EFFECTS OF WORKING CAPITAL MANAGEMENT ON FINANCIAL PERFORMANCE OF THE MANUFACTURING FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE

BY

FANG YUAN

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DECLARATION

I, the undersigned declare that this is my original work that has not been submitted for any degree or examination in any other institution.

Signature:..... Date: 09/11/2023

Fang Yuan

D61/72453/2014

This research paper has been submitted for examination with my approval as the University Supervisor.

Signature:..... Date: 09/11/2023

Chairman, Prof. Mwangi Cyrus Iraya

Department of Finance and Accounting,

Faculty of Business and Management Sciences, University of Nairobi.

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LIST OF ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
APDAYS	Account Payable Days
BPS	Budget Policy Statement
CCC	Cash Conversion Cycle
CMA	Capital Markets Authority
EBIT	earnings before interest and taxes
FASB	Financial Accounting Standards Board
KNBS	Kenya National Bureau of Statistics
RBT	Resource Based Theory
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
SME	Small and Medium Enterprise
WCM	Working Capital Management

ABSTRACT

Working capital influences decisions organizations make regarding financial economics. This study conceptualized association between working capital management and financial performance. Its primary goal was to evaluate the effects of working capital management on financial performance of manufacturing firms listed at Nairobi Securities Exchange. Information was obtained from secondary data. Descriptive research design was adopted. Published record of nine manufacturing firms for the period of 2012 to 2021 were used to obtain data. Eight firms were used in the analysis due to data availability. Inferential statistics was used to test the hypotheses. According to findings, working capital requirements, cashflow ratios and liquidity ratios collectively and respectively significantly influenced manufacturing firms' performance. It was deduced that working capital management influenced manufacturing firms' financial performance. Hence, firms should put more emphasis on working capital management. This study suggested that manufacturing firms ought to have a good working capital management policy since it had significant impact on their performance. This study further recommended that firms must look at each component, that is, working capital requirements, cashflow ratios as well as liquidity ratios since they collectively and respectively impacted on financial performance.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Virtually all organizations, big or small, management of capital is not only key element of accomplishment, but also a continual critical prerequisite for firms' existence (DeFranco & Schmidgall, 1998). Working capital is key in decision making regarding financial economics. Organization cost-effectiveness is influence by management of working capital. Profit maximization as well as liquidity perseveration are key objectives of any firm. The issue is growing profits at the expense of liquidity can lead an organization into problem (Shin & Soenen, 1998). For an organization to survive for a long time, it must care about its profits otherwise it will perish in the short term. Hence, the two objectives of maximizing profit and maintaining a proper level of liquidity must be balanced and achieved at the same time for a going concern firm.

The importance and value of working capital management efficiency is unquestionable. Firm achievement profoundly depends on finance manager capability to efficiently handle debtors, stocks and creditors (Filbeck & Krueger, 2005). Minimization of funds in current assets enables organizations to manage the financing which further increases amounts available for projects investments. The effectiveness of liquidity management demands proper plan and control of both current assets and current liabilities that eradicates risk of incapacity to pay off short-term obligations and reduce over spending on assets (Eljelly, 2004).

The study was supported by the following theories namely; Portfolio theory (Markowitz, 1959), Liquidity preference theory (John Maynard Keynes, 1930), Agency theory by Jensen and Meckling (1976) as well as Resource Based View theory (Wernerfelt, B., 1984). Portfolio theory is anchored on the assumption of

perfect capital markets. Proponents of portfolio theory are Markowitz (1952) and Markowitz (1959). The theory undertakes investors to be risk averse as opposed to risks takers, so that the investors would always go for less risky portfolios at any given expected returns. Liquidity Preference Theory is an individuals' money value for wealth storage and immediate business transactions (Bibow, 2005). Agency theory debates the issues of ownership and control independence in a big company as initiated by Adam Smith (1776). And the theory highlights the importance of structural institution mechanism and systems with checks and balances on agents' behavior (Fadler & Legner, 2021). According to Resource Based Theory, lasting competitive advantages are built on firms' unique resources (Conner & Prahalad, 1996). Dollinger (1999) posited that entrepreneurs use available resources and competencies in development of firms. Resource Based Theory assumes that assets allocations vary from one organization to another. Further the allocation of resources varies from time to time. Portfolio theory (Markowitz, 1959) helps managers think about planning risks and returns for day-to-day operations. Liquidity preference theory (John Maynard Keynes, 1930) guides managers to invest money in assets. Agency theory by Jensen and Meckling (1976) helps shareholders and managers develop balanced corporate working capital management policies which serve a company's financial performance. Resource Based View theory (Wernerfelt, B., 1984) enables managers build competitiveness and enhances performance of a company through utilizing its resources of working capital.

1.1.1 Working Capital Management

Working capital is an essential tool for financial economics decision making. gross working capital and net working capital are generally two concepts that refer to it. Gross working capital refers to total short-term assets. And generally net working capital describes the total current assets excluding long term liquidated investments (current assets minus current liabilities). Short term liabilities include payables in terms of payroll, sales and income taxes, interest, overdrafts and unpaid expenses. The structure of working capital differs across organizations (Atrill, 2006). Long

term outlay and finance decisions are used to generate forthcoming cash flows. Evaluation of a firm market worth is grounded on discounted forthcoming cashflow.

Working capital management guarantees that a firm has capacity to settle their current liabilities sufficiently at the appropriate time. This reduces situations where organizations have enormous resources which are not yielding income required to meet current financial needs (Akoto, Awunyo & Angmor, 2013). Significance of efficient working capital management by manufacturing firms in Kenya is enormous as it tremendously important in boosting productivity and increasing growth, a pre-requisite for managing unemployment in Kenya as well as enhancing fiscal and monetary constancy. According to Shin and Soenen (1998), liquidity and profitability of a firm depend significantly on the management of working capital. Key goal for organization is profit maximization, however, upholding liquidity is as well as important for an organization. The challenge is that maximizing profitability at expense of liquidity will result in grave consequences for the organization. Thus, strategic organization has to balance both profitability maximization and liquidity maximization objectives. The problem in working capital management is to obtain favorite compromise in liquidity and profitability (Raheman & Nasr, 2007). Ratios related to current assets and current liabilities are often used to evaluate working capital management.

1.1.2 Financial Performance

Entities' performances often depend on if their resources are appropriately utilized to get their goals. Outstanding financial performance enables the firm to sustain and make the strategy of the firm improved for the future (Hoskisson, Johnson & Moesel, 1994). Various factors are involved to a firm's performance, such as effectiveness, efficiency, financial institutions, financial viability. Effectiveness emphasizes the unique characteristics possessed by a firm for achieving its objectives. Business productivity is defined as the cost per unit of output that is considerably lower

compared to inputs cost, and meanwhile there is no other way to reduce inputs at the same scale of production. (Machuki et al., 2011).

Financial performance is idiosyncratic measure of in what manner an organization uses assets from its main business and create returns. Financial performance is universal indicator of firm's total financial health within a financial year. Financial viability, as well determined by a firm's capacity to manage its financial resources. Relevance is the firm's capability to grow in ways that build on its advantages. Ricardo and Wade (2001) posited that performance is the ability to exploit strengths, overcome weaknesses, eliminate threats and seize opportunities. Scholars working in different fields demonstrate differences in their conceptualizations. Nevertheless, they all have one thing in common; some of them have an in-depth view of financial matters, while the rest of them have an unbiased view of non-financial factors. Those returns that are financial, such as return on assets (ROA), return on investment (ROI), return on equity (ROE), as well as profit-related growth. These measures are uniform because all firms have known the units across the board (Lebans & Euske, 2006).

1.1.3 Working Capital Management and Financial Performance

Working capital management plays a momentous part in improving organizations financial performance. Organizations realizes optimum management of working capital by balancing profitability with liquidity and vis versa. Working capital management is the capability to regulate proficiently both current assets and liabilities in a manner which delivers organization optimum returns (Raheman & Nasr, 2007). Working capital management proficiency is important specifically in manufacturing organizations, where significant volume of assets are made up of short-term assets (Horne & Wachowicz, 2000). It positively influences success of the organization (Raheman & Nasr, 2007). According to Kargar and Blumenthal (1994), tradeoffs between profitability and liquidity must be undertaken because improper attention to working capital management leads to high likelihood of failure and bankruptcy amongst organizations.

Filbeck and Krueger (2005) posited that importance of working capital management competence is undisputable. Corporate management function encompasses working capital management, that is, it gives life to ant economic unit. The amount of working capital is key for both profit and non-profit organizations irrespective of their nature of business and size. According to Mukhopadhyay (2004), key factors in managing liquidity, solvency and profitability is through understanding of working capital. Thus, distinct mechanisms of working capital are significant in organization performance.

1.1.4 Manufacturing Firms Listed at Nairobi Securities Exchange

In Kenya, manufacturing industry companies generally involve large working capital in their operations because of the nature of the industry. Therefore, working capital management is essential to their existence and achievement of their goals. Although the Capital Markets Authority has taken huge steps towards financial deepening, the CMA report (2020) shows that there still exist some challenges and short comings, that is, low investor confidence in the market, deficiency in knowledge amongst asset managers, and inadequate government regulation. Most of complications revolves around lack of effective supervisory setting and absence of goodwill. This called for appropriate supervisory mechanisms amongst the Nairobi Securities Exchange publicly traded companies to handle the mentioned challenges.

In the context of this study, manufacturing companies were used because they had heavy investments on assets. At Nairobi Securities Exchange there were nine companies in this sector: Flame tree group holding limited, Mumias Sugar Limited, Unga Group Plc, Eveready East Africa limited, Kenya Orchards limited, B.O.C Kenya limited, British American Tobacco Kenya limited East African Breweries limited and Carbacid Investments limited.

1.2 Research Problem

For manufacturing firms working capital management competence is critical, since significant assets volume comprises of current assets (Horne & Wachowicz, 2000). Raheman and Nasr (2007) found that working capital management positively influence organization profits and its liquidity. In corporate governance, working capital is a vitalizing power to management of commercial firm (Filbeck & Krueger, 2005). Enyi (2011) posited that existence capability of a firm is significantly anchored on the continued solvency of the firm. Amarjit et al., (2010) opined that working capital management is important to shareholders for creating wealth. Enyi (2011) states that organization is as robust as its creative capital base, fluid as its working capital volume, energetic and workable as its management choices, working capital is the epicenter of organizational survival.

In Kenya, manufacturing and allied sector is the fourth biggest sector of the economy. According to Nairobi Securities Exchange (2022), manufacturing and allied sector includes nine listed firms. Notwithstanding government pledge to encourage manufacturing, a number of firms registered deteriorating returns though financial manager's concentrating on financial reform and working capital management to resuscitate performance (Kibet et al., 2011). Manufacturing industry in 2016 improved by 3.5%, lower than average economic growth of 5.6%. 2017 recorded a growth rate of 8.4%, 2.5% in the year 2019, 2020 recorded a growth rate of -0.4 and in 2021 the growth rate was 6.8 % respectively (KNBS, 2021). The government anticipate an input of 22 percent of the industry to the gross domestic product by 2022 (BPS, 2018). The anxiety is whether this will be achieved in the presence of wobbly performance within the industry.

Empirical review shows mixed results on influence of working capital management on performance of organizations. Angahar and Agbo (2014) found out direct relationship between profitability and cash conversion cycle of Nigerian cement sector. Osundina (2014) established that working capital management was

significantly positively related to profitability amongst food and beverage manufacturing organizations in Nigeria. Ghosh and Maji (2004) established a significant inverse connotation between working capital management and profitability of Indian cement companies. Ramachandran and Janaki Raman (2007) studied association between working capital management and earnings before interest and taxes (EBIT) from Indian paper firms. The results indicated that working capital was well managed. The accounts payable days (APDAYS) was negative but significantly influencing EBIT). Cash conversion cycle was hampered by delays in bills payment from low profit-making organizations. Kaur (2010) found out that working capital management directly influence performance in Indian tire industry. Locally, Nduta (2015) established significant direct influence of ROA and current liabilities ratio, as well as current assets on total assets ratio of the companies in manufacturing sector trading at Nairobi Securities Exchange.

Given the challenges facing manufacturing industry in Kenya, minimal attention had been steered towards research on working capital management and financial performance in this sector. It is on the basis that this study sought to clarify what is the influence of working capital management on financial performance of manufacturing firms listed at Nairobi Securities Exchange?

1.3 Research Objective

Main objective was to evaluate effects of working capital management on financial performance of the manufacturing companies trading at Nairobi Securities Exchange. The following specific objectives guided the study:

i. Evaluate influence of working capital requirements on financial performance of manufacturing companies trading at Nairobi Securities Exchange;
ii. Evaluate influence of cash flow ratio on financial performance of manufacturing companies trading at Nairobi Securities Exchange;
iii. Evaluate influence of liquidity ratio on financial performance of manufacturing companies trading at Nairobi Securities Exchange.

1.4 Value of the Study

Research evaluates, at Nairobi Securities Exchange, influence of working capital management on financial performance of the manufacturing companies. In terms of academics, this research provides up-to-date information on the mentioned matter. It enriches knowledge on working capital management in Kenya. For business managers, this study helps them understand and predict how working capital management affects financial performance in the industry and help them to formulate working capital policies to manage their operations more effectively in order to obtain the desired results. For investors, the research will expound on the manufacturing firm operations analysis in Kenya. It gives them suggestions about what working capital management indicators should be paid more attention when they make investment decisions. For government authorities in Kenya, this research helps the government find out the key points to formulate relevant policies conducive to working capital management from the government level to flourish the manufacturing industry.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looked back theoretical and empirical researches undertaken within area of the study. The development of theoretical framework helped to discover which theories best fit the variables under the study. This section assumed and critiqued the theories and their relevance. The literature review in this chapter was based on how the variables relate as outlined in the objectives. The gaps were further identified from the reviewed empirical literature. Finally, an illustration of the diagrammatical manner of a conceptual framework showed key variables.

2.2 Theoretical Review

This research reviewed four theories about working capital management and financial performance namely: Portfolio theory (Markowitz, 1959), Liquidity preference theory (John Maynard Keynes, 1930), Agency theory by Jensen and Meckling (1976) as well as resource based view theory (Wernerfelt, B., 1984).

2.2.1 Portfolio Theory

Portfolio theory is anchored on the assumption of perfect capital markets. Proponents of portfolio theory are Markowitz, (1952) and Markowitz (1959). Modern Portfolio Theory was propagated by Markowitz in 1950's on the argument that investors would pick a portfolio which optimizes their returns at a specified risk level. Classical portfolio theory stands anchored on efficient set theorem. This theorem falls short of explaining all distinctions in organizational choice which are important in real life (Shinzato, 2018; Sukharev, 2019). Portfolio theory relies on investment theory, this enables investors to accumulate asset portfolio with an aim of optimization of returns

at a given risk level. The theory undertakes investors to be risk averse as opposed to risks takers. That is, investors would always go for less risky portfolios at any given expected returns. Further for higher risk levels investors expect higher compensations in terms of returns. It is thus, imperative that in any portfolio investors are more concerned with the characteristics of the portfolio that that of the individual assets making the portfolio.

Portfolio theory cuts across many sectors, that is, finance and real economics. In real economics sector, portfolio units are categorized by changing values, return per unit of resources and risk. The selection of assets is based on list of factors such as correlation of asset return with all other assets, unique features of returns and variances. By factoring in these interaction factors an investor is capable of developing a portfolio with the lowest level of risk (Elton et al., 1997). The study of portfolio theory has added onto the body of management of money and other assets thus bridging the gap from mathematics to reality.

2.2.2 Liquidity Preference Theory

This is an individuals' money value for wealth storage and immediate business transactions (Bibow, 2005). Hence current usage of money sacrifices future interest earned on the same. Further one would wish to hold money currently for precautionary measures. Increase in interest rates discourages current spending in that people tend to hold less money for transaction purposes but saves money for future speculations. The uncertainness in the future encourages holding of money in terms of pure purchasing power.

According to Keynes (1936) there are three importance of liquidity namely; transactional, speculative and precautionary motives. Financial institutions require money on day-to-day basis so as to carry out economic transactions. This need is known as demand for money for transactions which is driven by time between income receipts and spending habit as well as size of income. In terms of precautionary

motives, firms keep liquid money for unforeseen emergency, accidents and contingencies issues. On the other hand, speculative motives drive firms to keep money in anticipation of changes in the prices of securities and bonds.

2.2.3 Agency Theory

Agency theory debates the issues of ownership as well as control independence in a big company as initiated by Adam Smith (1776). Jensen and Meckling (1976) were well informed in creating this theory by the associated expenses and the ownership structure, which are highly appreciated when engaged in corporate governance. It is a theory considered to be overarching because it has been critiqued when control at the corporate level is discussed. The assumptions are specified, that is, separations where management is an important principle to matters dealing with governance structure (Armour et al., 2017). The conflict between shareholders (principles) and mangers (agents) are normally resolved by the directors (Kinuu et al., 2012).

The theory highlights the importance of structural institution mechanism and systems with checks and balances on agents' behaviour (Fadler & Legner, 2021). The theory plays a significant role due to the fact that managers are likely to champion more of their interest which are short-term neglecting the shareholders interest which are long term. (Songling, Ishtiaq & Med, 2018). It is further states that in a situation where shareholders are not able to get necessary information from the chief executive officers, managers tend to focus on their interests, hence affecting firm performance. The main challenge principles faces are managing the agents such that they minimize the losses from productivity and mitigating agency behaviors.

2.2.4 Resource Based View Theory

This is the anchoring theory of the study. According to resource based theory (RBT), lasting competitive advantage are built on firms' unique resources (Conner & Prahalad, 1996). Dollinger (1999) posited that entrepreneurs uses available resources and competencies in development of firms. RBT assumes that assets allocations vary from one organization to another. Further the allocation of resources varies from time to time. Chathoth (2002) argued that the concept of variable co-alignment allows organization to allocate some resources while ignoring others with the sole purpose of performance improvement.

RBT emphasis that by using unique resources, a firm is capable of improving its outputs. The unique resources enable a firm to achieve its competitive advantage position in the market. Firms must strive to use available resource in a way that enhances their competitive edge over and above the competitors in the industry. Conner (1991) argued that for a firm to remain competitive in a market, it must attain and defend the superior position by utilizing unique resources to its production and distribution. Barney (2018) posited that there exists a linkage between resource based view theory and stakeholder perspective.

2.3 Determinants of Financial Performance

Financial performances are significantly influenced by three factors, which is working capital requirements, cash flow ratio and liquidity ratio.

2.3.1 Working Capital Requirements

Working capital requirement remains significant source of cash needed to meet immediate objectives of an organization (Padachi, 2006). Alshubiri (2011) posited that Working capital management is key financial managing exercise because it has direct impact on financial returns of firms. Framing as well as implementing inclusive Working capital management is a way of improving organization worth (Padachi,

2006). Firms ought to uphold sound ratios of their assets, liabilities and working capital or else they would drive themselves out of the market. Inefficient administration of working capital is a recipe for bankruptcy cases amongst firms (Kargar & Blumenthal, 1994); which further translate into poor returns on assets and huge daily operation losses.

2.3.2 Cash Flow Ratio

Accrual basis of accounting is no longer sound proof of determining firm economic health (Mills & Yamamura, 1998). Cash flow ratios are useful for financial analysis. In is known fact that income is not an indicator of debt payment, however cash correspond to debt payment. Failure to pay the debts commitments as and when they mature is a sign of financial failure of a firm. A study by Beaver (1966), first predicted bankruptcy, which then gave window for subsequent studies on the topic of bankruptcy. Financial failures have been predicted on foundation of financial ratio and models established from ratios (Blum, 1974). The concept of cash flow has evolved from simple calculations on the basis of net income, depreciation and amortization to a more complex model incorporating cash receipts from operations less cash disbursements from operations (Aziz & Lawson, 1989). Further Giacomino and Mielke (1988) modified cash flow ratios to be computed in line with cashflow statements. Accordingly, Coltman and Jagels (2001), posited that failure to pay interest is obviously pointed out by cash flow interest coverage ratio.

The empiricism model used in predicting bankruptcy justified the ratios used (Ball & Foster (1982). However, these findings were basic specification which were not capable of identifying financial failure (Geng et al., 2011). This short coming was rectified by adopting cash-based fund flow model. Using FASB (1981), working capital is computed from cash flow from operators plus/minus non-cash working capital accounts. Laitinen (1999) posited that cash, income and balance sheet computed ratio generates other grouping structures in forecasting of failures.

2.3.3 Liquidity Ratio

The debt capacity in altering assets into cash are main determinants of tracking firm liquidity. Cashflow is assumed to be the greatest fluid amongst assets. Commercial liquidity is assessed by proficiency of changing assets into cashflow (Madushanka & Jathurika, M., 2018). Liquidity ratios evaluates firm capability to meet its debts commitments and its margin of safety through computation ratios. Liquidity ratios are key components in financial measures utilized in evaluating debtor's capability to pay current debt commitments and not sourcing for outside funds (Bolek, M. & Rafal W., 2012).

Liquidity ratios are greatest useful in comparative form, that is, internal and external analysis (Ashraf, K., 2012). Internal analysis entails use of multiple accounting periods reported on the basis of similar accounting methods. Comparison of current to previous periods allows specialists to track deviations in the business. External analysis entails comparison of liquidity rations across the firms in the industry. The information is useful in analysis firms' strategic position in the industry as well as formulation of benchmarks (Panigrahi. A.K., 2014).

2.4 Empirical Review

This section reviewed both global and local researches on working capital management and financial performance. This section also covered gaps identified in the reviewed empirical literature which leads to the carrying out of the study.

2.4.1 International Evidence

Pestonji and Wichitsathian (2019) revealed important direct association amid working capital investment policy amongst corporations listed at Thailand stock exchange. Despite the reasons to raise net working capital level, there remain adversative properties worth as the working capital ceiling increases beyond

acceptable limit. Mehta (2014) revealed that extended cash conversion cycle, hampered profitability. Rising working capital levels requires advanced funding and forgone cost, which, upsurges credit risk (Kieschnick et al., 2013). And Baños-Caballero et al. (2014) reported that working capital requirement in line with funding performance association varies in a period of financial crisis.

Ali and Ali (2013) revealed that Working capital management is important in financial administration policies amongst the firms. Singh and Asress (2015) used cash conversion cycle to study working capital management efficiency relative to liquidity measures. It found out that sufficient amount of working capital backed by operation size had superior performance as compared to other firms. Hayajneh and Yassine (2011), in research investigating the influence of working capital management on profitability amongst 33 Jordan firms in manufacturing sector, revealed that size of sales and growth positively influences profitability.

Mose (2016), in a study of cash management practices and financial performance of Kenya's private universities, found that proper cash managing practice heightened responsibility, thus, improves financial returns. Uwalomwa (2013), in study of impact of cash management on profitability amongst insurance companies in Nigeria, found that cash management and financial returns are significantly directly associated. In United States of America, cash managing and financial return are insignificantly related for firms in insurance, agriculture and construction industry.

Gibson (2009) posited that the enhancement of standards for ratios is directing to repossession in firm liquidity. This reflects directly on number of activities. Lartey, et al. (2013) did research of banks about association between their liquidity and profitability at Ghana bursa in the financial year 2005-2010 and found decline in liquidity and profitability ratios amongst the banks. Ajanthan (2013) established positive association between liquidity and profitability for commercial firms trading at Sri Lanka stock market. Zygmunt (2013) established that liquidity ratio significantly influences profitability amongst Polish information technology firms.

Khaldun (2014) in a study of manufacturing firms about association of their profitability and liquidity on the profit growth amongst beverages and food firms trading at Indonesia stock exchange, revealed weak but significant influence of current, quick and cash ratios on gross profit margins. Akter and Mahmud, (2014) studied the impact of consumer goods companies' debt-to-equity ratio and current ratio on return on assets at Indonesia stock exchange, and concluded that current ratio is not significantly associated with returns on asset. Priya and Nimalathasan (2013), in a study of manufacturing firms about influence of their liquidity management on profitability at Sri Lanka stock exchange, confirmed influence of current ratio and cash ratio on return on assets. Ruziqa (2013) studied banks about effects of their credit and liquidity risk on financial performance of traditional Indonesian banks in sum of assets exceeding 10 trillion Rupiah, and revealed that liquidity ratio positively influenced return on assets.

2.4.2 Local Evidence

Dancan (2021) sought to analytically examine small coffee wet mills about influence of their working capital management on financial returns in Embu County. The study found that mean payment period, current ratio, inversely influenced returns on asset. Hence, millers must manage average payment period and credit ration in order to enhance returns on asset. It was also found that factors such as growth rate, size, debt, capital expenditures and age also significantly impact return to farmers.

Kangangi (2020) studied small and medium enterprises (SMEs) about influence of their working capital management practices on growth in Nyeri County, Kenya. This study utilized cash, debtors, creditors, inventory management practices as growth determinants. This research revealed that cash management significantly influence SMEs growth within Nyeri County. Further, creditors management significantly influence growth of SMEs. Nevertheless, inventory management practices insignificantly positively influence SMEs growth in Nyeri County. Kioko (2020), in

a study of cement manufacturing firms about impact of their working capital management on profitability in Kenya, revealed that profitability and average payables period were inversely related amongst in Kenya. On the other hand, profitability and leverage were positively and significantly related. However, profitability was insignificantly but positively rated with both size of the firm and liquidity.

Mwangi (2016), used size of firm and leverage as determinants of profitability. It was revealed that the deteriorating current ratio yearly was consequence of deprived administration of working capital. It was further established that working capital mechanisms had bearing on ROA of companies, thus, the need for close monitoring. It is important for any firm to establish a system of working capital management. The related information should be recorded for monitoring its movement. The strategies should be devised by management to ensure that wastages and costs are reduced. The strategies for achieving optimum liquidity of a firm also should be devised in order to facilitate daily operations of the firm.

Nduta (2015) used working capital management, assets usage, leverage and firm size as firms' financial performance determinants trading at Nairobi Securities Exchange. That research revealed consistence decrease in current assets to total assets ratio in the period 2010-2014 amongst manufacturing firms. They also found that current liabilities had a higher influence on financial performance in comparison with current assets. Chemis (2015), considered competition, customers, innovation and development and corporate governance as determinants of firm performance. The study revealed that huge volume of cash is devoted as working capital amongst sugar companies in Kenya. The study found out that net operating profitability is directly related with predictors amongst the sugar companies. The results indicated that minimizing average collection period firms would generate wealth to stakeholders.

Olweny (2014) showed that debtor days conversion cash cycle indirectly influences operating gross profits. Creditors days and days in stock significantly positively

influenced performance. Inflation negatively influenced performance while size had appositive influence on performance.

Wahogo (2014), results indicated that factor of cash alteration effectiveness was inverse and significantly differs from zero, hence, higher cash conversion efficiency, lowers financial performance while lower efficiencies improved efficiency. On the other hand, a higher value of days operating capital leads to financial performance improvement.

2.5 Conceptual Framework

This study conceptualized working capital management as predictor variable, age of the firm as controlled variable and financial performance as response. Figure 2.1 indicates conceptual framework indicating relationship between the variables.

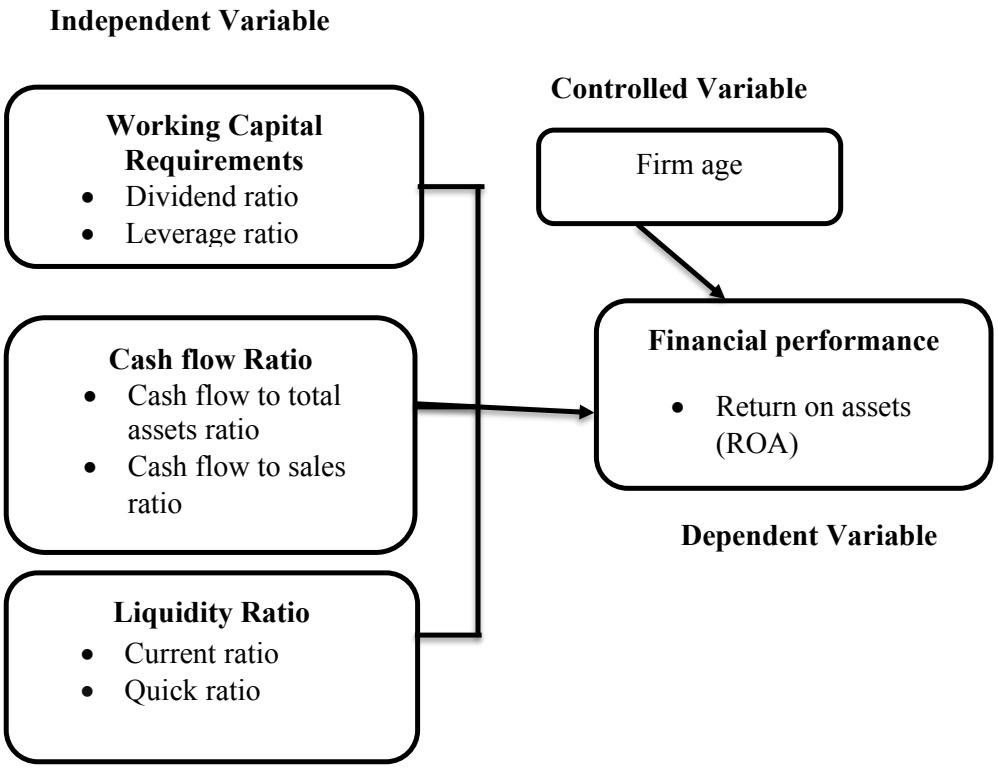

Figure 2.1: Conceptual Model

Source: Researcher, (2023)

2.6 Summary of Literature Review

Working capital management concentrated on working capital requirement, and cash flow ratio and liquidity ratio. The management of cash flows was intended to evaluate the ideal cash operating levels level for both short term and long-term purposes. Liquidity ratio was utmost important for comparison analysis. Issue arises as the extent that optimum level of liquidity should be maintained by the firm. Studies reviewed indicated inconclusive results as some recorded positive relationship, others negative relationship while some still established no relationship at all.

Previous studies revealed inconclusive results. For the firms trading at Nairobi Securities Exchange, there was no empirical evidence on impact of working capital management on their financial performance. This study intended seal the gaps by determining influence of working capital management on financial performance of the manufacturing companies.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section outlined methodology which to be applied in carrying out the research. It provided information on research design, target population and sample design. The chapter further articulated the methods of data collection, validity as well as reliability (diagnostic tests). Finally, data analyzing techniques were discussed.

3.2 Research Design

The edifice of a research is its research design (Kombo and Tromp, 2006). Orodho (2011) says that search design refers to a strategy of elements and condition applicable in data collection as well as data analysis relevant to study objectives. Descriptive design was used in this case. The design comprises data collection, analysis with an aim of making inference at one point in time (Babbie, 2012). This design was selected because it allows the researcher to test the formulated hypotheses.

3.3 Population

Population is a list of items from which data is obtained to derive conclusion (Cooper & Schindler, 2008). Target population is made up of items with information which assist the researcher to draw conclusions. In the study, target population was made up of 9 manufacturing companies trading at Nairobi Securities Exchange. Totally 9 companies were under manufacturing sector (Nairobi Securities Exchange, 2022). Census was carried out in all firms because of the size of the population. Manufacturing sector was chosen because of its immense contribution to the country GDP.

3.4 Data Collection

This is a method of obtaining data scientifically from numerous sources, on the other hand the instruments of data collection are tools applicable in the process such as questionnaires (Mugenda & Mugenda, 2003). Secondary data was collected on study variables, that is, working capital requirements, cash flow ratio and liquidity ratio. The study collected secondary data using data sheet. This was collected from published accounts of the firms trading at Nairobi Securities Exchange. Data collection covered years 2012 to 2021 (ten years).

3.5 Diagnostic Test

The following diagnostic tests were applied in this study; normality, linearity, multicollinearity and heteroscedasticity. Test of normality was done to evaluate how normal distribution tends. Numerically, Shapiro-Wilk test for normality was used. A test of linearity was applied when one wanted to test existence a relationship between response and predictor variable. A test of linearity was done by determining the slope or gradient obtained by plotting the dependent variable against the independent variables. A test of multicollinearity or collinearity was done so as to establish whether two independent variables were co-related or not. A heteroscedasticity test was applied to establish the homogeneity of the variance across the sub-groups in the population. Augmented Dickey Fuller (ADF) test was used for Stationarity test.

3.6 Data Analysis

This is a procedure in carrying out computation from collected data to bring out meaning (Kombo & Tromp, 2006). The study used both descriptive and inferential statistics. The descriptive statistics were performed using counts, averages and variations. And the inferential statistics were performed using correlation and regression analysis. Outliers were also checked using trend analysis. Correlation

analysis checked on existence of the relations while regression analysis was utilized in expressing predictive model.

Multiple linear regression models used in the study was as follows

$Y_1 = \beta 0 + \beta_1 DR + \beta_2 LR + \beta_3 CTAR + \beta_4 CSR + \beta_5 CR + \beta_6 QR + \varepsilon$

Where;

Y_1 = Financial Performance (ROA)

DR = Dividend Ratio

LR = Leverage Ratio

CTAR = Cash Flow to Total Assets Ratio

CSR = Cash Flow to Sales Ratio

CR = Current Ratio

QR = Quick Ratio

ε = Error term.

3.7 Hypothesis Test

The study was guided by the three hypotheses below:

H_{01}: Working capital requirements does not significantly influence financial performance of the manufacturing companies trading at Nairobi Securities Exchange.

H_{02}: Cash flow ratio does not significantly influence financial performance of the manufacturing companies trading at Nairobi Securities Exchange.

H_{01}: Liquidity ratio does not significantly influence financial performance of the manufacturing companies trading at Nairobi Securities Exchange.

CHAPTER FOUR：DATA ANALYSIS

4.1 Introduction

The research sought to get insights on influence of working capital requirements on financial performance of the companies in manufacturing sector trading at Nairobi Securities Exchange; influence of cash flow ratios on financial performance of these companies; and influence of liquidity ratios on financial performance of these companies. Preliminary findings as well as hypotheses test results were presented in this chapter. Out of the nine firms manufacturing sector trading at Nairobi securities exchange, this study managed to collect data from eight firms. Data of Mumias sugar company Ltd was not available, thus the firm was excluded from the analysis.

4.2 Descriptive Analysis of Study Variables

The study variables were analyzed using descriptive measures, that is, mean, standard deviation, skewness and kurtosis. Ratio analysis is a method that involves calculating and interpreting financial ratios so as to monitor and analyze firm's performance. This study used return on assets, dividend ratio, leverage ratio, cashflow to total assets ratio, cashflow to sales ratio, current ratio and quick ratio.

Secondary data collected was subjected to trend analysis. This assisted in checking on the presence of outliers or extreme values. The trend analysis indicated that the data for the year 2012 were outliers, that is had small values as compared to the data for the period 2013 through 2021 across all the eight firms, thus was excluded from the analysis (Appendix II). Ratios were computed as follows: ROA = Net Income/Total Assets; Dividend Ratio = Dividend Paid/Net Income; Leverage = Debtors/Total Assets: Cashflow to Total Assets = Cash and Cash Equivalents/Total Assets; Cashflow to Sales = Cash and Cash Equivalents/Sales; Current Ratio =

Current Assets/Current Liabilities; Quick Ratio = (Current Assets – Inventory)/Current Liabilities. The findings are presented in Table 4.1.

On descriptive measures, the results indicated that dividend ratio had a mean of 0.515 with standard deviation of 1.606, leverage had a mean of 0.125 with standard deviation of 0.109, cashflow to total assets had a mean of 0.042 and standard deviation of 0.212, cashflow to sales had a mean of -3.183 with standard deviation of 14.028, current ration had a mean of 2.369 and standard deviation of 1.939, quick ratio had a mean of 1.866 with standard deviation of 1.973 and return on asset (ROA) had a mean of 0.029 with standard deviation of 0.341 respectively. The results further revealed that dividend ratio, leverage, current ratio and quick ratio were positively skewed while cashflow to total assets, cashflow to sales and return on assets were negatively skewed.

Table 4.1: Descriptive Measures

	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Std. Error
Dividend Ratio	.5150	1.60610	5.414	.283
Leverage Ratio	.1251	.10882	.748	.283
Cash flow to total assets	.0419	.21166	-3.369	.283
Cash flow to sales	-3.1825	14.02763	-4.233	.283
Current Ratio	2.3689	1.93854	2.297	.283
Quick Ratio	1.8661	1.97258	2.350	.283
ROA	.0286	.34106	-4.648	.283

4.3 Diagnostic Test

Diagnostics tests are the assumptions upon which linear regression analyses are anchored. The study tested the following assumptions; linearity, multicollinearity, normality, homogeneity and stationarity.

4.3.1 Test of Linearity

The study used scatter plots for assessment of linear relationship between the dependent variables and independent variables. The results of the assessments were shown in Figure 4.1 through Figure 4.6.

As shown in Figure 4.1, there was a weak positive correlation between return on assets and dividend ratio amongst the manufacturing firms listed at Nairobi security exchange. Thus, as dividend ratio increased return on assets increased marginally amongst the firms.

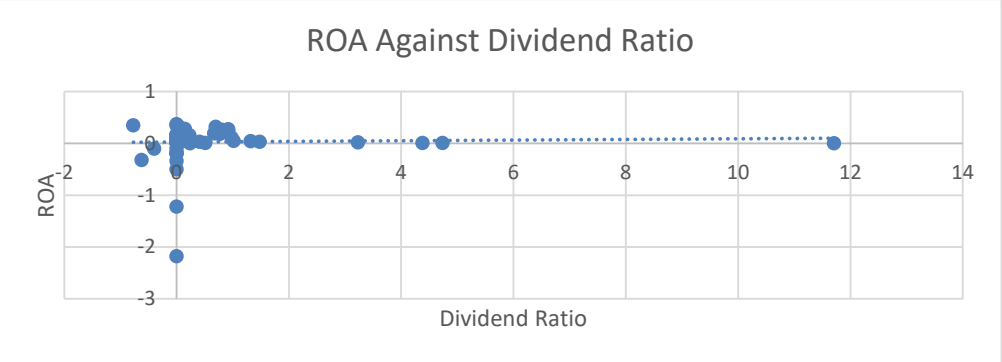

Figure 4.1: Correlation between ROA and Dividend Ratio

The results in Figure 4.2 indicated a negative correlation between leverage and return on assets. Thus, as leverage increased return on assets decreased amongst the firms.

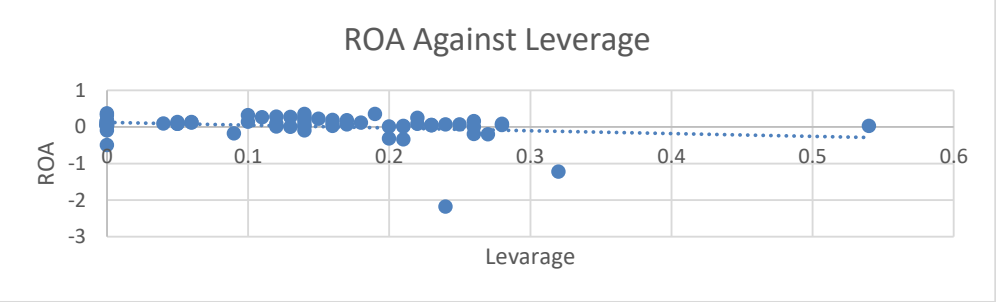

Figure 4.2: Correlation between ROA and Leverage

Figure 4.3 revealed a negative association between return on assets and cashflow to total assets ratio. Thus, as cashflow to total assets increased return on assets decreased amongst the firms.

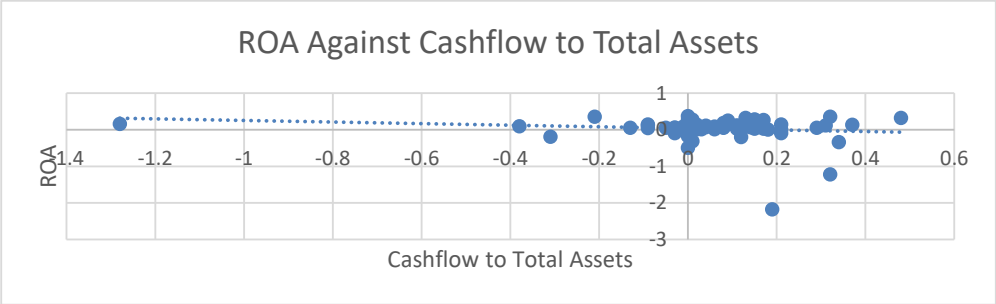

Figure 4.3: Correlation between ROA and Cashflow to Total Assets

Figure 4.4 revealed a weak inverse association between return on assets and cashflow to sales. Thus, as cashflow to sales increases return on assets decreases marginally amongst the firms.

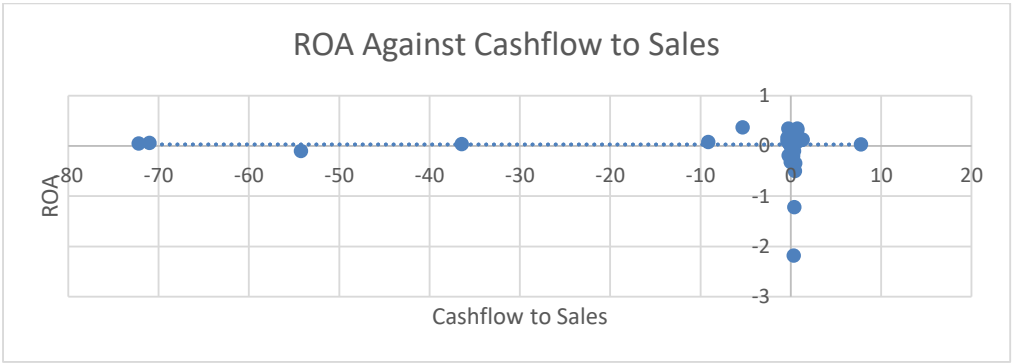

Figure 4.4: Correlation between ROA and Cashflow to sales

Figure 4.5 indicates that return on assets was positively related to current ratio. Thus, as current ratio increased return on assets increased amongst the firms.

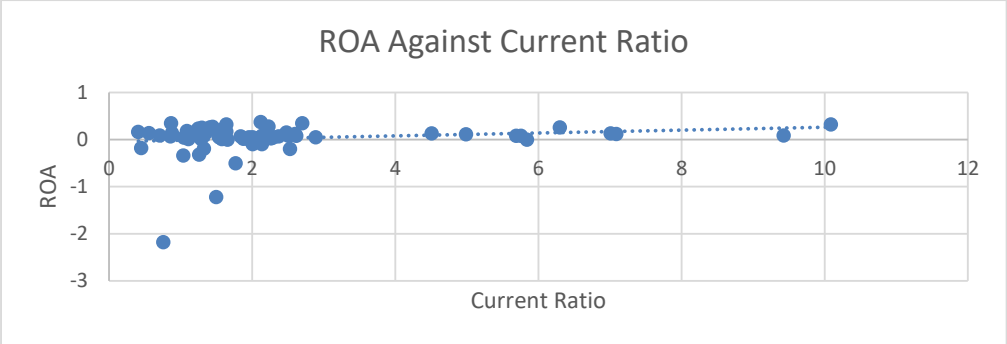

Figure 4.5: Correlation between ROA and Current Ratio

Figure 4.6 indicates that return on assets was positively associated with quick ratio. Thus, as quick ratio increased return on assets increased amongst the firms

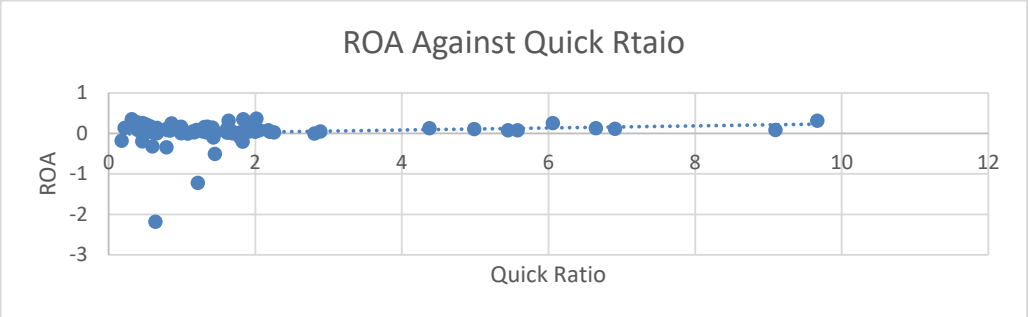

Figure 4.6: Correlation between ROA and Quick Ratio

4.3.2 Test of Multicollinearity

The study tested the presence of high correlation between independent variables. This test was important because presence of multicollinearity either over or under estimate the coefficients of the study variables. This test was based on tolerance and variance inflation factor. As a rule of thumb if tolerance>0.1 and variance inflation factor (VIF)<10., then no problem of multicollinearity exists. In such a situation all the predictor variables could be used in the model. However, if the reverse is the case,

then the specific variable should be dropped from the model or the data should be transformed. Table 4.2 presents the results of multicollinearity.

The findings revealed that all predictor variables had tolerance value greater than 0.1 and VIF<10. It therefore meant that the data did not suffer from multicollinearity problem, thus the assumption of multicollinearity was satisfied.

Table 4.2: Collinearity Diagnostic

Model		Collinearity Statistics	
		Tolerance	VIF
1	Dividend Ratio	.676	1.478
	Leverage	.750	1.333
	Cash flow to Total Assets	.862	1.160
	Cash flow to Sales	.900	1.111
	Current Ratio	.630	1.587
	Quick Ratio	.814	1.229

4.3.3 Normality Test

Normality test ascertain whether the data is distributed normally or not. The study used Shapiro wilks test for normality. Based on p-value, the distribution is assumed to be normal if p-value>0.05, otherwise asymmetrical. Results in Table 4.3 showed that variables dividend ratio (P =.057>0.05), leverage (P = .135>0.05), cashflow to total assets (P = .083>0.05), cashflow to sales (P = .065>0.05), current ratio (P = .201>0.05) and quick ratio (P = .195>0.05) and ROA (P = .408>0.05) were all normality distributed. The assumption of normality was satisfied.

Table 4.3: Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig
Dividend Ratio	0.942	50	0.057
Leverage	0.964	50	0.135
Cash flow to total assets	0.924	50	0.083
Cash flow to sales	0.941	50	0.065
Current ratio	0.995	50	0.201
Quick ratio	0.875	50	0.195
ROA	0.923	50	0.408

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

4.3.4 Homogeneity Test

Homogeneity test whether the error term between predictor and response variable is constant on not. The study used Levene test. The bench mark is that if p-value>0.05, then assume homoscedasticity (constant variance of error). Otherwise, if p-value<0.05 then assume heteroscedasticity (non-constant variance of errors). As indicated in Table 4.4 indicated that p-values for all the variables were greater than 0.05. It thus, confirmed that the variance of error between the response and predicator variable was constant. Hence the assumption of homoscedasticity was satisfied.

Table 4.4: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Dividend Ratio	1.6377	2	50	0.074
Leverage	2.0397	2	50	0.083
Cash flow to total assets	1.8597	2	50	0.068
Cash flow to sales	1.7347	2	50	0.062
Current ratio	1.6387	2	50	0.075
Quick ratio	1.7157	2	50	0.063

4.3.5 Stationarity Test

Using Augmented Dickey-Fuller (ADF) test, stationary test was based on the null hypothesis, that is, the series is non-stationary against the alternative hypothesis test, that is, the series is stationary. When the test statistic is lower than the critical value or p-value<0.05, the null hypothesis is rejected, and deduced that the time series is stationary. As indicated in Table 4.5, p-values for all the variables were less than 0.05, thus, the null hypothesis was rejected. This confirmed that the data for this study variables were stationary.

Table 4.5: Augmented Dickey-Fuller (ADF) Test

Variables	Test Statistic	Sig
Dividend Ratio	4.21859	0.0039
Leverage	4.42519	0.0008
Cash flow to total assets	3.20479	0.0348
Cash flow to sales	4.16979	0.0051
Current ratio	3.40379	0.0431
Quick ratio	4.19639	0.0028

4.4 Correlation Analysis

This research applied Pearson correlation analysis to determine the magnitude and association direction between working capital management and financial performance. Working capital management was operationalized in terms of working capital requirements (dividend ratio and leverage ratio), cash flow ratio (cash flow to total assets and cash flow to sales ratio) and liquidity ratio (current ratio and quick ratio).

The findings in Table 4.6 indicated that dividend ratio, current ratio and quick ratio were positively related to return on assets. However, leverage ratio, cashflow to sales ratio, and cashflow to total assets ratio were inversely correlated to return on assets.

Working capital ratios had a mixed result, that is, dividend ratio had positive correlation with return on assets while leverage ratio had negative correlation with return on assets. Cashflow ratios were all negatively correlated with return on assets. Liquidity ratio had a direct correlation with return on assets.

Table 4.6: Correlations

		Dividend Ratio	Leverage	Cash flow to total assets	Cash flow to sales	Current ratio	Quick ratio	ROA)
Dividend Ratio	Pearson Correlation	1						
	Sig. (2-tailed)							
Leverage	Pearson Correlation	.036	1					
	Sig. (2-tailed)	.764						
Cash flow to total assets	Pearson Correlation	.071	-.061	1				
	Sig. (2-tailed)	.556	.613					
Cash flow to sales	Pearson Correlation	.075	.278*	.103	1			
	Sig. (2-tailed)	.530	.018	.388				
Current ratio	Pearson Correlation	.151	-.186	.351**	.040	1		
	Sig. (2-tailed)	.206	.117	.003	.739			
Quick ratio	Pearson Correlation	.030	-.260*	.327**	.017	.975**	1	
	Sig. (2-tailed)	.803	.027	.005	.890	.000		
ROA)	Pearson Correlation	.030	-.244*	-.134	-.001	.174	.149	1
	Sig. (2-tailed)	.805	.039	.262	.995	.145	.212	

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

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

4.5 Relationship between Working Capital Management and Financial Performance

Inferential statistics was used to analyze hypothesized association, that is, goodness of fit, overall significance and individual significance. The study established explanatory power of the predictive model through R^2, overall significance of the model through analysis of variance (ANOVA), and individual significance through T test. The results were used to test the stated hypotheses.

4.5.1 Goodness of Fit

Goodness of fit is a percentage measure of the variation in the response variable being accounted for by the changes in the predictor variables. The results in Table 4.7 showed that $R^2 = 0.178$. This meant that 17.8 percent of the variation of return on assets (ROA) were accounted for by changes in working capital requirements (dividend ratio and leverage ratio), cash flow ratios (Cash flow to total assets ratio and Cash flow to sales ratio) and liquidity ratios (current ratio and quick ratio). The remaining 82.2 percent was explained by the other variables outside the regression model. The study further revealed a positive moderate (coefficient of correlation = 0.422) association between working capital management and return on assets. The standard error of 0.323 showed that the regression model was good for forecasting return on assets (ROA).

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df 1	df 2	Sig. F Change
1	.422[a]	.178	.102	.32320	.178	2.344	6	65	.041

a. Predictors: (Constant), Quick ratio, Cash flow to sales, Dividend Ratio, Cash flow to total assets, Leverage, Current ratio

4.5.2 Overall Significance of The Model

Overall significance of the model test whether all independent variables collectively significantly influenced dependent variable. Analysis of variance (ANOVA) test was used for overall significance for the study. As indicated in Table 4.8, (F = 2.344>2.17, P-Value = 0.041<0.05), the model was significant in overall. This means that collectively working capital requirements (dividend ratio and leverage), cash flow ratios (cash flow to total assets and cash flow to sales) and liquidity ratio (current ratio and quick ratio) statistically significantly influence return on assets (ROA) amongst the manufacturing firms listed at Nairobi Security Exchange.

Table 4.8: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.469	6	.245	2.344	.041[b]
	Residual	6.790	65	.104		
	Total	8.259	71			

a. Dependent Variable: ROA)

b. Predictors: (Constant), Quick ratio, Cash flow to sales ratio, Dividend Ratio, Cash flow to total assets ratio, Leverage ratio, Current ratio

4.5.3 Individual Significance

Individual significance of the model tests whether independent variables respectively significantly influence dependent variable. If P-value<0.05, then the independent variables individually significantly influence the dependent variable and should be included in the model otherwise the variable should be propped from the model. The predictive model was obtained by using unstandardized coefficients.

Table 4.9: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.053	.024		2.208	.030
	Dividend Ratio	-.229	.106	-.215	-2.160	.034
	Leverage Ratio	-1.082	.407	-.345	-2.658	.010
	Cash flow to total assets Ratio	-.404	.195	-.251	-2.068	.043
	Cash flow to sales Ratio	.102	.043	.093	2.372	.020
	Current ratio	.265	.115	1.507	2.302	.025
	Quick ratio	-.229	.113	-1.327	-2.029	.047

a. Dependent Variable: ROA

As shown in Table 4.9; dividend ratio (β = -.229, t = -2.160<-1.965,P=0.034<0.05) was significant, leverage ratio (β = -1.082, t =-2.650<-1.965, P=0.01<0.05) was significant, cash flow to total assets ratio (β = -.404, t =-2.068<-1.965, P=0.043<0.05) was significant, cashflow to sales ratio (β = .102, t =2.372>1.965, P=0.02<0.05) was significant, current ratio (β = .265, t = 2.302>1.965, P=0.025<0.05) was significant and quick ratio (β = -.229, t =-2.029<-1.965, P=0.047<0.05) was significant.

It therefore meant that the independent variables were individually statistically significant. The further showed that return on assets (ROA) could be predicted using working capital requirements (dividend ratio and leverage ratio), cash flow ratio (cash flow to total assets ratio and cash flow to sales ratio) and liquidity ratio (current ratio and quick ratio). The predictive model was of the form:

ROA = 0.053 – 0.229DR - 1.082LR - 0.404 CTAR + 0.102CSR + 0.265CR – 0.229QR

Where;

ROA = Return on Assets

DR = Dividend Ratio

LR = Leverage Ratio

CTAR = Cash flow to Total Assets Ratio

CSR = Cash flow to Sales Ratio

CR = Current Ratio

QR = Quick Ratio

The study further reveled that in terms of elasticity;

β_1 = - 0.229; for every one unit increased in dividend ratio, return on assets decreased by 0.229 units holding other variables constant.

β_2 = - 1.082; for every one unit increased in leverage ratio, return on assets decreased by 1.082 units holding other variables constant

β_3 = - 0.404; for every one unit increased in cashflow to total assets ratio, return on assets decreased by 0.404 units holding other variables constant

β_4 = 0.102; for every one unit increased in cashflow to sales ratio, return on assets increased by 0.102 units holding other variables constant

β_5 = 0.265; for every one unit increased in current ratio, return on assets increased by 0.265 units holding other variables constant

β_6 = -0.229; for every one unit increased in quick ratio, return on assets decreased by 0.229 units holding other variables constant.

4.5.4 Hypothesis Test

The study formulated and tested the three hypotheses below:

H_{01}: Working capital requirements does not significantly influence financial performance of the manufacturing firms listed at Nairobi Securities Exchange

In this hypothesis the results indicated that working capital management was significant (dividend ratio: P-value = .034<0.05, and leverage ratio: P-value = .01<0.05). Hence the hypothesis was rejected. The results are supported by those of Kioko (2020), who revealed that profitability and leverage were positively and significantly related. The results further supported Baños-Caballero et al. (2014) who opined that working capital requirement in line with funding performance association varies in a period of financial crisis.

H_{02}: Cash flow ratio does not significantly influence financial performance of the manufacturing firms listed at Nairobi Securities Exchange

In this hypothesis the results indicated that cashflow ratio was significant (Cash flow to total assets ratio: P-value = .043<0.05, and Cash flow to sales ratio: P-value = .002<0.05). Hence the hypothesis was rejected. The findings of the study supported those of Laitinen (1999) who posited that cash, income and balance sheet computed ratio generates other grouping structures in forecasting of failures. The study findings emphasis on cash flow requirements which states the average monthly cash flow based on the residual interest calculated over twelve calendar months is equal to or greater than 3.5% of the total unpaid notes' principal balance less the cash collateral account balance as of the day of payment. The findings conform to those of Purwanti, Masitoh W and Chomsatu (2015) who concluded that cash flow involvement has a significant effect on stock returns.

H_{03}: Liquidity ratio does not significantly influence financial performance of the manufacturing firms listed at Nairobi Securities Exchange

In this hypothesis the results indicated that liquidity ratio was significant (current ratio: P-value = .025<0.05, and quick ratio: P-value = .047<0.05). Hence the

hypothesis was rejected. The result supported those of Priya and Nimalathasan (2013), who researched the effects of liquidity management on profitability of manufacturing firms trading at Sri Lanka stock exchange and confirmed influence of current ratio and cash ratio on return on assets. The results confirm to Horne and Wachowicz, (2000) who posited that working capital management proficiency is important specifically in manufacturing organizations, where significant volume of asset is made up of short-term assets. Findings also support those of Khaldun (2014) in research of the effects of profitability and liquidity ratios on profit growth of the firms in manufacturing sector amongst food and beverages firms trading at Indonesia stock exchange and revealed weak but significant influence of current, quick and cash ratios on gross profit margins. The findings conform to those of Zygmunt (2013) who established that liquidity ratio significantly influences profitability amongst Polish information technology firms. The findings contradicted those of Kangangi (2020) who found out that inventory management practices insignificantly positively influence SMEs growth in Nyeri County.

CHAPTER FIVE：SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter embraced a summary of findings of the study, conclusions of the study, recommendations for management as well as suggestions for future research. And limitations were also discussed. The findings' summary captured the association of the firms' working capital management and financial performance in manufacturing sector trading at Nairobi Securities Exchange. Conclusions are based on the findings and discussion of the same. According to what was revealed through the study, recommendations and suggestions were proposed.

5.2 Summary of Findings

Working capital is used by firms to generate future returns for stakeholders of a firm. It is therefore a key performance indicator for any firm which needs to remain competitive in the market. The study measured working capital management in terms of working capital requirements, cashflow ratio and liquidity ratio. Improper management of working capital can cost a firm investment opportunity while proper management of the same gives a firm competitive advantage.

This research found that working capital management had significant influence on financial performance of the companies in manufacturing sector. More specific for the firms listed at Nairobi Security Exchange, dividend ratio, leverage ratio, cashflow to total assets ratio and quick ratio negatively significantly impacted on financial performance while cashflow to sales and current ratio positively significantly impacted on financial performance.

5.3 Conclusions

Based on these results found by this research, the research concluded that working capital management had significant influence on financial performance of the companies in manufacturing sector trading at Nairobi Securities Exchange. Hence, firms should put more emphasis on working capital management. Moreover, the companies in this industry should be able to enhance their financial performance through appropriately managing their working capital.

As found, this study also concluded that working capital management was important to financial performance, because working capital requirements, cashflow ratios and liquidity ratios significantly influenced return on assets. As explained by analysis of variance, 17.8% changes of return on assets were determined by the 6 ratios of this research. In order to improve financial performance of the companies in manufacturing sector trading at Nairobi Securities Exchange, day to day working capital management should be carried out appropriately.

From the analysis of association between the 6 independent variable ratios and return on assets in the model, the research found that working capital management affected financial performance in diverse ways. Dividend ratio, leverage ratio, cashflow to total assets ratio and quick ratio negatively significantly impacted on financial performance while cashflow to sales and current ratio positively significantly impacted on financial performance.

5.4 Recommendations

This research recommended that the firms in manufacturing sector trading at Nairobi Security Exchange should be able to have a good working capital management policy since there was a significant impact on their performance. The study further recommended that firms must look at each component of working capital management, that is, working capital requirements, cashflow ratios and liquidity ratios since they both collective and individual impact on financial performance.

It was further recommended that for manufacturing firms to maintain proper liquidity, they must manage their current ratio. This would help them pay out their short-term obligations as and when they fall due. However, the bigger picture of shareholder wealth maximization should not be sacrificed. This can be achieved by maintaining good return on assets ratios.

It was also recommended that for manufacturing firms, they should pay more attention on their ability of generating cashflow from their core business activities. For manufacturing firms, their output was sold to generate income in the market place. For improving financial performance, cashflow to sales ratio should be maintained appropriately.

5.5 Limitations of the Study

This research was limited to the entities in manufacturing sector trading at Nairobi Securities Exchange in terms of scope. It was further limited to the nature of data collected, that is secondary data for a ten-year period ranging from 2012 to 2021. Due to the nature of data in the year 2012, which was composed of outlier values, the study was further limited to the data for the period 2013 through 2021. Since the study only focused on manufacturing firms, it would be not be appropriate to generalize the findings to other sectors in the Kenyan economy. Finally, out of the nine firms earmarked for data collection one firm's data was not available and therefore the conclusions did not cover the entire manufacturing sector.

5.6 Suggestion for Future Research

This research suggested that the same topic could be conducted in other sectors of the economy for further research and the results could be compared for the purpose of generalization. Future study could extend the time span of data. And further primary data on the same variables could be collected using structured questionnaire. Similar study can be replicated in the manufacturing sector by changing

operationalization of firms' working capital management as well as financial performance.

This research revealed the association between the 6 variables (dividend ratio, leverage ratio, cashflow to total assets ratio, cashflow to sales ratio, quick ratio and current ratio) and return on assets (ROA). However, there are still various indicators of firms' working capital management as well as financial performance. Similar study can involve more indicators to test the relationships.

The firms that were involved in this research were all listed at Nairobi Securities Ex change. However, in Kenya a large number of the small and medium-sized enterprises were not listed among them. Future research can expand the scope of sampling and include more firms in manufacturing industry.

REFERENCES

Adam Smith (1776). Wealth of the nation. *Journal of Political Economy.* 35, 153-197.

Ajanthan, A. (2013). Nexus between liquidity and profitability: A study of trading companies in Sri Lanka. *European Journal of Business and Management*, *6*(7), 47-63.

Akter, A., Mahmud, K. (2014). Liquidity-profitability relationship in Bangladesh banking industry. *International Journal of Empirical Finance*, *2*(4), 112-134.

Akoto, R.K., Awunyo-Vitor, D., & Angmor, P.L. (2013). Working Capital Management and profitability: Evidence from Ghanaian listed manufacturing firms. *Journal of Economics and International Finance*, *5*(9), 373-379.

Ali, O.N., & Ali, T.R. (2013). "Working Capital Management and Profitability". *A Sensitivity Analysis.* ISSN (print): *2* (1), 2319-5479.

Alshubiri, F.N. (2011). The Effect of Working Capital Practices on Risk Management: Evidence from Jordan. *Global Journal of Business Research*, *5*(1), 39-54.

Amarjit G., Nahum B., Neil M. (2010). The Relationship between Working Capital Management and Profitability: Evidence from the United States, *Business and Economics Journal*, Volume 2010: BEJ-10, 1-9.

Angahar, P., Agbo, A. (2014). Impact of working capital on the profitability of the Nigerian cement industry. *European Journal of Accounting Auditing and Finance Research*, 2, No.7, 17-30.

Armour. J, Enriques. L, Hansmann. H, Kraakman. R. (2017). The Basic Governance Structure: The Interests of Shareholders as a Class. *European Corporate Governance.*

Ashraf C K. (2012). The relationship between working capital efficiency and profitability, *Journal of accounting and management*, 2, Iss. 3, 4549.

Atrill P (2006). *Financial management for decision makers* (4th Ed). Prentice Hall.

Aziz. A., And G. Lawson (1989). Cash Flow Reporting and Financial Distress Models: Testing Hypothesis. *Financial Management Spring*. 55- 63.

Babbie, E. R. (2012). *The Practice of Social Research* (13th Ed). Boston, MA: Cengage Learning.

Ball, R., & Foster, G. (1982). Corporate financial reporting: A methodological review of empirical research. *Journal of Accounting Research*, *20*, 161–234.

Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working Capital Management, corporate performance, and financial constraints. *Journal of Business Research*, *67*, 332–338.

Barney, J.B. (2018).Why resource-based theory's model of profit appropriation must incorporate a stakeholder perspective. *Strategic Management Journal*. 39, 3305-3325.

Beaver, W. (1966). Financial ratios as predictors of failure. *Journal of Accounting Research 5*: 71-111.

Bibow, J. (2005). Liquidity Preference Theory Revisited - to Ditch or to Build on it? *The Levy Economics Institute of Bard College Working Paper No. 427*.

Blum, M. (1974). Failing company discriminant analysis. *Journal of Accounting Research 12*(1): 1-25.

Bolek, Monika & Rafal Wolski (2012). Profitability or Liquidity: Influencing the Market Value the Case of Poland, *International Journal of Economics and Finance*, 4, Iss. 9, 182-190.

Capital Markets Authority (2020). Guidelines on Corporate Governance in public listed Companies in Kenya. Kenya Gazette Notice No. 369, 122 - 128. *Companies Act Chapter 486, Laws of Kenya.*

Chathoth. P. Olsen. M. (2002). Organizational Leadership and Strategy in the Hospitality Industry. *Journal of Service Research*, *2* (1): p. 5–29.

Chemis, K, P. (2015). Effects of Working Capital Management on Profitability of Sugar Manufacturing Firms in Kenya. *Unpublished MBA Thesis of University of Nairobi*

Coltman, M. M., & Jagels, M. G. (2001). *Hospitality management accounting*, 7th ed. New York: Wiley.

Conner, K. (1991). A Historical Comparison of Resource-Based Theory and Five Schools of Thought within Industrial Organization Economics: Do We Have a New Theory of the Firm? *Journal of Management*, *17*, 121-154.

Cooper, D. R., & S. Schindler, P. (2008). *Business Research Methods* (10th ed.). Boston: McGraw-Hill International Edition.

Conner, K.R. and Prahalad, C.K. (1996). A Resource-Based Theory of the Firm: Knowledge vs. Opportunism. *Organization Science*, *7*, 477-501.

Dancan O. Othuon (2021). Working Capital Management impacts on small-scale coffee wet mills' financial performance in eastern Kenya. *Journal of*

DeFranco & Schmidgall (1998). Cash flow practices and procedures in the lodging industry. *Journal of Hospitality and Tourism Research,* 22 (1), 72-83

Dollinger, M. J. (1999). *Entrepreneurship: strategies and resource.* New Jersey: Prentice Hall.

Enyi, E. P. (2011). Corporate solvency management: How effective are contemporary tools? *International Journal of Research in Commerce*, *1*(3), 20-25.

Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An Empirical Investigation in an Emerging Market. *International Journal of Commerce and Management*, *14*(2), 48-61.

Elton, E.J., and Gruber, M.J. (1997). Modern Portfolio Theory, 1950 to date. *Journal of Banking and Finance*, *21*, 1743-1759.

Fadler. M, Legner. C, (2021). *Toward big data and analytics governance: redefining structural governance mechanisms*. Faculty of Business and Economics, University of Lausanne.

FASB (1981). A cash Flow Approach to The Statement of Changes in Financial Position. *Journal of Accounting Education*. 4, No 2, 97-106.

Filbeck, G., & Krueger, T. (2005). Industry related differences in Working Capital Management. *Journal of Business*, *20*(2), 11-18.

Geng, Z., Tan, L., Gao, X., Ma, Y., Feng, L., & Zhu, J. (2011). Financial distress prediction models of listed companies by using non-financial determinants in

Bayesian criterion. In Proceedings of the international conference on management and service science, Wuhan, China.

Ghosh, S.K. & Maji, S.G. (2004). Working Capital Management efficiency: a study on the Indian cement industry. The Institute of Cost and Works Accountants of India.

Giacomino. D.E. & Mielke, D.E. (1988). Using the Statement of Cash Flow to Analyze Corporate Performance. *Management of Accounting*, May. Pp. 54-57.

Gibson, C. (2009). *Financial Reporting and Analysis*. Mason, OH, México: Cengage

Hayajneh, O.C., & Yassine F.L.A. (2011). The impact of working capital efficiency on profitability-an Empirical analysis on Jordanian manufacturing firms, *international research journal of finance and economics*, *66*, 67-76.

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

Hoskisson, R. E., Johnson, R. A., & Moesel, D. D. (1994). Corporate divestiture intensity in restructuring firms: Effects of governance, strategy, and performance. *Academy of Management Journal*, *37*(5), 1207-1251.

Jensen, M Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.

Kargar, J., & Blumenthal, R. A. (1994). Leverage impact of working capital in small businesses. *TMA Journal*, *14*(6), 46-53.

Kaur, J. (2010). Working Capital Management in Indian tyre industry. *International Journal of Economics and Finance*, *46*, 7-15.

Kenya national bureau of statistics (2021). *Economic survey 2021*. Retrieved from https://www.knbs.or.ke/wp-content/uploads/2021/09/Economic-Survey-2021.pdf.

Keynes, J, M. (1930). Keynes's theory of liquidity preference and his debt management and monetary policies. *Cambridge Journal of Economics*, 30, No. 5.

Keynes, J, M. (1936). The General Theory of Employment, Interest, and Money. *The Canadian Journal of Economics and Political Science.* 13, 372-378.

Khaldun, K. (2014). The influence of profitability and liquidity ratios on the growth of profit of manufacturing companies' study of food and beverages sector companies listed on, Indonesia stock exchange (period 2010-2012). *International Journal of Economics, Commerce and Management, 2*(12), 1-17.

Kibet, B, Kibet, L., Tenai, J. & Mutwol, M. (2011). The Determinants of Leverage at the Nairobi Stock Exchange, Kenya. The Second Asian Business and Management Conference 2011 Osaka, Japan.

Kieschnick, R., Laplante, M. and Moussawi, R. (2013). "Working Capital Management and shareholders' wealth", *Review of Finance*, 17 No. 5, 1827-1852.

Kinuu, D., Murgor, P., Ongeti, W.J., Letting, N.K., & Aosa, E. (2012). Upper echelons theory and research: A review of theory and empirical literature 28 years later. *Prime Journal of Business Administration and Management*, *2*(10), 697-703.

Kioko Collins (2020). The Effect of Working Capital Management on Profitability of Cement Manufacturing Companies in Kenya. *IOSR Journal of Economics and Finance, 6*(6):53-61.

Kombo, D. K.& Tromp, L.A. (2006). Proposal and Thesis Writing: An Introduction Nairobi: Paulines Publication Africa.

Laitinen T., Kankaanpää M. (1999). Comparative analysis of failure prediction methods: the Finnish case. *The European Accounting Review*, *8*(1), 67-92.

Lartey, V., Antwi, S. Boadi, E. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science*, *4*(3), 12-34.

Lebans, M. & Euske, K. (2006). *A Conceptual and Operational Delineation of Performance. Business Performance Measurement.* Cambridge: Cambridge University Press.

Lucy Kirigo Kangangi (2020). Working Capital Management Practices and Growth Of Small And Medium-Sized Enterprises In Nyeri County, Kenya. *Unpublished MBA Thesis of Kenyatta University.*

Machuki, V. N. & Aosa, E. (2011). The Influence of external environment on the performance of publicly quoted companies in Kenya. *Business Administration and Management Journal, 1*(7), 205-2018.

Madushanka K. H. I. & M. Jathurika (2018). The Impact of Liquidity Ratios on Profitability, *International Research Journal of Advanced Engineering and Science*, 3, Iss. 4, 157-161.

Markowitz, H.M. (1952). Portfolio Selection. *Journal of Finance*, *7* (1), 77-91.

Markowitz, H.M. (1959). Portfolio Selection: Efficient Diversification of Investments, (Wiley: New York).

Markowitz, H.M. (1959). Foundations of Portfolio Theory. *The Journal of Finance*. 46, No. 2, 469-477

Mehta, A. (2014). "Working Capital Management and profitability relationship-evidences from emerging markets of UAE", *International Journal of Management Excellence*, 2 No. 3, 195-202.

Mills, J. R., & Yamamura, J. H. (1998). The power of cash flow ratios. *Journal of Accountancy*, *186* (4), 53-62.

Mose A. N (2016). Effect of Cash Management Practices on Financial Performance of Insurance Firms in Kenya. *Unpublished MBA Thesis of Kenyatta University.*

Mugenda, O. & Mugenda, A. (2003). *Research Methods: Quantitative and Qualitative Approaches*, Acts Press, Nairobi.

Mukhopadhyay, D. (2004). Working Capital Management in Heavy Engineering Firms—A Case Study. Accessed from myicwai.com/knowledge bank/fm48.

Mwangi Patriciah Waithira (2016). The Effect of Working Capital Management On The Financial Performance Of Water Service Providers In Kenya. *Unpublished MBA Thesis of University of Nairobi.*

Nduta, E, N. (2015). The effect of Working Capital Management on profitability of manufacturing companies listed at Nairobi Securities Exchange. *Unpublished MBA Thesis of University of Nairobi.*

Orodho, A. J. (2011). *Essentials of Educational and Social Sciences Research Method*. Nairobi: Masola Publishers.

Osundina J, A. (2014). Working Capital Management And Profitability Of Selected Quoted Food And Beverages Manufacturing Firms In Nigeria. *European Journal of Accounting Auditing and Finance Research*, 2, No.3, 10-21

Padachi, K. (2006). Trends in Working Capital Management and its impact on firms' performance: An analysis of Mauritian small manufacturing firms'. *International review of business research papers, 2*, 45-58.

Panigrahi. A.K. (2014). Relationship of working capital with liquidity, Profitability and solvency: A case study of ACC limited, *Asian Journal of Management Research*, 4, Iss.2, 208-322.

Pestonji, C. and Wichitsathian, S. (2019). The impacts of working capital policy on firms' performances: an empirical study on Thai listed companies in production sector. *Asia-Pacific Contemporary Finance and Development*, Emerald Publishing Limited, 39-51.

Priya, K., Nimalathasan, B. (2013). Liquidity management and profitability: A case study of listed manufacturing companies in Sri Lanka. *International Journal of Technological Exploration and Learning*, *2*(4), 135-151.

Purwanti, Sri., Endang Masitoh W dan Yuli Chomsatu (2015). "Pengaruh Laba Akuntansi dan Arus Kas Terhadap Return Saham Perusahaan yang Listing di BEI". *Jurnal Akuntansi dan Pajak*. UNIBA Surakarta. 16 No.01

Raheman, A. & Nasr, M. (2007). Working Capital Management and profitability. A case study of Pakistani firms. *International review of Business research papers*, *3*(2) 275-296.

Ramachandran & Janakiraman (2007). The Relationship between Working Capital Management Efficiency and EBIT. *Managing Global Transitions*, *7*(1):61-74

Ricardo, R., & Wade, D. (2001). *Corporate performance management: how to build a better organization through measurement driven strategies alignment.* Butterworth, Heinemann.

Ruziqa, A. (2013). The impact of credit and liquidity risk on bank financial performance: The case of Indonesian conventional bank with total asset above 10 trillion Rupiah. *International Journal of Economic Policy in Emerging Economies*, *6*(2), 93-106.

Singh, K., & Asress, F. C. (2015). "Determining working capital solvency level and its effect on profitability in selected Indian manufacturing firms". *International Journal of Research in Commerce*, Economics & Management.

Shin, H. H., & Soenen, L. (1998). Efficiency of Working Capital Management and corporate profitability. *Financial Practice and Education*, *8*(2), 37-45.

Shinzato, Takashi (2018). Maximizing and minimizing investment concentration with constraints of budget and investment risk. *Physica A: Statistical Mechanics and its Applications*, *490*, 986–993.

Songling. Y, Ishtiaq. M, Med. A. (2018). Enterprise Risk Management Practices and Firm Performance, the Mediating Role of Competitive Advantage and the Moderating Role of Financial Literacy. *Journal of Risk financial management.*

Sukharev, Oleg Sergeevich (2019). The restructuring of the investment portfolio: The risk and effect of the emergence of new combinations. *Quantitative Finance and Economics*, *3*, 390–411.

The National Treasury and Planning (2018). *Third Medium Term Plan 2018 – 2022*(Government of the Republic of Kenya). Retrieved from http://vision2030.go.ke/wp-content/uploads/2019/01/THIRD-MEDIUM-TERM-PLAN-2018-2022.pdf.

Tobias Olweny (2014). Effect of Working Capital Management on performance of Firms Listed at the Nairobi Securities Exchange. *Research Journal of Business* Management*,* 1-11.

Uwalomwa, A.W. (2013). Impact of Cash Management on the Profitability of Insurance Firms In Nigeria, The Empirical Evidence. *Journal of Finance, 12, 114-147.*

Wahogo (2014). The relationship between Working Capital Management and Financial Performance of Firms in the Agricultural Sector: The Case of Firms in the Coffee Industry in Kenya. *Journal of international development*, 35-40.

Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5, 171-180.

Zygmunt, J. (2013). Does Liquidity Impact on Profitability? Conference of Informatics and Management Sciences.

APPENDICES

Appendix I: Manufacturing and Allied Firms Listed at Nairobi Securities Exchange

Number	Name of firm
1	B.O.C Kenya Plc.
2	British American Tobacco Kenya Plc.
3	Carbacid Investments Plc.
4	East African Breweries Ltd.
5	Mumias Sugar Co. Ltd
6	Unga Group Ltd.
7	Kenya Orchards Ltd.
8	Flame Tree Group Holdings Ltd
9	Eveready East Africa Ltd

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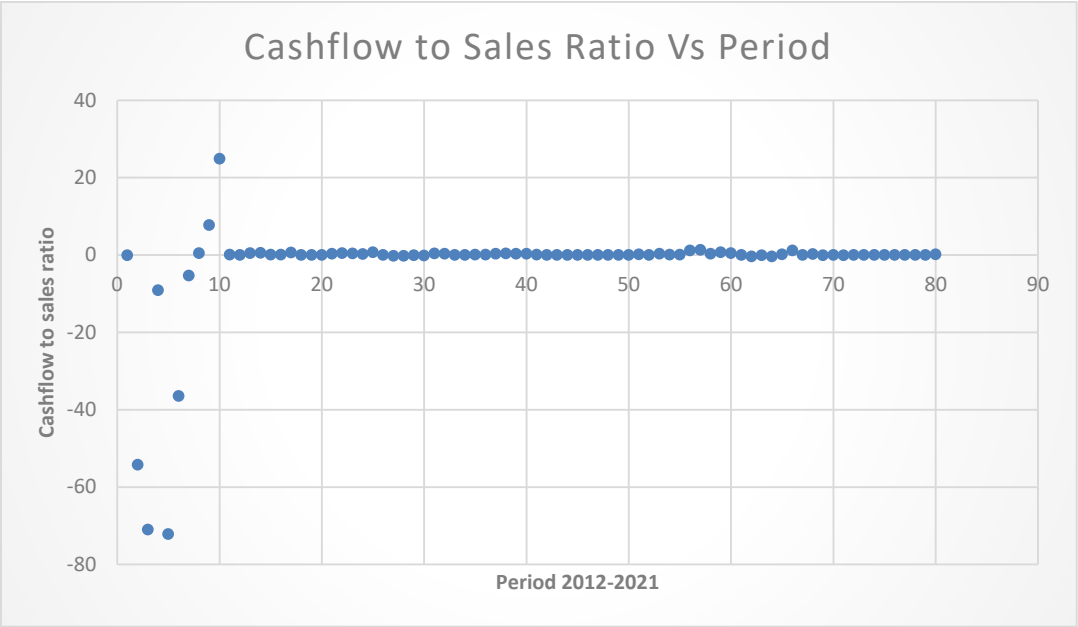
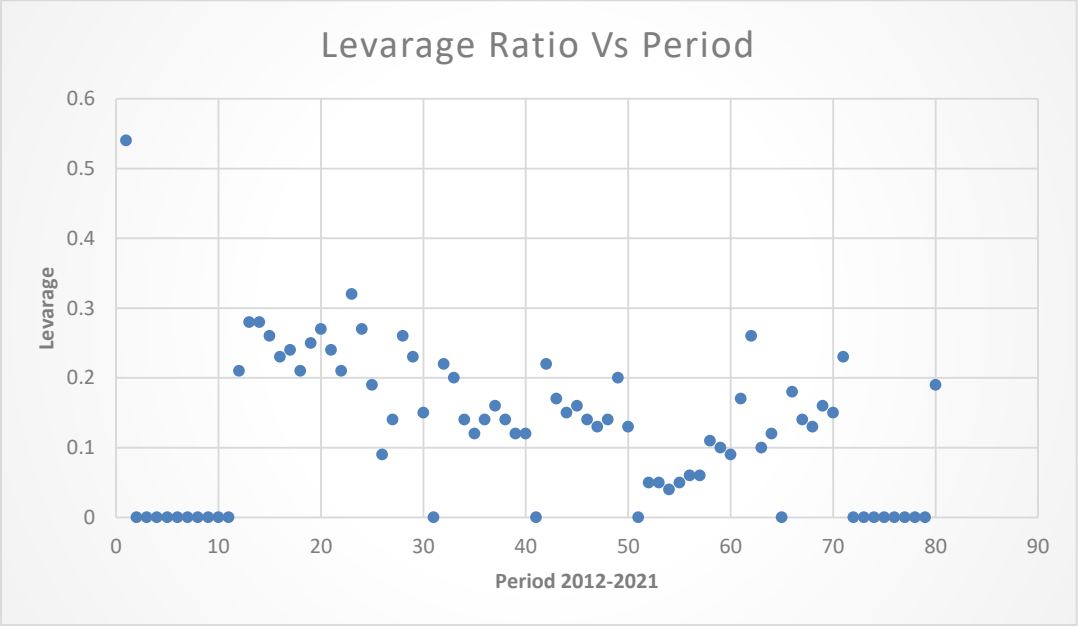
Appendix II: Trend analysis





Appendix III: Data sheet

COMPANY	INDICATORS	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
KENYA ORCHARD	Sales	49,404,560	56,985.734	60,009.821	72,239.217	73,691.426	64,586.481	60,974.312	58,062.204	47,090.526	29,684.494
	inventory	29,391,175	27500.737	21386.871	15591.077	2739.598	1133.538	1554.069	5305	6922.989	9195.747
	debtors	67,939,689	66446.828	71440.161	55991.537	59560.537	45444.309	32165.81	23864.376	15523.652	11748.47
	Dividend paid	0.00	55,000.00	55,000.00	55,000.00	55,000.00	55,000.00	55,000.00	55,000.00	55,000.00	55,000.00
	Cash and cash equivalents	-3,916,226.00	-3,089,998.00	-4,260,214.00	-660,588.00	-5,320,411.00	-2,352,993.00	-323,640.00	27,997.00	365,718.00	738113
	Current assets	97,722,864.00	94,339,565.00	93,219,032.00	71,974,614.00	62,692,135.00	46,969,847.00	34,111,879.00	29,197,374.00	22,812,359.00	21682330
	Current Liabilities	46,961,894.00	46,859,176.00	42,847,267.00	27,442,772.00	31,272,615.00	20,883,048.00	16,110,104.00	16,460,677.00	11,843,923.00	12543235
	Total Assets	126,949,558.00	124,246,481.00	136,003,554.00	114,565,709.00	108,278,261.00	89,241,627.00	78,731,223.00	50,202,177.00	70,597,300.00	68936272
	Net income	3,690,357.00	-12,541,048.00	8,433,924.00	8,886,114.00	5,734,649.00	3,763,108.00	28,915,648.00	-25,261,547.00	2,415,340.00	244957
UNGA GROUP	Sales	17,812,838.00	18,260,544	1,789,567	1,998,207	19,528,785	18,947,944	1,872,325	17,002,302	15,142,017	15,976,763
	inventory		4615753	2752081	2689813	2321807	2562374	2190111	2396262	3172479	2115489
	debtors		2540018	3017093	2813438	2440699	2072418	2028388	1717828	1999052	1748593
	Dividend paid	0.00	37,853.00	75,707.00	75,707.00	116,472.00	116,472.00	87,354.00	102,054.00	108,914.00	87354
	Cash and cash equivalents	1,521,050	661,486.00	841,338.00	1,088,455.00	1,714,755.00	1,102,359.00	1,192,705.00	846,767.00	619,076.00	364591
	Current assets	6,046,775	7,912,949.00	6,676,636.00	6,595,822.00	6,599,371.00	5,819,762.00	5,452,719.00	4,934,209.00	5,820,205.00	4640963
	Current Liabilities	2,676,291	5,018,383.00	3,407,821.00	3,079,519.00	3,980,544.00	2,531,888.00	2,302,165.00	2,172,393.00	3,166,864.00	1967953
	Total Assets	10,048,779	12,050,876.00	10,646,066.00	9,932,664.00	9,455,316.00	9,199,783.00	8,635,129.00	8,026,578.00	8,108,379.00	6410259
	Net income	293,477	73,597.00	522,042.00	774,337.00	-6,055.00	494,581.00	611,885.00	249,560.00	563,199.00	331621
EVEREADY	Sales	89,816	133,590	190,667	251,720	338,931	553,311	1,124,582	1,216,580	1,428,278	1,374,789
	inventory	18,859	38,055	36,014	88,851	182,798	161,997	355,720	502,405	446,584	592,597
	debtors	38,040	42,044	80,554	155,161	149,235	94,805	184,855	242,391	214,730	176,710
	Dividend paid	0.00	0.00	0.00	0.00	-210,000.00	0.00	0.00	0.00	0.00	0

	Cash and cash equivalents	29,444	67,621.00	78,189.00	68,566.00	245,827.00	-731.00	-285,519.00	-285,845.00	-126,114.00	-175606
	Current assets	116,343	157,949.00	194,757.00	322,266.00	577,860.00	266,553.00	558,694.00	763,357.00	683,971.00	876043
	Current Liabilities	152,196	151,926.00	129,678.00	127,254.00	214,435.00	587,381.00	642,459.00	572,291.00	444,019.00	695764
	Total Assets	159,193.00	201,085.00	248,526.00	573,768.00	772,652.00	1,082,806.00	1,333,795.00	930,057.00	941,797.00	1150729
	Net income	-346,910	-69,010.00	-303,544.00	-111,703.00	272,792.00	-195,911.00	464,024.00	-177,453.00	45,092.00	70084
	Sales	1,381,768.00	1,098,104	975,863	966,543	967,626	1,076,719	1,186,420	1,296,679	1,242,602	1,294,550
	inventory		160,012	155,032	162,623	140,829	141,969	161,428	188,127	182,813	204,267
	debtors		457,947	374,357	306,229	259,604	320,284	359,601	320,957	323,352	247,358
	Dividend paid	110,319.00		101,532.00	104,461.00	101,532.00	101,532.00	101,532.00	93,722.00	110,319.00	132773
	Cash and cash equivalents	585,794.00	315,498.00	37,980.00	20,334.00	73,389.00	71,417.00	400,568.00	478,158.00	406,611.00	379167
	Current assets	1,155,459.00	1,191,299.00	1,080,913.00	1,172,050.00	1,206,161.00	1,209,597.00	1,252,252.00	1,183,157.00	1,211,504.00	1087971
	Current Liabilities	400,570.00	473,922.00	546,693.00	622,251.00	617,322.00	534,389.00	606,850.00	553,132.00	544,011.00	523229
	Total Assets	1,997,108.00	2,089,258.00	1,863,657.00	2,141,747.00	2,228,669.00	2,223,838.00	2,320,956.00	2,300,320.00	2,633,093.00	1994865
BOC	Net income	108,349.00	168,178.00	21,426.00	32,318.00	23,165.00	76,875.00	68,450.00	-235,150.00	731,568.00	259033
	Sales	40,048,000.00	38,845,053	39,827,481	36,495,757	34,467,704	36,676,249	35,817,594	21,032,333	31,915,663	30,503,560
	inventory		3,703,968	5,396,459	6,183,918	5,674,768	5,973,456	6,954,674	5,956,933	4,482,067	4,393,589
	debtors		4,715,931	3,623,556	2,824,409	2,803,043	2,541,910	2,498,925	2,625,373	3,471,351	2,026,948
	Dividend paid	5,350,000.00	4,500,000.00	3,000,000.00	3,150,000.00	2,250,000.00	3,950,000.00	4,600,000.00	3,900,000.00	3,350,000.00	2900000
	Cash and cash equivalents	3,029,000.00	1,884,392.00	1,811,443.00	190,257.00	28,873.00	60,618.00	125,606.00	112,229.00	198,145.00	194314
	Current assets	11,814,000.00	10,791,635.00	11,251,283.00	9,215,573.00	8,665,252.00	8,968,350.00	9,579,205.00	8,972,496.00	8,518,272.00	7129828
	Current Liabilities	7,206,000.00	8,273,423.00	10,350,513.00	5,792,023.00	6,574,643.00	6,345,960.00	6,600,703.00	7,182,905.00	6,781,102.00	6052680
	Total Assets	24,120,000.00	21,705,852.00	21,936,362.00	18,338,257.00	17,805,588.00	18,499,800.00	18,681,184.00	18,253,510.00	16,985,923.00	15176495
BAT	Net income	7,618,000.00	5,490,854.00	3,905,957.00	4,083,425.00	3,343,434.00	4,850,732.00	4,976,256.00	4,255,314.00	-5,388,838.00	3735850

	Sales	906,588	682787	630500	565508	757051	831761	809719	826360	952836	921753
	inventory		33863	41236	37040	53742	29354	32858	36155	36883	27203
	debtors		195453	174741	146606	147680	178223	168659	178833	149551	184388
	Dividend paid	407,763	46,712.00	33,555.00	28,392.00	23,738.00	20,893.00	29,229.00	26,894.00	23,728.00	18710
	Cash and cash equivalents	167,636	6,095.00	200,407.00	54,219.00	53,203.00	955,382.00	1,083,908.00	280,000.03	696,934.00	429609
	Current assets	1,242,942	1,056,326.00	956,355.00	1,065,394.00	1,039,302.00	1,188,255.00	1,114,691.00	980,688.00	892,067.00	639388
	Current Liabilities	249,358	183,294.00	167,957.00	113,003.00	148,192.00	167,632.00	247,126.00	155,757.00	88,417.00	150166
	Total Assets	3,919,224.00	3,627,831.00	3,503,501.00	3,370,720.00	3,306,974.00	3,081,768.00	2,968,727.00	1,673,420.00	1,468,667.00	2012816
CARBICID	Net income	415,099	302,826.00	264,589.00	298,056.00	428,282.00	375,568.00	393,316.00	439,021.00	475,541.00	389287
	Sales	152,572.00	74,916,259.00	82,543,241.00	73,456,832.00	70,247,065.00	6,432,222.00	64,420,458.00	60,748,887.00	59,061,875.00	55,522,166.00
	inventory	11,688.00	1,091,637.00	7,368,012.00	7,882,606.00	7,473,094.00	8,131,242.00	10,674,406.00	9,703,689.00	7,470,607.00	7,957,272.00
	debtors	16,792.00	5,681,444.00	8,222,994.00	7,946,481.00	9,928,000	11,572,146.00	9,113,813.00	7,716,617.00	9,015,822.00	8,189,805.00
	Dividend paid	201.00	815,661.00	590,623.00	562,611.00	487,109.00	873,588.00	614,868.00	80,018.00	717,922.00	615420
	Cash and cash equivalents	-4,421.00	-27,894,788.00	-7,865,516.00	-25,999,579.76	11,788,605.58	7,477,681.00	590,991.00	12,643,348.00	-5,275,359.00	-872174
	Current assets	34,092.00	12,805,613.00	29,602,381.00	18,296,429.00	12,216,528.00	21,556,281.00	25,038,058.00	18,716,768.00	18,593,102.00	18057773
	Current Liabilities	39,702.00	31,044,600.00	33,659,381.00	25,783,768.00	21,983,714.00	8,306,438.00	10,094,439.00	3,204,039.00	13,831,373.00	8154377
	Total Assets	100,116.00	21,876,174.00	86,638,550.00	68,007,303.00	56,738,250.00	65,673,618.00	64,806,858.00	61,765,567.00	57,710,166.00	54584316
EABL	Net income	7,172.00	3,523,120.00	12,126,073.00	6,390,488.00	7,725,956.00	8,093,787.00	9,423,375.00	6,833.55	6,667,573.59	10823242
	Sales	3,383,108,288	2910677	2424754	2488610	2425090	2544629	2283152	1764848	1601357	1,542,619.27
	inventory	685,659,674	500574	341685	338907	270511	248693	184080	124535	123324	94642.34
	debtors	655,906,796	582903	641869	735813	784335	787780	771261	601826	532357	395968.39
	Dividend paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-77,854.04	-89,597.73	119232.93
FLAME	Cash and cash equivalents	-245,123,816	59,917.05	88,741.09	58,431.06	86,757.91	103,941.17	92,793.43	68,153.71	31,695.15	30861.82

	Current assets	1,413,147,374	1,156,870.39	1,079,328.98	1,133,151.10	1,141,603.81	1,140,414.97	1,053,504.23	805,722.22	690,135.06	525,090.90
	Current Liabilities	1,348,470,184	1,042,292.57	890,173.27	990,903.12	884,513.25	745,102.05	641,999.96	518,494.71	572,191.11	509305.15
	Total Assets	2,874,809,727	2,489,049,273.00	2,281,167,940.00	1,839,271,808.00	1,680,769,788.00	1,521,194,765.00	1,326,531,265.00	1,009,568,368.00	875,809,375.00	738926.82
	Net income	105,129,706.00	33,159,522.00	223,440,581.00	162,866,207.00	10,144,470.00	137,244,923.00	219,834,010.00	160,154,164.00	146,171,709.00	531945.58