2014) concentrated on Agricultural companies, Mwaniki (2012) discussed the deposit taking microfinance institutions, Kirui (2013) investigated the sugarcane out grower companies, and Kiptoo (2017) examined it on tea processing firms. Nelima (2012) and Mingori, (2013) investigated this relationship using all the listed firms in Kenyan NSE.

Despite the role that the manufacturing sector is playing to the Kenyan economy, the few studies that have been done exclusively on the association between working capital

management practices and profitability of Kenyan manufacturing companies employ several variables to determine the relationship but there still exists an ambiguity on the suitable variables that can act as a measure for this relationship between profitability and methods of managing working capital. The present research aimed at bridging the glaring gaps through carrying out a study based on the same between 2004 and 2018. The study therefore seeks to respond to the research question "What is the impact of working capital management practices on profitability of Kenyan Manufacturing Companies Listed at NSE?"

1.3 Objective of the study

To investigate the impact of "working capital management practices on the profitability of the manufacturing firms listed in the Nairobi Securities Exchange."

1.4 Value of the study

It is expected to equip managers from the manufacturing industry with information on what policy to employ "when it comes to working capital management so as to" achieve organizational objective of maximizing shareholders' wealth.

Scholars and researchers will use the study to identify how "working capital management" impacts a firm's productivity. The study will also add up to the existing literature in finance and open up potential areas for further research.

The Government will also be able to interpret roles of various "working capital management practices on performance of firms financially." This way, they will be able

to formulate effective working capital policies using these strategies to improve performance not only of the manufacturing sector but also of the firms in the other sectors of the economy.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This segment includes the breaking down the literature and identifying with the board of working capital and an association's productivity. It covers the hypothetical audit and observational writing on working capital administration practices and how they sway business gains. It likewise plots the applied structure and outline of the writing survey.

2.2 Theoretical Review

The study at hand was founded on the risk theory of profit and rent theory of profit. The theories do come to an agreement that the more the company invests in current assets the lesser the risk they are exposed to and the lower the profitability they are likely to obtain.

2.2.1 Risk Theory of Profit

It has been noted "that the riskier the industry the higher the profits rate." When an "entrepreneur takes the risk of the business, he is entitled to receive his reward in the form of profits as profits are commensurate with risks (Hawley, 1893)." However, there is no functional relationship between risk and profit. It is based on the entrepreneur's capability of risk avoidance but not on his ability to undertake risk. This theory disregards other factors attributed to profit and just concentrates on risks. From the previous studies it is evident that researchers used the accounting ratios.

As indicated by Hawley, benefit is a reward or payment for the presumption of threats by the business person. The more prominent the risks, the higher the benefits must be. It is

supposing that the arrival on riskier venture is at a similar level as that acquired from the sheltered speculation, at that point not a solitary business person will put his capital in a dangerous endeavor. Benefit is a reward for bearing dangers in a business. The advanced financial analysts accept that there is no uncertainty that benefits contain some compensation for chance taking in a business yet it isn't right to expect that benefits are in their totally because of the component of hazard.

The benefits can ascend because of better administration; better supervision or they might be because of monopolistic situation of the business person or might be because of sheer possibility. It is additionally called attention to that benefits are never in relation to the hazard embraced; it can happen that in an increasingly unsafe endeavor, the benefits might be low and high in a less hazardous undertaking. There are sure organizations where dangers can be pretty much precisely anticipated by measurable proof, for example, in protection, the business people who maintain these organizations gain benefits. This hypothesis neglects to disclose regarding the way in which businesses apply to generate profits upon insurance of risks.

2.2.2 Rent Theory of Profit

This theory is offered by Walker (1897). It states that profitability can be resolved simply just like the lease of a land. He further argued that as prevalent evaluation of land earns supplementary lease then the mediocre land evaluation, comparatively predominant entrepreneurs earn higher compared to the sub-par entrepreneurs. As much as land lease is estimated from no lease, similarly, benefits of the predominant business visionary are

determined from the peripheral business person. The aspect of profitability is excluded from the production expense; it can be an extra thing simply like the Ricardo's theory.

Marshal (1901) was of the opinion that there is a lot of distinction between the lease of land and benefits of an entrepreneur. Profit can't rise just because of the unrivaled capacity however there are such a large number of variables which are answerable for benefit. This hypothesis doesn't illuminate the idea of benefit which is increasingly significant. It is additionally expressed that benefit is excluded from cost, in the event of land, there is no way of misfortune yet in the event of business person misfortune can likewise be endured.

2.3 Determinants of a company's Profitability

The determinants of a company's profitability vary from industry to industry. It is therefore very critical for every organization to analyze the most crucial factor that determines its profitability and try to address the same. These factors include: Working capital management, firm size, liquidity level, firm age, and capital structure.

Firm size can be measured by total assets and number of employees. According to Agiomirgianakis et al (2013), "the average cost of operating a small entity is more than the average cost of operating a big enterprise; therefore, the bigger the company, the higher the profitability and vice versa." Liquidity level tells us how a firm is performing. Raheman and Nasr (2007) clarifies that no limitations on liquidity of which a firm should maintain so as to experience profitability. According to Greuning and Bratanovic (2004), high liquidity reduces return on assets and hence low profitability while low liquidity

leads to insolvency by attracting other sources of deposits that happens to be very expensive.

Firm age refers to the years of a firm's existence. Autio (2005) posits that, the older the company is the more potential it has to accumulate information and resources and the more experienced it is. Such a company also has the capacity to access better and wider financing and is enjoys better reputation than a young company with no goodwill to boast of. Capital structure is the composition of an entity's capital in terms a blend of debt and equity; debt enables rapid expansion by allowing firms to leverage existing funds. According to Abor (2005), firms that highly depend on debt as their main financing option are more profitable.

2.4 Empirical Studies

Nazir and Afza (2007) analyzed the "impacts of working capital association approaches on budgetary execution using 208 firms Listed in Karachi Stock Exchange in Pakistan and expected that a negative relationship exists between financing courses of action, profitability and level of forcefulness on working capital hypothesis." They further explored the relative relationship between the conformist and ground-breaking working capital strategies and they found that the affiliations get negative benefit for the distant chance that they utilize a for a strong working capital course of action.

Weinraub and Visscher (1998) considered working capital administration strategies utilized by the US firms from 10 differing industry bunches for the period 1984-1993 quarterly. They contemplated the connection between these structures' preservationist and

forceful working capital administration approaches and presumed that each industry have a particular and altogether unique working capital administration additional time.

Another study was conducted by Rehman (2006) who set up the investigation of the influence of working capital relationship on advantage of 94 firms recorded at Islamabad Stock Exchange in Pakistani using distinctive working capital elements for a time of five years. He destroyed the "impact of working capital" affiliation factors on net working capital of these affiliations. He landed at a decision that there exists a strong and negative relationship among bit of leeway and working capital degrees of business organizations.

Lazaridis and Tryfonidis (2006) separated the "relationship between working capital administration and corporate benefit on 131 associations recorded on Anthen's Stock Exchange." The used a multi-year time span information from 2001-2004 and found a quantifiably colossal negative association among CCC and gainfulness of a business association. They researched this relationship however supplanting CCC with stock and records receivable, a negative relationship was found. A positive relationship was discovered when CCC was supplanted with records payable consequently they further presumed that more benefits can be made if organizations handle effectively their CCC keeping every part of CCC to an ideal level.

Deloof (2003) coordinated an examination on gigantic Belgian firms between the years 1992-1996 using association and backslide tests and assumed that there is an imperative negative association between an organization's gross working compensation and number of days bank liabilities, records of offers and stock. Samiloglu and Demirgunes, (2008) considered the association among benefit and working capital administration for a period

of 1998-2007 in Turkey. They demonstrated that stock turnover period, records of offers period and impact have an on a very basic level negative effect on an organization's gainfulness.

Awunyo, Akoto and Lawer (2013) conceptualized on "working capital administration" and gainfulness of 13 Ghanian recorded amassing firms for a long time between 2005-2009 using load up data procedure and landed at assurance that an on a very basic level negative relationship existed between records receivable days and benefit. They further contemplated that an organization's size, money turnover cycle, current resource turnover and current resource degree completely eagerly influence profitability. They proposed that overseers can make an impulse for their budgetary authorities by making motivations to decrease their records receivables to 30 days.

In Kenya, Owele (2014) focused on 7 Kenyan farming organizations recorded at NSE to "break down the association between working capital administration and business gain between the years 2009-2013." He showed a strong association between working capital administration and an organization's display. He further referenced that organizations that received traditionalist capital administration approach were more gainful than those progressing towards forceful working capital administration approach.

Nduati (2014) contemplated working capital administration exercises utilizing the Kenyan organizations recorded at NSE for a time of five years 2009-2013. He found a major negative connection between normal accumulation period and benefit. He likewise found a negative connection between stock turnover period and an association's gainfulness.

2.5 Summary of Literature and Research Gap

"Working capital management" decision is very vital to an organization since it has effects on the profitability, efficiency and general financial health of a company. Dong (2010) stated that "a firm's profitability is a factor of the firm's working capital management practices." A company's working capital refers to the money that is available to a company for its daily operations. Managers must therefore come up with sound corporate financial decisions on working capital management to ensure value creation.

Previous literature shows the methods that firms use to manage working capital dictate their profitability. Samiloglu and Demirgunes (2008) observed that rather than examining reasons behind relationships between profitability and working capital management, most research studies are concerned with advancing the existing models to predict best profitability and cash balance. The past studies employ several variables to determine the relationship but there still exists an ambiguity on the suitable variables that can act as a measure for this relationship between profitability and methods of managing working capital. Thus this study aims at bridging the gap by conducting a study on the same for a period between 2004 and 2018.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section majors on study methodology that was employed to attain this objective. It is about identification of research design and target population. It also outlines research methods and data analysis.

3.2 Research Design

"The study employed both descriptive and correlation research structures to establish the association between working capital management and profitability of Kenyan manufacturing companies." In order to establish this empirical relationship, multiple regressions were used as a tool of data analysis. Data was represented using tables. Descriptive research was deemed appropriate since it demonstrates the connection of the "subject matter with something else (Kothari, 2004)." It demonstrates the least and most estimations of the factors which will help to give an image about the greatest and the base qualities a variable has procured. Correlation research configuration was regarded proper since it decides the quality and course of the relationship between at least two factors.

3.3 Population of the study

The samples considered in this study included all the seven (7) manufacturing companies listed at NSE in Kenya within fifteen years from 2004-2018. The companies that were enlisted and delisted within the period of the study were not considered hence exempting Flame Tree Group Holdings Ltd from the study. Listed companies are public entities

adhering to strict corporate governance regulations, making their financial statements highly reliable hence were deemed appropriate for this study. The study was conducted for a period of fifteen (15) years because this duration was deemed appropriate to enable the researcher understand better the trends of the variables of the study.

3.4 Operationalization of the variables

Table 3.1: How Variables were Measured

Variable	Formula
CCC	(average collection period + inventory turnover period - average payable period)
ACP	(accounts receivable∕net sales) ×365
APP	(Accounts Payable∕Net sales) ×365
ITP	(inventory∕cost of goods sold) ×365
FS	(natural logarithm of sales)
DR	(Total liabilities/Total Assets)

Cash conversion cycle developed by Gitman (1974) as part of operating cycle shows the interaction of a company's cash flow and tools for managing a firm's working capital can be used to reveal the cash amounts required by a company for a given level of sales since it measures the speed at which a firm coverts its resource inputs into cash flows. Arnold (2008) argues that a shorter CCC implies fewer resources needed by a company hence a longer CCC translates into higher investment in WC by a company. This is because when the CCC is shorter, there is limited time WC is engaged in the business thereby reducing

WC requirement for the company. CCC may vary depending on the industry. It is therefore advisable to compare firms in one industry (Hutchison, 2007)

According to Westerfield, Jaffe and Jordan, (2008), an average Collection Period refers to sales outstanding which can also be defined as the conventional time that a firm maintains its accounts receivables (Ross, Michalski (2007) indicates that a decrease in a firm's value will be experienced when there is an increase in accounts receivable because such an increase will increase the cost of holding and managing accounts receivable and the networking capital. Deelof (2003) adds that the amount of time spent to collect receivables negatively affects profitability while Juan and Matinez (2002) concludes that, reducing the duration of accounts receivable can create value to a firm.

Trade credit is the leading source of short-term funding in business. Average payment period is the period that a business organization takes to fully pay suppliers (Muthuva, 2010). Van-Horne and Wachowicz (2004) advocates that accounts payable management refers the balancing between the benefits associated with trade credits and penalties from late payments, costs of foregoing cash discounts, opportunity cost of deterioration in credit standing and chance of increase in price posed on buyer by the seller. Efficient management of Average Payment Period ensures proper maintenance of cash flows and hence high liquidity and profitability.

Inventory is the major component of current assets. Inventory management therefore forms the most essential part of "working capital management" since it facilitates a firm's operations. Inventory turnover period depicts the rate at which manufacturing organizations transform raw materials, labor and final products into sales.

3.5 Data Collection

In order to ensure comprehensive comparison and examination of the companies, this study utilized secondary data. This information was gained from existing budgetary information of the manufacturing organizations recorded at NSE. The data that was accumulated incorporated data on yearly net benefits, resources, incomes and risk levels for the period 2004 to 2018, utilizing the yearly reports distributed by the said organizations. These budget reports were gotten from CMA library, NSE library and Website.

3.6 Data Analysis

In achievement of study's objective, the research employed quantitative research approach. To get the research findings both regression and correlation analysis were employed to examine the nature and extent of this relationship.

3.6.1 Analytical Model

The study employed the following model to analyze "the relationship between profitability (to be measured by ROA) and working capital management variables."

$$ROA_{it} = a + \beta1(CCC) + \beta2(ACP) + \beta3(ITP) + \beta4(APP) + \beta5(FS) + \beta6(DR) + e$$

Where:

ROA_{it} – Return on Assets at time $t = 1, 2,.....5$ years and $i = 1,2,......8$ firms; a – Constant Term; β – Regression model coefficient; "CCC – Cash Conversion Cycle; ACP

– Average Collection Period; ITP – Inventory Turnover Period; APP – Average payment Period; FS – Firm size; DR – Debt Ratio; e – Error Term."

Control variables here are the firm size, debt ratio and current ratio illustrated as bellow:

Firm size: the bigger the firm, the higher the profitability. Firm size measures as the natural logarithm of assets

Debt ratio: applied as a measure for leverage

CHAPTER FOUR: DATA ANALYSIS, RESULTS, INTERPRETATIONS AND DISCUSSION

4.1 Introduction

This chapter focused on data analysis, interpretation, and presentation. The objective of the study was to "investigate the impact of working capital management practices on the profitability of the manufacturing firms listed in the Nairobi Securities Exchange." The chapter centered on a discussion of descriptive statistics, test of association through use of correlation analysis, estimation of the effect of predictor variables on dependent variables done through regression statistics and the chapter ended with a section on the discussion of the key findings.

4.2 Descriptive Statistics

The variables measured "in this study included Return on Assets (ROA), Cash Conversion Cycle (CCC), Average Collection Period (ACP), Inventory Turnover Period (ITP), Average Payable Period (APP), Firm Size (FS) and Debt Ratio (DR)." Table 4.1 shows the means and standard deviation of the variables under investigation. The mean column is a representation of the average values for each of the variable. Numerical dataset with higher mean values will be considered to be having a higher influence. The standard deviation will be used to indicate how far the numerical values are distributed from the mean and the notion applied will be that the further a numerical value is from the mean, the higher the volatility.

From the findings, it can be deduced that manufacturing firms take an average of 52 days

when converting their investments in terms of inventories together with that of other

resources into sales cash flows. The companies were found to receive payments for sales

after 84 days with a possible deviation of 86 days. Based on a mean score of 101.41, it

can be interpreted that "the manufacturing companies listed on Nairobi Securities

Exchange take an average of 101 days to sell their stocks." Average payable period has a

highest mean of 194.86 with a standard deviation of 214.00 respectively meaning that the

firms took an average duration of 194 days to clear their payables. The aspect of firm size

was measured based on log of total assets and this produced a mean ratio of 8.57.

Furthermore, the results on debt ratio gave a mean of 0.40 which implied that the

proportion of the assets of manufacturing companies which is financed by debt was 40%.

The return on assets (ROA) streamed a mean of 16.57 and a standard deviation of 25.56.

This meant that on average the listed manufacturing firms were able to make higher

returns of 165.7% on the capital invested.

Table 4.1: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Cash conversion cycle	105	.00	878.00	52.79	137.07
Average collection period	105	.00	750.38	84.28	86.23
Inventory turnover period	104	.00	917.49	101.41	143.46
Average payable period	105	.00	1724.03	194.86	214.00
Firm size	105	3.81	12.11	8.57	1.87
Debt ratio	105	.00	2.35	.40	.32
ROA	105	.00	146.95	16.57	25.56

4.3 Correlation Analysis

In determination of the strength on the relation of the variables the study employed the use of Pearson's coefficient of correlation. It was expected that when proper and efficient management of working capital improves profitability, then a negative relationship between the components of WC and ROA will be established. Table 4.2 contains the results achieved in correlation.

From the findings, average payable period had a significant association with profitability of manufacturing firms. However, the strength of significance level is negative as it gave a correlation value of -0.236 support by a strong p – value of 0.016. Another variable which was found to be statistically associated to financial performance negatively, is debt ratio with a coefficient value of -0.201 ($p = 0.040$). In addition, the size of a listed manufacturing firm is statistically associated with profitability as it provided a correlation value of 0.205 ($p = 0.036$). This can be interpreted to mean that listed firm tend to performed better when their scale of operations as measured by assets held are higher.

On other hand, it can be construed that CCC is not associated with profitability of the "manufacturing firms listed" on NSE significantly, since the variable produced a coefficient value of 0.016 and a weak p – value of 0.868. Average collection period was found to have an insignificant association with profitability of listed firms given a correlation value of 0.031 and a $p > 0.05$. Similarly, inventory turnover period as well was less significantly associated with return on assets given a coefficient value of = -0.097 accompanied by a weak

p =   0.325.

Table 4.2: Correlation Analysis

		ROA	Cash Conversion Cycle	Average Collection period	Inventory Turnover Period	Average payable period	Firm Size	Debt Ratio
ROA	Pearson Correlation	1	.016	.031	-.097	-.236*	.205*	-.201*
	Sig. (2-tailed)		.868	.757	.325	.016	.036	.040
	N	105	104	105	105	105	105	105
Cash Conversion Cycle	Pearson Correlation	.016	1	.088	.757**	-.050	-.424**	-.122
	Sig. (2-tailed)	.868		.377	.000	.616	.000	.219
	N	104	104	104	104	104	104	104
Average Collection period	Pearson Correlation	.031	.088	1	.099	.017	-.158	-.082
	Sig. (2-tailed)	.757	.377		.316	.864	.107	.408
	N	105	104	105	105	105	105	105
Inventory Turnover Period	Pearson Correlation	-.097	.757**	.099	1	.471**	-.498**	-.091
	Sig. (2-tailed)	.325	.000	.316		.000	.000	.358
	N	105	104	105	105	105	105	105

Average payable period	Pearson Correlation	-.236*	-.050	.017	.471**	1	-.083	.011
	Sig. (2-tailed)	.016	.616	.864	.000		.402	.912
	N	105	104	105	105	105	105	105
Firm Size	Pearson Correlation	.205*	-.424**	-.158	-.498**	-.083	1	-.152
	Sig. (2-tailed)	.036	.000	.107	.000	.402		.121
	N	105	104	105	105	105	105	105
Debt Ratio	Pearson Correlation	-.201*	-.122	-.082	-.091	.011	-.152	1
	Sig. (2-tailed)	.040	.219	.408	.358	.912	.121	
	N	105	104	105	105	105	105	105

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

"**. Correlation is significant at the 0.01 level (2-tailed)."

4.4 Regression Analysis

The study further carried out regression analysis where the results on model summary was determined based on the *R* squared, Analysis of Variance (ANOVA) results are as well given where *F*-test and *p* – value (Sig) were used to establish the joint significance of all coefficients. Moreover, the regression model provided the coefficients of variables together with *t* – tests and *p* – values which estimated the coefficients' significance levels for every predictor variable.

4.4.1 The Effect of CCC, ACP, ITP and APP on Financial Performance

"In the first step, regression analysis was done to establish the effect of CCC, ACP, ITP and APP on financial performance and" this followed the equation below:

$$ROA_{it} = a + \beta_1(CCC) + \beta_2(ACP) + \beta_3(ITP) + \beta_4(APP) + e \dots\dots\dots\dots\dots\dots\dots\dots 1$$

Where ROA_{it} – Return on Assets at time t = 1, 2,.…15 years and i = 1,2,……7 firms; a = constant term; β – Regression model coefficient; "CCC – Cash Conversion Cycle; ACP – Average Collection Period; ITP – Inventory Turnover Period; APP – Average payment Period; while e is the error term."

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.236[a]	.056	.018	25.40126

a. Predictors: (Constant), Average Payable Period, Average Collection Period, Cash Conversion Cycle, Inventory Turnover Period

The summary results given in Table 4.3 indicate that the regression model provided a combined correlation R-value of 0.236 and a goodness of fit R-squared value of 0.056. Therefore, an indication that the constructs of "average payable period, average collection period, cash conversion cycle, and inventory turnover period together, have ability of explaining only 5.6% of variation in profitability of listed manufacturing firms."

Table 4.4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3775.46	4	943.87	1.46	.219[b]
1	Residual	63877.19	99	645.22		
	Total	67652.65	103			

a. Dependent Variable: ROA
b. Predictors: (Constant), Average Payable Period , Average Collection Period , Cash Conversion Cycle, Inventory Turnover Period

The output of ANOVA shown in Table 4.4 gave "a regression sum square" of 3775.46 and a slightly higher residual sum square of 63877.19 with a mean squares of 943.87 for regression and 645.22 for residual. Given an F – statistics of 1.46 and a significant p – value of 0.219, could imply that all the predictor variables used in this model did not have a joint significance level and therefore an indication that the study fail to reject any null

hypothesis that APP, ACP, CCC and ITP do not influence profitability of listed manufacturing firms since the error we make by saying so, is >0.5.

Table 4.5: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	21.44	4.22		5.08	.000	13.06	29.82
Cash Conversion Cycle	-.009	.043	-.044	-.208	.835	-.094	.076
1 Average Collection period	.009	.029	.029	.291	.771	-.049	.066
Inventory Turnover Period	.011	.042	.059	.248	.805	-.074	.095
Average payable period	-.031	.019	-.264	-1.69	.093	-.068	.005

a. Dependent Variable: ROA

From the findings given in Table 4.5, it can be construed that holding all other variables constant profitability of listed manufacturing firms will be 21.98. All the predictor

variables used in the model namely "cash conversion cycle, average collection period, inventory turnover period, and average payable period, were found to have an insignificant effect on financial performance of listed manufacturing firms since they produced a weak p – value of >0.05."

4.4.2 The Control Effect of firm size and Debt Ratio on the relationship between CCC, ACP, ITP and APP on Financial Performance

"The study further established the control effect of firm size which was measured through log of total assets and debt ratio on the influence of working capital management practices in terms of CCC, ACP, ITP and APP on profitability." Thus, it used the equation as below:

$$ROAit= a + \beta1(CCC) + \beta2(ACP) + \beta3(ITP) + \beta4(APP) + \beta5(FS) + \beta6(DR) + e \ldots\ldots..2$$

Where ROA, t, i, a, β, CCC, ACP, ITP, APP, and e are as indicated in equation 1 above. FS is a representation of firm size, while DR stands for debt ratio.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.361[a]	.130	.076	24.63349

a. Predictors: (Constant), Debt Ratio, Average Payable Period, Average Collection Period, Cash Conversion Cycle, Firm Size, Inventory Turnover Period

The model summary illustrated in Table 4.6 indicates that the coefficient of determination R square is 0.130. This means that with the introduction of the two control variables the model goodness fit improved from 0.056. This still has implication that all the predictor variables used in the model are able to explain about 13% of the variation in ROA. This also implies that 87% of the variation in ROA is attributed to the measurements of error and other factors that could have had an effect on the ROA of listed manufacturing firms which are not captured in the second model of study.

Table 4.7: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	8792.197	6	1465.366	2.415	.032[b]
1	Residual	58860.453	97	606.809		
	Total	67652.650	103			

a. Dependent Variable: ROA
b. Predictors: (Constant), Debt Ratio, Average Payable Period , Average Collection Period , Cash Conversion Cycle, Firm Size, Inventory Turnover Period

Table 4.7 presents a summary of ANOVA output when the control variable size and debt ratio are included, the findings revealed that the model's F – statistics also changed to 2.415 with a significant p – value of 0.032 which is lower than 0.05. Hence, an indication that all the predict variables used in this model are found to be significant in determining "profitability of manufacturing firms listed on Nairobi securities exchange." This could

also have an implication that the study should reject the null hypothesis that CCC, ACP, ITP and APP in conjunction with firm size and debt ration do not influence profitability of listed firms under manufacturing sector since the error we make is <0.05.

Table 4.8: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-2.903	16.371		-.177	.860	-35.394	29.588
Cash Conversion Cycle	-.020	.042	-.096	-.471	.639	-.103	.063
Average Collection period	.013	.029	.045	.470	.640	-.043	.070
Inventory Turnover Period	.041	.044	.229	.931	.354	-.046	.128
Average payable period	-.039	.018	-.327	-2.121	.036	-.076	-.003
Firm Size	3.200	1.598	.233	2.003	.048	.029	6.370
Debt Ratio	-11.701	7.807	-.148	-1.499	.137	-27.197	3.795

a. Dependent Variable: ROA

Furthermore, the results of coefficients in Table 4.8 show that only average payable period and firm size were able to influence financial performance of the firms under

investigation significantly. For that reason, the findings show that a decrease in period of time taken by manufacturing firms to clear their payables increases their chances of performing better financially since it provided a coefficient value of -.039 supported by a strong p – value of 0.036. Furthermore, the construct of firm size tends to increase financial performance as it increases as advocated by a regression value of 3.200(t = 2.003) supported by a significant p – value of 0.048. This could be an indication that large sized manufacturing within NSE tend to perform better financially as compared to smaller ones. On other hand, the aspects of CCC, ACP, ITP and debt ration seem not to have significant effect on ROA of listed manufacturing firms.

4.5 Interpretation and Discussion of the Findings

"The study sought to investigate the impact of working capital management practices on the profitability of the manufacturing firms listed in the Nairobi Securities Exchange." Using ROA as "the dependent variable and CCC, ACP, ITP and APP as the independent variables, while on the other hand, firm size and debt ratio were employed in this study as control variables." The study has established a significance correlation between average payable period, debt ratio and firm size towards ROA which indicated that a change in these variables would have a significant impact "on financial performance of manufacturing firms listed on Nairobi securities exchange." The revelation is in line with that of Awunyo, Akoto and Lawer (2013) whose study established that that an organization's size, money turnover cycle, current resource turnover and current resource degree completely influenced profitability. On the opposite, CCC, ACP and ITP are

found to have an insignificant association towards profitability of listed manufacturing. These findings contradict the results from the study carried out by Rehman (2006) who discovered that there exists a positive relationship when CCC was supplanted with records payable consequently they further presumed that more benefits can be made if organizations handle effectively their CCC keeping every part of CCC to an ideal level.

The results on regression coefficient values in the first model indicated that all independent variables under study namely CCC, ACP, APP and ITP were found to have an insignificant effect on firms' profitability. However, upon inclusion of firm size and debt ratio in the second mode as control variables, the findings revealed that only firm size and account payable period were significant in predicting financial performance of listed manufacturing as contrary to CCC, ACP, ITP and debt ratio. Nduati (2014) found a major negative connection between normal accumulation period and benefit. He likewise found a negative connection between stock turnover period and an association's gainfulness. Rehman (2006) on other hand realized a strong and negative relationship among working capital degrees on financial performance of business organizations.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study summary of the findings based on descriptive statistics and inferential statistics. Conclusions are also made with focus on the results of the research as well as suggestions for further research and recommendations to be considered by the relevant authorities.

5.2 Summary of Findings

This research study set out to investigate the impact of "working capital management practices on the profitability of the manufacturing firms listed in the Nairobi Securities Exchange." To this end, the study gives a summary of the key findings based on descriptive, correlation and regression findings. The study established that manufacturing firms take an average of 52 days when converting their investments in terms of inventories together with that of other resources into sales cash flows. The companies were found to "receive payments for sales after an average of 84 days." The "manufacturing companies listed on Nairobi Securities Exchange were found to take an average of 101 days to sell their stocks." On average, the firms took about 194 days to clear their payables. The proportion of the assets of manufacturing companies financed by debt was found to be about 40%.

The findings on test of association revealed that there existed significant correlation between average payable period, debt ratio and firm size towards profitability of listed manufacturing firms and this implied that a change in these variables was associated to a significant impact on financial performance of manufacturing firms listed on Nairobi securities exchange. On the opposite, CCC, ACP and ITP were found to have an insignificant association towards profitability of listed manufacturing. The regression findings revealed that all the predictor variables in the first model namely CCC, ACP, APP and ITP were found to have an insignificant effect on manufacturing firms' profitability. However, with inclusion of firm size and debt ratio in the second mode as control variables, the findings revealed that only firm size and account payable period were significant in predicting financial performance of listed manufacturing. This has indication that only firm size was able to report significant control effect on the relationship between CCC, ACP, ITP and APP on financial performance.

5.3 Conclusion

It was established that manufacturing firms take about one and half months to convert their disposals and resources into cash flows. They receive their payments for sales after almost three months. Likewise, it can be concluded that the listed manufacturing companies take about three to sell out their stocks. However, the firms are found to take approximately six and a half months to clear their payables. An indication that the manufacturing firms take too long a time to settle their creditors. The study concludes

that average collection period, inventory turnover period, debt ratio and cash conversion cycle, do not influence firms' profitability.

It can further be concluded that the key indicators of change in financial performance are average payable period and firm size. Profits can be realized when majority of organizations, especially, manufacturing, have their account for their available current assets to over a half of the total assets and the proportion could even be higher for a distribution company. Thus, maintaining too few current assets may result into a firm incurring shortages and difficulties in maintaining smooth operations. Therefore, is only by having too much level of current assets that make an organization realize a crappy return on asset. This should be enhanced by firms realizing substantial working capital, by balancing risks and efficiency.

5.4 Recommendations

The study recommends that the manufacturing firms listed on Nairobi securities exchange should put more emphasis on managing their total assets invested and that it employs an optimal level of total assets that has good systems to properly manage in-order to improve performance.

The managers of this firms should also take appropriate measures to ensure no stock outs and no unnecessary loss of potential credit customers as they pursue an optimal WCM approach to managing working capital components even though they do not significantly affect their financial performance.

Furthermore, "working capital management should aim at having optimal proportions of working capital components in order to achieve maximum profits and cash flows" where listed manufacturing companies should ensure payment of their creditors in time in order to cultivate goodwill and possibly get discounts for early payments.

5.5 Suggestions for Further Research

The present study investigated the impact of working capital management practices on the profitability of the manufacturing firms listed in the Nairobi Securities Exchange. It can therefore be suggested that further research should be done to highlight the influence of working capital levels on financial performance firms in different geographical settings. Same research study should be replicated over a different period incorporating external variables to determine their combined effect on firm performance. Other factors such as GDP, interest rate, corporate governance, taxes, firm age, sales growth among others should be considered in future studies as were not captured by the model used so as to ascertain their impact on profitability.

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APPENDICES

Appendix I: Manufacturing Companies Listed at NSE as at 31st December 2018

S/No	Company Name
1	British American Tobacco Kenya Ltd
2	East African Breweries Ltd
3	B.O.C Kenya Ltd
4	Carbacid Investments Ltd
5	Kenya Orchards Ltd
6	Flame Tree Group Holdings Ltd
7	Unga Group Ltd
8	Mumias Sugar Co. Ltd

Appendix II: Data Collection Form

Name of the Company…………………………………………………………

Particulars	Year														
	04	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Sales															
Totl Assets															
Fxd Assets															
A/R															
A/P															
Inventories															
COGS															
Curr Assets															
Current Liabilities															
Total liabilities															
Equity															
Profits															