EFFECT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF SUGAR MANUFACTURING FIRMS IN KENYA: A CASE OF MUMIAS SUGAR COMPANY IN KAKAMEGA

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DECLARATION

This thesis is my original work and has not been presented for examination at any other university.

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We have examined this document, and the research has met or exceeded the requirement for the degree sought, in addition, the candidate has sufficiently defended the material presented to merit the awarding of the degree of (the name of the degree being awarded)

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Internal/External examiner

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Internal/External examiner signature Date

Notes: (Pass, Pass with Distinction)

DEDICATION

I dedicate this project to God Almighty my creator, my strong pillar, and my source of inspiration, wisdom, knowledge, and understanding. He has been the source of my strength throughout this program and on His wings only have I soared. I dedicate this project to my family. A special feeling of gratitude to my loving parents, whose words of encouragement and push for tenacity ring in my ears.

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TABLE OF CONTENTS

DECLARATION ..... **ii**
EXAMINERS' SIGNATURES ..... **iii**
DEDICATION ..... **iv**
ACKNOWLEDGMENT ..... **v**
TABLE OF CONTENTS ..... **vi**
LIST OF TABLES ..... **x**
LIST OF FIGURES. ..... **xi**
DEFINITION OF TERMS. ..... **xii**
ABBREVIATIONS AND ACRONYMS ..... **xiii**
ABSTRACT ..... **xiv**
CHAPTER ONE **1**
INTRODUCTION **1**
1.1. Introduction 1
1.2. Background of Study 1
1.2.1. Working Capital Management 4
1.2.2. Profitability 10
1.2.3. Working capital management and profitability 12
1.2.4. Manufacturing Firms in Kenya 13
1.2.5. Mumias Sugar Company 15
1.3. Statement of the problem. 16
1.4. Purpose of the Study 17
1.5. Objectives of the Study 17
1.7. Research hypothesis 18
1.8. Significance of Study 18
1.9. Scope of Study 19
1.10. Delimitation of the Study 19
1.11. Limitations of the Study 19
1.12. Assumption of the Study 20
1.13. Theoretical framework. 20
1.13.1. Theory of constraints (TOC). 20

1.13.2. Risk – return tradeoff theory. 22
1.13.3. The liquidity preference theory. 23
1.13.4. The pecking order theory. 23
1.13.5. Transaction Cost Economics Theory. 24
1.14. Conceptual Framework 26
CHAPTER TWO 27
LITERATURE REVIEW 27
2.1. Introduction 27
2.3 Empirical Review 27
2.3.1. Inventory management and profitability. 27
2.3.2. Cash conversion cycle and profitability. 30
2.3.3. Accounts receivable days and profitability. 32
2.4.4. Account payable days and profitability. 36
2.4. Summary of literature review and research gap 39
CHAPTER THREE 44
RESEARCH METHODOLOGY 44
3.1. Introduction 44
3.2. Research design 44
3.3. Research site 45
3.4. Target population 45
3.5. Sampling Design and Procedure 46
3.6. Data Collection Instruments 47
3.6.1. Pilot testing of research instruments 47
3.6.2. Instrument Reliability 48
3.6.3. Instrument validity 49
3.7. Data Collection Procedure 49
3.8. Data Analysis and Presentation. 50
3.9.3 Diagnostic Tests. 51
3.10. Legal and ethical considerations 51
CHAPTER FOUR 53
DATA PRESENTATION, INTERPRETATION AND DISCUSSION 53
4.1. Introduction 53

4.2 Reliability Test Results 53
4.2. Response Rate 53
4.3. Demographic Characteristics of Respondents 54
4.3.1. Gender of the participants 54
4.3.2. Experience of the participants 55
4.3.3. Level of education of the participants 56
4.4. Descriptive analysis of variables 57
4.4.1. Inventory Management 57
4.4.2. Cash conversion cycle 61
4.4.3. Accounts receivable days 66
4.4.4. Accounts Payable Days 69
4.5. Diagnostic Tests 72
4.5.1 Normality Test 73
4.5.2. Test of multicollinearity 74
4.5.3. Q-Q plots 75
4.5.4. Homoscedasticity 79
4.6. Correlation Analysis 80
4.7. Multiple regression 81
4.10. Summary of Regression analysis 86
CHAPTER FIVE 88
DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS 88
5.1 Introduction 88
5.2. Summary of Main Findings 88
5.2.1. Inventory Management and Profitability of Manufacturing Firms in Kenya 88
5.2.2. Cash conversion cycle and Profitability of Manufacturing Firms in Kenya 89
5.2.3. Accounts receivable days and Profitability of Manufacturing Firms in Kenya 89
5.2.4. Accounts Payable Days and Profitability of Manufacturing Firms in Kenya 90
5.3. Discussions 90
5.3.1. Inventory Management and Profitability of Manufacturing Firms in Kenya 91
5.3.2. Cash conversion cycle and Profitability of Manufacturing Firms in Kenya 92
5.3.3. Accounts receivable days and Profitability of Manufacturing Firms in Kenya 93
5.3.4. Accounts Payable Days and Profitability of Manufacturing Firms in Kenya 94

5.4. Conclusion 95
5.5. Recommendations from the findings 96
5.5.1. Inventory Management 96
5.5.2. Cash Conversion Cycle 97
5.5.3. Accounts Receivable Days 97
5.5.4. Accounts Payable Days 97
5.6. Suggestions for Further Study 98
References 99
APPENDIX 119
Appendix I: Record Sheet 119
Appendix II: Questionnaire 120
Appendix III: Krecjie and Morgan Table 123
Appendix IV: Letter of Authorization 124
Appendix V: Permit from NACOSTI 125

LIST OF TABLES

Table 2.1: Summary Of Literature Review and Research Gaps. 40
Table 3.1: Target Population 46
Table 3.2: Sample size 47
Table 3.3: Reliability Statistics 53
Table 4.1: Response Rate 54
Tablet 4.2: Gender of participants 55
Table 4.3: Experience in the manufacturing industry respective departments 55
Table 4.4: Highest level of Education 56
Table 4.7: Descriptive Results on Inventory Management 57
Table 4.8: Descriptive Results on Cash conversion cycle 62
Table 4.9: Accounts receivable days on the Profitability of Manufacturing Firms in Kenya..66
Table 4.10: Accounts Payable Days on the Profitability of Manufacturing Firms in Kenya...69
Table 4.11: Tests of Normality 73
Table 4.12: Test of multicollinearity 74
Table 4.14: Model Summary 81
Table 4.15: ANOVA[a] 82
Table 4.16: Coefficients between variables 84
Table 4.16: Summary of Regression analysis 86

LIST OF FIGURES.

Figure2.1: Conceptual Framework 26
Figure 4.1: Q-Q Plot for profitability.....75
Figure 4.2: Q-Q Plot for inventory management.....76
Figure 4.3: Q-Q Plot for cash conversion cycle.....77
Figure 4.4: Q-Q Plot for Account receivable days.....78
Figure 4.5: Q-Q Plot for Account payable days.....78

DEFINITION OF TERMS.

Account payable days (AP Days): This metric indicates the average number of days a company takes to pay its suppliers after receiving goods or services.

Account receivable days (AR Days): This metric measures the average number of days it takes for a company to collect payment from its customers after a sale is made.

Cash conversion cycle (CCC): The cash conversion cycle is the time it takes for a company to convert its investments in inventory and other resources into cash flows from sales. It is a key metric in working capital management, calculated as the sum of days inventory outstanding, days sales outstanding, and subtracting days payable outstanding.

Inventory management: This refers to the process of ordering, storing, and utilizing a company's inventory, which includes raw materials, components, and finished products. In the context of manufacturing firms, effective inventory management ensures that sufficient stock is available to meet production demands while minimizing holding costs, leading to optimized profitability.

Performance: In the context of manufacturing firms, performance refers to how well the firm achieves its objectives, including profitability, productivity, efficiency, and growth.

Profitability: Profitability is the financial gain a company achieves after all its expenses have been deducted from total revenue.

Working capital management: This involves managing a company's short-term assets and liabilities to ensure it maintains sufficient liquidity to meet its operational needs and obligations.

ABBREVIATIONS AND ACRONYMS

AP – Accounts Payable

AR – Accounts Receivable

CCC – Cash Conversion Cycle

COMESA – Common Market for Eastern and Southern Africa

EBIT – Earnings Before Interest and Taxes

EOQ – Economic Order Quantity

ERP – Enterprise Resource Planning

EAC – East African Community

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

ICT – Information and Communication Technology

IoT – Internet of Things

JIT – Just-In-Time

KAM – Kenya Association of Manufacturers

MSMEs – Micro, Small and Medium Enterprises

NPM – Net Profit Margin

OECD – Organization for Economic Co-operation and Development

OPM – Operating Profit Margin

RFID – Radio Frequency Identification

ROA – Return on Assets

ROCE – Return on Capital Employed

ROE – Return on Equity

SMEs – Small and Medium Enterprises

TOC – Theory of Constraints

TCE – Transaction Cost Economics

UN – United Nations

UNIDO – United Nations Industrial Development Organization

USAID – United States Agency for International Development

WCM – Working Capital Management.

ABSTRACT

Despite considerable investment, Kenya's sugar manufacturing sector, particularly Mumias Sugar Company, continued to experience persistent financial instability, declining profitability, and recurrent government bailouts. These financial challenges pointed to inefficiencies in working capital management (WCM). This study investigated how four key WCM components, inventory management, cash conversion cycle, accounts receivable days, and accounts payable days, affected the profitability of sugar manufacturing firms, focusing on Mumias Sugar Company in Kakamega County. Specifically, the study aimed to determine the impact of inventory management, evaluate the effect of the cash conversion cycle, assess the influence of accounts receivable days, and examine the role of accounts payable days on profitability. Anchored on the Theory of Constraints, Risk-Return Tradeoff Theory, Liquidity Preference Theory, Pecking Order Theory, and Transaction Cost Economics Theory, the study explored how firms manage operational efficiency, liquidity, and cost structures to enhance profitability. A descriptive research design was adopted, targeting 15 purposively selected employees across key departments at Mumias Sugar Company. Data was collected through structured questionnaires and financial records. Instrument reliability was tested using Cronbach's alpha, and validity was ensured through expert reviews and piloting. Data analysis employed both descriptive and inferential statistics, including correlation and regression techniques. The findings revealed that efficient inventory management and shorter cash conversion cycles significantly enhanced profitability. Firms that maintained optimal inventory turnover ratios and minimized stock holding periods improved liquidity and reduced operational costs, thus increasing return on assets (ROA) and return on equity (ROE). The study found a strong negative relationship between extended cash conversion cycles and profitability, confirming that delayed conversion of working capital into cash inflows impeded financial performance. Extended accounts receivable periods were also associated with cash flow constraints and higher default risks. Additionally, while delayed payments to suppliers temporarily supported liquidity, prolonged delays undermined supplier trust and increased procurement costs. All four null hypotheses (H01 to H04) were rejected, confirming that inventory management, cash conversion cycles, receivable days, and payable days each had statistically significant effects on profitability. The study contributed to new knowledge by offering firm-level evidence from a financially distressed, non-listed sugar manufacturing firm, an area previously underrepresented in WCM literature. It recommended the implementation of real-time inventory systems, stricter credit policies, and strategic supplier term negotiations. The study also proposed future research on macroeconomic influences on WCM and comparative cross-sectoral studies to identify adaptable working capital practices for struggling firms.

CHAPTER ONE

INTRODUCTION

1.1. Introduction

The chapter covers the study's background, problem statement, objectives, hypotheses, significance, scope, limitations, assumptions, and guiding theories. It also presents the conceptual framework, outlining the relationship between working capital management and profitability in Kenyan manufacturing firms, with a focus on Mumias Sugar Company.

1.2. Background of Study

Numerous pieces of literature associated with corporate finance have focused on long-term company decisions such as company valuation, investment decisions, dividends, and capital structure (Nastiti et al. (2019). There is a need for careful analysis of liabilities and short-term assets as constituents of total assets. Given their significance, liabilities and short-term assets require critical investigation since their risk, profitability, and firm value (Florian, 2021).

From a global aspect, the profitability of manufacturing firms has experienced significant transformations driven by advancements in technology, globalization, and the shift toward sustainable practices. Recent years have seen an increasing reliance on automation, digitalization, and artificial intelligence to streamline production and reduce costs, which has contributed to higher profit margins (Balakrishna *et al.,* 2023). Additionally, global trade agreements and international supply chain networks have allowed manufacturers to access cheaper raw materials and labor, improving overall cost efficiency (Gürpinar *et al.,* 2024). However, geopolitical uncertainties, trade wars, and shifting consumer preferences pose ongoing challenges to profitability. Firms must continuously adapt to mitigate risks associated with fluctuating market demands and global economic instability (Celestin & Sujatha, 2024).

In Europe, the profitability of manufacturing firms is influenced by stringent regulatory frameworks, especially around environmental sustainability and labor practices. The European Union's Green Deal, aimed at achieving climate neutrality by 2050, has encouraged firms to adopt sustainable practices and invest in cleaner technology, which initially increases costs but is expected to improve profitability through long-term savings and competitive advantage

(European Commission, 2021). Moreover, the continent's strong intellectual property laws protect innovations, fostering a competitive manufacturing sector focused on high-value products such as automotive, aerospace, and pharmaceuticals (Eurostat, 2022). However, the region faces rising energy costs, impacting profit margins, particularly for energy-intensive industries (OECD, 2022).

In Asia, particularly countries like China, Japan, and South Korea, have long been a global manufacturing powerhouse due to their cost-effective labor and favorable government policies. The profitability of manufacturing firms in Asia is largely driven by economies of scale and innovation, particularly in electronics and automotive sectors (Burkacky *et al.,* 2022). China, for example, benefits from a vast skilled labor force and a robust supply chain network, enabling firms to maintain lower production costs and higher profitability (Asian Development Bank, 2022). However, increased competition and rising labor costs in some Asian nations have led companies to shift operations to Southeast Asia, where labor remains inexpensive, impacting profitability in developed Asian markets (World Bank, 2023).

Africa's manufacturing sector is emerging as a focal point of investment, driven by urbanization and a young, expanding workforce. However, profitability remains inconsistent across the continent due to challenges like inadequate infrastructure, political instability, and high energy costs (United Nations Industrial Development Organization, 2021). Countries such as South Africa, Nigeria, and Egypt lead in manufacturing output, with significant contributions from textiles, food processing, and automotive industries (African Development Bank, 2023). Nonetheless, many African manufacturers struggle with limited access to finance and technology, impacting their competitiveness and profitability in the global market. Investments in infrastructure and industrial policy reforms are seen as essential for enhancing profitability (World Bank, 2022).

Manufacturing companies are increasingly significant to economies as major instruments for sustained growth and development. The manufacturing sector stimulates interest from policymakers and scholars for its core role in the stimulation of the economy (Wan *et al.,* 2022). Organizations aim to maximize shareholders' value necessitating soberness in entrenching responsive financial adaptive systems and strategies. Therefore, firm managers and organizational leaders must manage their working capital efficiently to ensure profitability (Panigrahi *et al.,* 2022). The management of working capital involves decision-making on

elements of short-term financing and current assets of the firm. The main objective of working capital management is to ensure the firm maintains its ability to hold enough cash flow for its daily operations (Mohammed, 2023).

Studies describe working capital as the firm's current or short-term assets and short-term liabilities. The excesses of current assets over the firm's current liabilities are known as net working capital. The net working capital is an indicator of the organization's ability to meet its financial obligations in the short run (EL-Ansary & Al-Gazzar, 2020). Certain working capital management techniques are effective in eliminating and decreasing the risks and inability of the firm in paying its short-term liabilities (Zeidan, 2022).

In East Africa, the manufacturing sector plays a critical role in supporting economic growth. Countries such as Kenya, Uganda, and Tanzania are striving to develop their manufacturing capacities through regional integration efforts and investment incentives (East African Community, 2023). However, the profitability of manufacturing firms in East Africa is limited by high production costs, including expensive raw materials and unreliable energy sources. Efforts to reduce trade barriers and enhance inter-country logistics have shown positive impacts on cost reduction and profitability (African Development Bank, 2022). Nonetheless, East African manufacturers face substantial competition from imported goods, highlighting the need for supportive policies to protect and develop local industries (UN Economic Commission for Africa, 2023). Kenya's manufacturing sector is pivotal to its economic growth and Vision 2030 development agenda, with ambitions to increase its GDP contribution. The sector, however, faces challenges, including high operational costs, especially energy and raw material expenses, which constrain profitability (Kenya Association of Manufacturers, 2023). Despite these challenges, recent initiatives such as the "Buy Kenya, Build Kenya" policy, which encourages the consumption of locally produced goods, have positively influenced profitability by boosting local demand (Government of Kenya, 2023). Additionally, the growing adoption of digital tools and partnerships with foreign investors have enhanced operational efficiency, though the sector requires more investment in infrastructure and policy support to maximize profitability (World Bank, 2023).

1.2.1. Working Capital Management

Corporate finance decisions, as outlined by Kinasih *et al.* (2020), encompass investment and financing decisions, including managing assets and sourcing funds or debts. Working capital, essential for daily operations, requires policies that balance current asset investments and their financing. According to the agency theory, working capital management seeks to optimize the trade-off between returns and risks of holding assets, including the turnover and conversion periods of both current and non-current assets. Effective management of these assets aligns with the optimal portfolio mix theory, ensuring maximized returns at minimized costs (Naz *et al.,* 2021).

Efficient working capital management helps firms maximize the benefits of their net current assets, particularly in manufacturing industries where capital needs are more pronounced (Demiraj *et al.,* 2022). Managers must focus on profitability and liquidity, striving for a balance between these two critical objectives. An efficient working capital structure reduces dependence on external financing for short-term needs, thereby decreasing the likelihood of business failure or insolvency. Furthermore, the well-balanced working capital model developed by Gakondi and Muturi (2019) suggests that equilibrium in working capital enhances revenues, stock performance, and overall profitability.

Inventory management, which plays a central role in working capital management, is measured by dividing total sales by aggregate inventories. Slow inventory turnover negatively impacts liquidity, as products taking longer to sell lead to decreased cash flow and profitability (Endri *et al.,* 2020). Conversely, a low inventory turnover rate indicates limited sales, often caused by overproduction or decreased demand, which weakens cash reserves and accounts receivable, ultimately impacting profitability (Yegon *et al.,* 2021). Thus, inventory turnover is a key indicator of a firm's operational efficiency and liquidity status.

Accounts receivable and payable management also play crucial roles in working capital management. Efficient receivables management ensures liquidity for meeting liabilities, while delayed receivables lead to ballooning current liabilities, signifying low liquidity (Tudose *et al.,* 2022). The cash-asset ratio is another vital measure, showing a firm's ability to meet current obligations. Excess cash on the balance sheet, however, can signal underutilization, reducing profitability (Vinod & Nair, 2024). On the accounts payable side, delaying payments can

decrease short-term costs but risks losing trade discounts and customer loyalty, potentially driving them to competitors. Thus, balancing liquidity risks with financial and investment objectives is essential for long-term profitability (Braimah *et al.,* 2021).

1.2.1.1. Inventory management

Effective inventory management, as a core element of working capital management, is fundamental to a firm's profitability because it balances cost efficiency with operational readiness. Working capital management involves managing short-term assets and liabilities, with inventory being a significant component impacting liquidity and operational continuity (Deloof, 2003). Nicolas (2021) argues that excessive inventory ties up capital and increases storage and opportunity costs, while inadequate inventory disrupts production and sales, ultimately reducing revenue. Their research underscores the importance of maintaining optimal inventory levels to avoid these pitfalls and enhance financial performance.

Costa et al. (2023) add that small and medium enterprises (SMEs) that effectively manage inventory within their working capital frameworks enjoy better liquidity, reduced reliance on external financing, and improved profitability. These studies highlight the strategic role of inventory management not just as an operational function, but as a pivotal working capital lever influencing both operational efficiency and financial outcomes (Costa et al., 2023; Gill et al., 2010).

Modern inventory management techniques, such as just-in-time (JIT), have also demonstrated significant impacts on working capital efficiency and profitability. According to Shashi et al. (2019), firms adopting JIT practices reduce inventory holding costs, improve cash flow, and enhance customer satisfaction, leading to stronger financial performance. However, Akbar et al. (2021) caution that while JIT minimizes inventory costs, it requires highly reliable supply chains, which can be challenging for resource-constrained SMEs. This trade-off underscores the necessity for firms to adopt inventory strategies aligned with their working capital capacity, firm size, and industry dynamics (Akbar et al., 2021).

Moreover, inventory turnover, a key working capital metric, closely correlates with profitability. Adekunle and Dare (2021) reveal that firms with higher inventory turnover ratios achieve greater profitability through faster capital recycling and reduced holding costs. High

turnover reflects effective demand forecasting and production planning, which minimizes obsolescence and excess stock. Conversely, low turnover suggests inefficiencies, such as overstocking or sluggish sales, which tie up working capital and erode profits. Thus, monitoring and optimizing inventory turnover rates is critical for maintaining a profitable and efficient working capital cycle (Ufua et al., 2021).

Another dimension lies in the adoption of inventory technologies as a tool for improving working capital management. Innovations such as RFID systems, ERP software, and AI-driven demand forecasting have revolutionized how firms manage stock levels. Feng and Ali (2024) contend that these technologies enhance real-time inventory visibility and working capital utilization by enabling firms to respond swiftly to market changes, reduce wastage, and optimize stock levels. While initial investment costs may be substantial, their long-term profitability and working capital benefits typically outweigh these expenses.

The global nature of modern supply chains adds complexity to inventory's role within working capital management. Wilmer (2024) notes that firms operating across multiple markets contend with fluctuating demand patterns, geopolitical risks, and logistical disruptions that directly affect inventory and working capital decisions. Effective risk management strategies, such as supplier diversification and safety stock policies, help firms mitigate these risks and safeguard both operational efficiency and profitability. This reinforces the need for comprehensive, agile working capital management practices that integrate inventory control with broader financial and operational strategies (Wilmer, 2024).

1.2.1.2. Cash conversion cycle

The cash conversion cycle (CCC) is a pivotal metric within working capital management, measuring the time it takes for a company to convert investments in inventory, receivables, and other short-term resources into cash flow. By managing this cycle effectively, firms can enhance liquidity, reduce financing costs, and improve profitability. Karim et al. (2023) found that firms with shorter CCCs consistently experience higher profitability, as they require less working capital and benefit from lower operational financing costs. These finding underscores that efficient CCC management not only safeguards liquidity but also enables firms to allocate resources toward growth opportunities, directly contributing to improved financial performance.

The CCC is composed of three interrelated working capital components, inventory turnover, receivables collection period, and payables deferral period, each of which influences profitability. Baños-Caballero et al. (2023) observed that shortening the receivables collection period enhances cash flow, allowing firms to meet immediate obligations and reduce reliance on external funding. Conversely, strategically extending the payables deferral period provides firms with cost-free financing, although excessive delays may jeopardize supplier relationships. These findings highlight that managing each CCC component within an integrated working capital framework requires a careful balance to sustain profitability and operational continuity (Baños-Caballero et al., 2023).

The relationship between CCC and profitability is also influenced by sector-specific factors. Briones et al. (2022) noted that in retail sectors, where inventory turnover is typically high, shorter CCCs are critical for sustaining profitability due to the rapid velocity of sales transactions. In contrast, manufacturing firms often benefit from moderately longer CCCs to accommodate longer production and processing cycles. This sectoral variation emphasizes the need for industry-specific CCC and working capital strategies that align with operational and financial dynamics (Briones et al., 2022).

Additionally, macroeconomic conditions significantly affect the CCC's role in working capital management. During periods of economic stability, firms with efficient, shorter CCCs often maintain higher profitability and operational agility. However, during financial crises or downturns, Anton and Afloarei Nucu (2020) observed that firms maintaining surplus working capital or flexible CCC structures demonstrated greater resilience. This finding suggests that while minimizing the CCC is generally beneficial, maintaining strategic flexibility in working capital policies is equally important to safeguard long-term financial health and operational continuity (Anton & Afloarei Nucu, 2020).

Technological advancements are also transforming CCC management within the broader working capital framework. Innovations such as automated invoicing, predictive analytics, and AI-driven payment scheduling are enabling firms to optimize receivables collection, payables management, and inventory turnover more efficiently. Banerjee and Deb (2023) reported that companies leveraging such technologies achieved improved cash flow predictability, reduced CCC durations, and enhanced profitability. This evolution underscores the growing importance

of integrating digital solutions into working capital management systems to maintain competitive advantage in dynamic business environments (Banerjee & Deb, 2023)..

1.2.1.3. Account receivable days

The management of accounts receivable (AR), a crucial component of working capital management, has a profound influence on a company's profitability and financial health. Effective AR management ensures that payments are collected promptly, maximizing cash flow, reducing the likelihood of bad debts, and strengthening overall working capital efficiency. Timely collections enable businesses to reinvest in operations, service liabilities, and seize growth opportunities. For instance, Gamlath (2021), in a study on listed food, beverage, and tobacco companies in Sri Lanka, demonstrated that efficient AR management significantly enhanced firm profitability. This was reflected in improved return on assets (ROA) and return on equity (ROE), illustrating the role of AR management in optimizing the working capital cycle and driving both financial and operational performance (Gamlath, 2021).

Conversely, Laghari and Ahmed (2023) observed that ineffective AR management weakens working capital structures, leading to cash flow constraints and diminishing profitability. Without efficient collection processes, businesses face liquidity challenges that impair their ability to meet operational expenses and invest in growth initiatives. This issue was evident in Shah's (2021) study of Indian printing enterprises, which showed that poor AR management negatively affected profitability, as firms struggled with delayed payments and rising bad debts. The research highlighted a sharp contrast in financial performance between firms with robust AR practices and those with weak systems, reaffirming that effective AR management is essential for maintaining financial resilience and operational agility (Shah, 2021).

The relationship between AR management and profitability is further shaped by internal policy choices, particularly credit policies and receivables collection procedures, both integral to working capital strategy. While offering lenient credit terms may boost sales, it can also extend the AR days, strain liquidity and reducing profitability. Mathad (2020), in a case study on S. H. Kelkar Ltd Company in Mumbai, found that excessive AR levels directly undermined profitability by delaying cash inflows and disrupting the working capital cycle. The study emphasized the importance of minimizing the time lapse between sales completion and

payment receipt through the adoption of clear credit policies and efficient collection mechanisms, ensuring financial stability while remaining competitive (Mathad, 2020).

External factors such as industry dynamics and market conditions also shape AR management's effectiveness within working capital frameworks. Each industry presents distinct operational and financial environments that dictate how receivables should be managed. For example, the Indian printing industry has undergone a digital transformation, increasing reliance on software-driven services and necessitating more responsive AR management practices. Huang et al. (2023) noted that firms in this sector have had to adjust their AR strategies to align with evolving customer expectations and market demands. This highlights the need for industry-specific, adaptive AR management approaches that support both working capital efficiency and long-term profitability in dynamic environments (Huang et al., 2023).

1.2.1.4. Account payable days

Accounts payable (AP) management is a fundamental component of working capital management, playing a critical role in determining a company's profitability and financial health. Effective AP management involves strategically timing payments to suppliers to optimize cash flow, while maintaining positive and sustainable supplier relationships. By extending AP days within reasonable limits, firms can retain funds longer for productive uses such as operational investments, debt reduction, or pursuing short-term financial opportunities (Aldubhani et al., 2022). For example, Nyantika et al. (2022) examined agricultural firms in Kenya and found that firms extending AP days experienced higher profitability. These firms capitalized on the ability to deploy retained funds for short-term operational needs before settling supplier obligations, demonstrating how strategic AP management can act as a financial lever within the working capital cycle to boost profitability (Nyantika et al., 2022).

However, while longer AP days can improve liquidity and profitability in the short term, they may also carry risks, particularly in the form of strained supplier relationships. Delaying payments beyond reasonable limits risks damaging goodwill, losing favorable credit terms, or causing disruptions in supply continuity. Mwirigi et al. (2018) studied small retail businesses in Kirinyaga County, Kenya, and noted that while extended AP days appeared to positively influence profitability, the effect was not statistically significant. The study emphasized the importance of maintaining a balance by negotiating mutually agreeable credit terms with

suppliers, thus allowing businesses to benefit from extended payment periods without jeopardizing long-term supplier relationships or operational continuity (Mwirigi et al., 2018).

The significance of AP management within the broader framework of working capital management is further supported by findings from Olambo (2022), who examined public listed energy firms in Kenya. The study revealed that firms with longer AP days generally achieved higher profitability due to improved cash management practices, enabling better resource allocation across operational areas. However, Olambo cautioned that this strategy should be exercised judiciously to avoid supplier disputes, increased penalties, or price markups that might offset financial gains. This underscores the necessity for responsible and relationship-conscious AP management within working capital strategies (Olambo, 2022).

The potential downsides of excessive AP delays were highlighted by Morshed (2020), who found that delayed payments led suppliers to impose higher costs or limit credit access, increasing operational expenses and eroding profitability. This outcome illustrates the risks of overreliance on extending AP days as a working capital tactic. While such delays can offer temporary liquidity benefits, their long-term financial implications may be detrimental if supplier relationships deteriorate. As such, firms are encouraged to adopt balanced AP management approaches, carefully timing payments to optimize cash flow while fostering cooperative supplier partnerships essential for sustainable operations and financial resilience (Morshed, 2020).

1.2.2. Profitability

Profitability is a fundamental performance metric for businesses, representing their ability to generate earnings in relation to sales, assets, or equity. It serves as a key indicator of financial health and operational efficiency. Effective management of working capital components, particularly accounts receivable (AR) and accounts payable (AP), plays a pivotal role in driving profitability. A study by Aldubhani *et al.* (2022) on listed companies in Qatar demonstrated that shorter AR collection periods and reduced cash conversion cycles were strongly associated with higher profitability. Metrics such as operating profit margin (OPM), return on assets (ROA), return on capital employed (ROCE), and return on equity (ROE) all improved with efficient AR management (Aldubhani et al., 2022). By minimizing the time taken to collect

payments, firms not only bolster cash flow but also reduce the risk of bad debts, ultimately contributing to improved financial performance (Aldubhani et al., 2022).

A company's profitability and financial performance are essential for sustaining growth and ensuring long-term success. Profitability is defined by Chenari and Haroonkolaee (2024), as the ability to generate revenue, and it is critical for a business to avoid the risk of failure or bankruptcy when profits fall below cost levels. Financial performance reflects a company's financial standing, competitiveness, and understanding of profit and cost centers. The efficiency and effectiveness of operations, as well as the availability of resources, significantly impact both profitability and financial performance. Solid financial performance, according to Okafor *et al*. (2022), enhances a company's attractiveness to new investments, which boosts liquidity and enables better resource management. Key profitability ratios like Return on Assets (ROA) and Return on Equity (ROE) help managers evaluate how well a company uses its capital assets and generates shareholder returns (Okafor *et al.,* 2022).

The broader relationship between profitability and liquidity is shaped by external factors such as macroeconomic conditions and institutional frameworks. A meta-analysis of the link between profitability and financial liquidity found that private sector credit availability and the level of capital market development were significant moderators of this relationship (Czerwonka & Jaworski, 2021). This underscores the influence of external economic and institutional conditions on a firm's ability to optimize profitability. In rapidly changing markets, businesses must adapt their financial strategies to account for variations in credit access, market dynamics, and regulatory environments to maintain a healthy balance between liquidity and profitability (Czerwonka & Jaworski, 2021).

Profitability is influenced by a range of factors, including the management of AR and AP, working capital optimization, and external market conditions. Efficient AR and AP management practices are essential for improving cash flow, reducing costs, and maximizing financial returns. Research consistently demonstrates that firms prioritizing effective working capital management are better positioned to achieve sustainable profitability (Aldubhani *et al.,* 2022). To succeed in diverse market environments, businesses must adopt flexible and strategic approaches to their financial management practices, ensuring long-term resilience and growth.

1.2.3. Working capital management and profitability

Working capital management (WCM) is a fundamental component of financial management, focusing on the efficient handling of a company's short-term assets and liabilities to ensure sufficient liquidity and profitability. By optimizing the management of current assets, such as cash, receivables, and inventory, alongside current liabilities like payables, WCM directly influences a firm's financial health and operational efficiency. A study conducted on listed companies in Qatar revealed that shorter receivables collection periods and cash conversion cycles (CCC) were strongly correlated with higher profitability. Key metrics, including operating profit margin (OPM), return on assets (ROA), return on capital employed (ROCE), and return on equity (ROE), improved as firms streamlined their cash flow and receivables processes (Aldubhani *et al.,* 2022). These findings underscore the critical role of effective WCM in driving financial performance by enhancing liquidity and reducing the risk of bad debts.

Conversely, ineffective WCM practices can lead to liquidity challenges and diminish profitability. A meta-study analyzing the relationship between profitability and WCM across various macroeconomic and institutional contexts found a consistently negative correlation between profitability and the cash conversion cycle (CCC) (Czerwonka & Jaworski, 2021). Prolonged CCCs, resulting from delays in converting receivables and inventory into cash, were shown to have a detrimental effect on profitability. This highlights the necessity for firms to optimize their operating cycles by reducing the time taken to manage receivables, inventory, and payables. Efficiently shortening the CCC enables firms to improve cash availability, enhance operational flexibility, and sustain financial stability (Bouchmel et al., 2024).

The relationship between WCM and profitability is further influenced by industry-specific dynamics and prevailing market conditions. For instance, a study on trading companies in the United States found that excessive investment in inventories and receivables adversely affected financial performance (Syeda, 2021). High levels of tied-up capital in these short-term assets were associated with diminished profitability due to increased holding costs and delayed cash inflows. The study emphasized the importance of managing inventory turnover rates and collection periods to maintain financial efficiency. Companies must strike a delicate balance in managing their short-term assets and liabilities to optimize profitability while ensuring adequate liquidity for operations (Appiah-Kubi et al., 2024).

In addition to internal operational factors, external economic and institutional conditions also play a significant role in shaping the effectiveness of WCM strategies. The meta-study by Jaworski and Czerwonka (2021) revealed that factors such as access to credit, interest rate environments, and the level of capital market development significantly influence the relationship between WCM and profitability. For example, in economies with well-developed credit markets, firms may benefit from easier access to short-term financing, allowing for greater flexibility in managing working capital. Conversely, firms operating in less developed financial markets may face constraints that necessitate stricter WCM practices to ensure financial stability. These findings highlight the importance of adapting WCM strategies to align with the macroeconomic and institutional environment to maintain profitability (Jamal et al., 2024).

Effective WCM is indispensable for enhancing a company's profitability and long-term financial success. By efficiently managing receivables, inventory, and payables, businesses can improve cash flow, reduce operational costs, and achieve sustainable growth. Research consistently demonstrates that firms with well-optimized WCM practices outperform those with inefficient processes, making it a vital aspect of overall financial management (Aldubhani *et al.,* 2022; Jaworski & Czerwonka, 2021). To thrive in diverse and evolving market conditions, companies must continuously refine their WCM strategies, balancing liquidity and profitability to secure a competitive edge.

1.2.4. Manufacturing Firms in Kenya

The manufacturing sector in Kenya plays a critical role in the economy, contributing about 10% to the Gross Domestic Product (GDP) and employing 20% of the labor force. Despite this, the sector has faced stagnation over the past decades (Le & Ikram, 2022). However, the national government aims to revitalize the industry with the goal of transforming Kenya into a globally competitive industrial hub by 2030. The sector is dominated by consumer goods production, agro-processing, food processing, and other key industries like sugar refining and maize milling. Agro-processing alone contributes 1.3 billion USD, but its share of GDP is still modest at 3.2%, highlighting its growth potential. Though Kenya's agricultural sector supplies 75% of the country's industrial raw materials and accounts for 65% of exports, only 16% of these exports are processed goods, indicating a significant opportunity for value addition (Kiveu *et al.,* 2019).

However, manufacturers in Kenya face challenges such as high-cost inputs, operational inefficiencies, and expensive electricity, which is priced at 15 cents per kilowatt hour compared to 9 cents in neighboring countries (Gundelach, 2021). These challenges reduce productivity and profitability, necessitating better working capital management by firms to meet operational costs and ensure profitability. Kenya's membership in economic blocs such as the Common Market for East and Southern Africa (COMESA) and the East African Community (EAC) opens regional and international market opportunities for its manufactured goods, but efficiency and competitiveness remain crucial for tapping into these markets (Wamalwa *et al.,* 2019).

Foreign investment has emerged as a significant catalyst for growth in Kenya's manufacturing sector. Companies like Devki Group and Kenafric Industries have reaped considerable benefits from foreign capital, which has enabled them to scale up operations, adopt modern technologies, and expand their market reach (Odhiambo, 2021). This influx of investment highlights the sector's potential to attract additional capital, provided there are conducive policies and a stable economic environment. Encouraging foreign direct investment (FDI) through incentives and streamlined processes could further unlock opportunities for growth, innovation, and global competitiveness in the sector (Sitepu & Tampubolon, 2024).

Moreover, the manufacturing industry in Kenya can significantly enhance its contribution to the economy by addressing its existing challenges. Tackling high production costs through subsidies or access to cheaper energy alternatives, investing in workforce training programs, and upgrading infrastructure are essential steps toward bolstering the sector (Macharia *et al.,* 2022). Additionally, fostering efficient working capital management practices will not only improve liquidity but also ensure the financial sustainability of firms. These measures, combined with a strategic focus on attracting and utilizing foreign investments, can position Kenya's manufacturing sector for sustained growth and a greater impact on national economic development (Kimiagari *et al.,* 2023).

The manufacturing sector is a vital pillar of Kenya's economy with immense potential to drive growth and job creation. However, overcoming persistent challenges such as high costs, skill shortages, and infrastructure gaps is crucial for the sector to achieve sustainable progress (Onsomu *et al.,* 2022). By improving operational efficiencies, fostering investment, and creating an enabling environment for innovation, Kenya's manufacturing firms can strengthen

their competitive edge and significantly enhance their contribution to the country's economic transformation (Magambo *et al.,* 2024).

1.2.5. Mumias Sugar Company

Mumias Sugar Company Limited, based in Kakamega County, Kenya, holds a pivotal position in the country's sugar industry as its largest manufacturer. Established in 1971, the company has historically been a major player, producing approximately 250,000 metric tonnes of sugar annually – equivalent to nearly 42% of the nation's total sugar output (Mwaura, 2017). In addition to sugar production, Mumias Sugar Company has diversified its operations into electricity co-generation, ethanol production, and the manufacture of distilled water, contributing to Kenya's industrial landscape and the agricultural value chain.

Despite its historical prominence, the company has grappled with significant challenges, including mounting financial debts and operational inefficiencies. These issues culminated in 2018 when Mumias Sugar Company was placed under receivership, signaling a critical need for intervention (Ndichu, 2018). In response, the company's stakeholders, including the County Government of Kakamega, the National Government, and other partners, have initiated efforts to restore the company to financial and operational health. For instance, the ethanol production plant resumed operations in 2020 as a strategic step toward rebuilding the company's overall capacity and stability (Omondi, 2020).

The revival of Mumias Sugar Company is essential not only for its workforce and shareholders but also for the broader Kakamega economy. The company is a significant employer, providing jobs to thousands of residents and indirectly supporting many more through its supply chain (Kiptoo & Kagendo, 2023). Its operations are critical to sugarcane farmers in the region, who depend on the company as a reliable market for their crops. A successful turnaround would stimulate the local economy, generate additional employment opportunities, and help reduce rural-to-urban migration by sustaining livelihoods within the region (Mwaura, 2017).

The story of Mumias Sugar Company mirrors the broader dynamics of Kenya's sugar industry, which faces structural and financial challenges. While the company's decline underscores the need for reforms, ongoing revival efforts highlight its potential to regain its status as a leading player (Simiyu, 2021). Collaborative efforts involving government agencies, private sector

partners, and local communities are critical to ensuring its long-term success and economic sustainability. Revitalizing Mumias Sugar Company will not only secure its future but also strengthen the socio-economic fabric of Kakamega County and the national sugar industry (Ndichu, 2018; Omondi, 2020).

1.3.Statement of the problem.

The profitability of manufacturing firms in Kenya's sugar industry has been widely debated, with companies such as Mumias Sugar Company experiencing prolonged financial instability despite their critical role in supporting rural livelihoods and contributing to national economic development (Tonui & Jagongo, 2023). While existing studies have examined profitability issues within the sector, much of the literature focuses on high-level determinants such as financial ratios, macroeconomic conditions, and government regulations, often overlooking firm-specific operational inefficiencies. Factors like cost management, supply chain delays, inventory control, and workforce productivity remain underexplored, even though they significantly affect financial performance (Pathirana & Banda, 2022; Ichsan et al., 2021). This study addresses this gap by investigating how internal operational inefficiencies interact with external industry factors to influence profitability, with a specific focus on Mumias Sugar Company. Existing research primarily emphasizes external profitability determinants, including government policies, trade competition, and imported sugar influx (Ong'uti, 2022; Jegan et al., 2023; Otieno & Awino, 2020). While these factors shape the broader industry environment, they do not adequately explain firm-level variations in profitability influenced by internal efficiencies such as asset utilization, inventory turnover, and operational management (Arte & Larimo, 2021).

Earlier studies, including those by Mutuku and Ng'eny (2014) and Elly and Oriwo (2013), focused on macroeconomic factors without integrating firm-level practices. To bridge this conceptual gap, this study proposes a comprehensive framework that combines both internal and external profitability determinants. Empirical evidence underscores the role of internal efficiencies in enhancing financial outcomes. Effective cost control, operational efficiency, and supply chain management improve firm resilience (Waweru & Kalani, 2018; Githinji et al., 2021). However, research remains fragmented, with conflicting findings on whether internal inefficiencies or external pressures exert a stronger influence on profitability (Sogomi et al., 2024; Guluma, 2021). Methodologically, most studies rely on quantitative financial analyses,

overlooking qualitative operational insights (Njoroge, 2018; Thuita & Sitienei, 2021). This study provides a balanced approach by assessing the interplay between external factors and internal efficiencies, contributing to a comprehensive understanding of profitability within Kenya's sugar industry. By addressing empirical, conceptual, contextual, and methodological gaps, the study provides firm-specific insights that enhance strategic decision-making, ensuring sustainable financial performance in the sector.

1.4. Purpose of the Study

The study explored the relationship between working capital management (WCM) and profitability by examining factors like inventory, cash conversion, accounts payable, and receivables management. It sought to expand theoretical knowledge on how these elements impact financial performance. Practically, it was intended to provide insights into financial executives in manufacturing firms where working capital management is often overlooked, enhancing their understanding of its importance for profitability.

1.5.Objectives of the Study

1.5.1 General Objective

The study's main objective was to examine the effect of the working capital management on the profitability of Mumias Sugar Company in Kakamega, Kenya.

Specific Objectives

i. To determine the effect of inventory management on the profitability of Mumias Sugar Company in Kakamega, Kenya.
ii. To establish the effect of the cash conversion cycle on the profitability of Mumias Sugar Company in Kakamega, Kenya.
iii. To determine the effect of account receivable days on the profitability of Mumias Sugar Company in Kakamega, Kenya.
iv. To establish the effect of account payable days on the profitability of Mumias Sugar Company in Kakamega, Kenya.

1.7.Research hypothesis

The following directional Hypotheses for the study have been formulated.

H_{01}: Inventory period has no significant effect on the profitability of Mumias Sugar Company in Kakamega, Kenya.

H_{02}: Cash conversion cycle has no significant effect on the profitability of Mumias Sugar Company in Kakamega, Kenya.

H_{03}: Accounts receivable period has no significant effect on the profitability of Mumias Sugar Company in Kakamega, Kenya.

H_{04}: Accounts payable period has no significant effect on the profitability of Mumias Sugar Company in Kakamega, Kenya.

1.8. Significance of Study

The significance of this study lies in its ability to provide both theoretical and practical insights into the critical relationship between working capital management (WCM) and profitability, specifically within Kenya's manufacturing sector. From a theoretical perspective, the study will contribute to existing knowledge by analyzing how essential components of WCM – such as inventory management, cash conversion cycles, accounts payable, and receivables management – impact the financial performance of manufacturing firms. By focusing on the unique challenges and opportunities within Kenya's business environment, this research will enrich the literature on the role of WCM in improving profitability in developing economies.

Practically, the study's findings offer actionable recommendations for financial executives and managers, particularly at firms like Mumias Sugar Company, where effective WCM practices are often underutilized. By illustrating the tangible benefits of improved WCM – such as enhanced cash flow, reduced operational inefficiencies, and increased profitability – the study aims to empower manufacturing firms to adopt strategies that optimize their financial management. These insights will be invaluable for addressing financial constraints and achieving greater operational efficiency in Kenya's manufacturing sector.

Finally, the study provides critical insights for policymakers and industry stakeholders by highlighting the importance of WCM in driving the growth and sustainability of manufacturing firms. The findings could inform the development of supportive policies and initiatives aimed

at enhancing financial practices across the sector. By fostering better WCM practices, these strategies can strengthen the manufacturing industry's contribution to Kenya's economic development, creating a ripple effect that supports job creation, industrial growth, and overall national prosperity.

1.9. Scope of Study

This study examined the effect of working capital management (WCM) on the profitability of manufacturing firms in Kenya, using Mumias Sugar Company in Kakamega as a case study. It analyzed key WCM components, including inventory management, cash conversion cycle, accounts payable, and receivables management, and their impact on the company's financial performance over a five-year period. The research employed both primary and secondary data collection methods, including analysis of financial records and interviews with management. While limited to Mumias Sugar Company, the findings offered insights potentially relevant to the broader Kenyan manufacturing sector, excluding non-manufacturing firms and external industry variables.

1.10. Delimitation of the Study

The delimitation of this study centered on investigating the effect of working capital management (WCM) on the profitability of manufacturing firms, using Mumias Sugar Company in Kakamega as the case study. The scope was confined to key WCM components, inventory management, cash conversion cycle, accounts payable, and receivables management, and their influence on the firm's financial performance. Data were limited to Mumias Sugar Company over a defined period, excluding other sectors and companies outside Kenya's manufacturing industry. Moreover, external influences such as macroeconomic conditions, government policies, and industry-wide challenges, though potentially impactful on profitability, were deliberately excluded to maintain a focused analysis on WCM's direct role in shaping financial outcomes within the selected context.

1.11. Limitations of the Study

The study faced several limitations that may have influenced its scope and findings. It focused exclusively on Mumias Sugar Company, which limited the generalizability of results to other manufacturing firms in Kenya, as the firm's unique operational context may not fully represent

the broader industry. The analysis relied heavily on secondary data and financial reports, which could have contained inaccuracies or gaps, potentially affecting the reliability of the findings. Furthermore, external factors such as market fluctuations, regulatory shifts, and economic changes during the study period, though likely to influence profitability, were beyond the scope of working capital management and thus not fully accounted for. Time and resource constraints also restricted the depth and breadth of data collection and analysis.

1.12. Assumption of the Study

This study, which examined the effect of working capital management on the profitability of manufacturing firms in Kenya with a focus on Mumias Sugar Company, was based on several key assumptions. It assumed a stable economic environment in Kenya during the study period to ensure consistent analysis without major external disruptions. The study also presumed that Mumias Sugar Company would provide accurate, complete, and reliable financial data essential for assessing the relationship between working capital management and profitability. It was further assumed that the company's management prioritized working capital management and recognized its potential influence on financial performance. The study also relied on the assumption of relative homogeneity in manufacturing practices within the sugar industry, allowing the findings to be cautiously generalized. Lastly, it assumed the existence and consistency of established industry standards and metrics for evaluating working capital and profitability throughout the study period, which were critical for guiding the methodology and interpretation of results.

1.13. Theoretical framework.

The study's theoretical framework offers the framework for analysis of data describing the concepts used whilst illustrating the existing models and theories (Varpio et al., 2020).

1.13.1. Theory of constraints (TOC).

The Theory of Constraints (TOC), introduced by Eliyahu Goldratt, emphasizes the importance of identifying and addressing constraints within production systems to enhance overall throughput (Goldratt, 1984). TOC suggests that production systems are often hindered by bottlenecks, which act as limiting factors in achieving optimal output. By focusing on these constraints, organizations can reallocate resources, streamline processes, and ultimately

improve efficiency. This theory has found application in various industries, including manufacturing and supply chain management, where its principles help prioritize actions that yield the most significant impact on system performance (Karakoç & Şik, 2021).

The Theory of Constraints (TOC), developed by Eliyahu Goldratt (1984), underpins this study by offering a systems-based approach to improving profitability through the identification and elimination of operational bottlenecks. Within the context of working capital management (WCM), TOC provides a theoretical foundation for examining how constraints in key areas, inventory management, cash conversion cycle, accounts receivable, and accounts payable, can limit financial performance in manufacturing firms. In particular, inventory management aligns closely with TOC's emphasis on throughput; excess inventory or stockouts can act as significant constraints that hinder production flow and tie up working capital, thus affecting profitability. By identifying inventory-related inefficiencies as system constraints, firms can improve resource allocation and reduce waste, consistent with TOC principles (Karakoç & Şik, 2021).

Furthermore, TOC supports the analysis of the cash conversion cycle, which reflects how quickly a firm can turn its investments in inventory and other inputs into cash. Delays in receivables collection or poorly managed payables can act as constraints on liquidity, thereby restricting a firm's ability to operate efficiently. TOC's application here guides firms to focus improvement efforts on the most financially impactful areas, maximizing system performance and profitability. However, TOC has notable limitations. It does not directly address inventory-specific challenges such as demand variability, overstocking, or stockouts, factors central to modern supply chains (Psarommatis *et al.,* 2020). Additionally, TOC assumes static constraints, which may not hold in dynamic operational environments, and it overlooks transformative technologies like IoT, automation, and real-time data analytics (Carvalho de Sá *et al.,* 2022). These tools are essential in today's inventory and cash flow management. Despite these limitations, TOC provides a valuable framework for this study, enabling a focused analysis on how optimizing WCM components can remove financial bottlenecks and enhance profitability in manufacturing firms.).

1.13.2. Risk – return tradeoff theory.

The Risk–Return Tradeoff Theory, proposed by Gitman (1974), offers critical insight into the relationship between working capital management and firm profitability, particularly through its application to the Cash Conversion Cycle (CCC). The theory posits that firms must balance the trade-off between risk and return when managing their working capital: a longer CCC can enhance liquidity by allowing more time to sell inventory and collect receivables, thus reducing the risk of cash shortages. However, this increased liquidity often comes at the cost of reduced profitability, as capital remains tied up in non-productive assets like inventory and receivables, incurring opportunity costs. This principle directly underpins the study variables of inventory management, accounts receivable, and accounts payable, which collectively determine the CCC. For instance, excessive inventory may reduce stockouts (lower risk) but tie up funds (lower return), while delayed payables may conserve cash (higher liquidity) but strain supplier relationships and lead to penalties (higher risk).

The theory also implicitly informs the analysis of accounts receivable management, where lenient credit policies can boost sales and customer satisfaction (return) but increase default risk and delay cash inflows (risk). Similarly, aggressive accounts payable strategies may improve cash flow but damage supplier trust, impacting operational continuity. Despite its relevance, the theory faces limitations. It largely overlooks macroeconomic factors such as inflation, interest rates, and exchange rate volatility, which significantly affect the cost and value of working capital (Ibrahim & Isiaka, 2021). Additionally, the theory does not reflect the impact of digital financial technologies, such as real-time analytics, automation, and blockchain, which have redefined how firms manage CCC. These technologies can optimize receivables and payables cycles, reducing risk without necessarily sacrificing return (Dash et al., 2023). For example, digital receivables processing can compress CCC durations while maintaining liquidity and profitability. Thus, while Gitman's theory provides a foundational framework for evaluating the liquidity-profitability balance in CCC management, it requires modernization to accommodate evolving economic conditions and technological advancements that now shape working capital decisions (Barroso & Maio, 2024).

1.13.3. The liquidity preference theory.

The Liquidity Preference Theory, proposed by John Maynard Keynes, posits that firms might prefer shorter receivable days to improve liquidity. This theory suggests that by reducing the time it takes to collect receivables, firms can maintain a healthier cash flow, which in turn can be used to fund operations, pay off debts, or invest in growth opportunities. Shorter accounts receivable days can minimize the risk of bad debts and ensure that firms have sufficient liquid assets to cover their short-term liabilities, which is crucial for financial stability and operational efficiency (Taheri *et al.,* 2023). However, an overemphasis on liquidity might lead firms to overlook the strategic benefits of offering credit to customers. Providing longer credit terms can attract more customers and increase sales, as it gives buyers more time to pay for their purchases. This can be particularly beneficial in competitive markets where credit terms can be a key differentiator. A study on small and medium-sized enterprises (SMEs) in Kenya found that businesses offering flexible credit terms experienced higher customer retention and sales growth, despite the longer receivable days (Makori & Jagongo, 2013). Thus, while shorter receivable days enhance liquidity, they may also limit a firm's ability to leverage credit as a strategic tool to drive sales and customer loyalty.

Theoretical gaps exist in understanding how longer credit terms affect long-term customer loyalty. While offering extended credit can attract and retain customers, there is a need for more research on the balance between credit terms and customer satisfaction. For instance, a study on the Kenyan manufacturing sector revealed that firms with longer credit terms reported higher levels of customer satisfaction and loyalty (Njihia & Meru, 2014). However, the study also noted that excessive credit periods could strain a firm's cash flow and potentially lead to financial instability. Therefore, future research should explore optimal credit terms that balance liquidity management with customer loyalty to maximize overall profitability.

1.13.4. The pecking order theory.

The Pecking Order Theory, proposed by Myers and Majluf (1984) in Khan *et al.* (2021), suggests that firms may prefer to extend their accounts payable days to preserve internal funds for other uses. According to this theory, companies prioritize their financing sources based on the principle of least effort, preferring internal financing first, then debt, and issuing new equity as a last resort. Extending payable days allows firms to hold onto cash longer, which can be

used for other operational needs or investments, thus aligning with the theory's preference for internal funds over external financing. However, this approach has its criticisms. One major drawback is that extending accounts payable days can damage a firm's reputation, especially in industries where relationships and trust are crucial. Late payments can lead to strained relationships with suppliers, which may result in suppliers demanding stricter credit terms, raising prices, or even refusing to do business with the firm. A study by Pattnaik *et al*. (2020) highlighted that firms with poor payment practices may face higher costs or limited access to trade credit, which can negatively impact their operations and profitability. This criticism underscores the delicate balance firms must maintain between preserving liquidity and maintaining good supplier relationships (Pattnaik *et al.,* 2020).

Furthermore, the Pecking Order Theory does not sufficiently address the impact of global supply chain dynamics on accounts payable management. In today's interconnected world, global supply chains can significantly affect a firm's payables. Factors such as currency fluctuations, international trade policies, and geopolitical risks can influence payment terms and practices. Research by Han *et al.* (2020) pointed out that global supply chain complexities require more sophisticated and adaptive payables management strategies. The theoretical gap here indicates a need for models that incorporate the nuances of global supply chain dynamics to provide a more comprehensive understanding of accounts payable management (Han *et al.,* 2020).

1.13.5. Transaction Cost Economics Theory.

Transaction Cost Economics (TCE), originally introduced by Ronald Coase in 1937 and later developed by Oliver Williamson in 1979, focuses on the costs incurred during economic exchanges. These transaction costs include expenses related to negotiating, enforcing contracts, and coordinating activities between parties. Williamson’s work expanded on Coase's foundational ideas by explaining how firms choose between different governance structures – like markets, hierarchies, or hybrid models – to minimize these costs. The theory highlights that firms will internalize certain activities (e.g., in-house production) when the transaction costs of outsourcing are high, while they may rely on the market if external transactions prove more efficient. For manufacturing firms, TCE is particularly relevant in optimizing supplier relationships and production processes (Cuypers et al., 2020). One significant critique is TCE's inherent assumption of rational decision-making by firms. The theory presupposes that firms

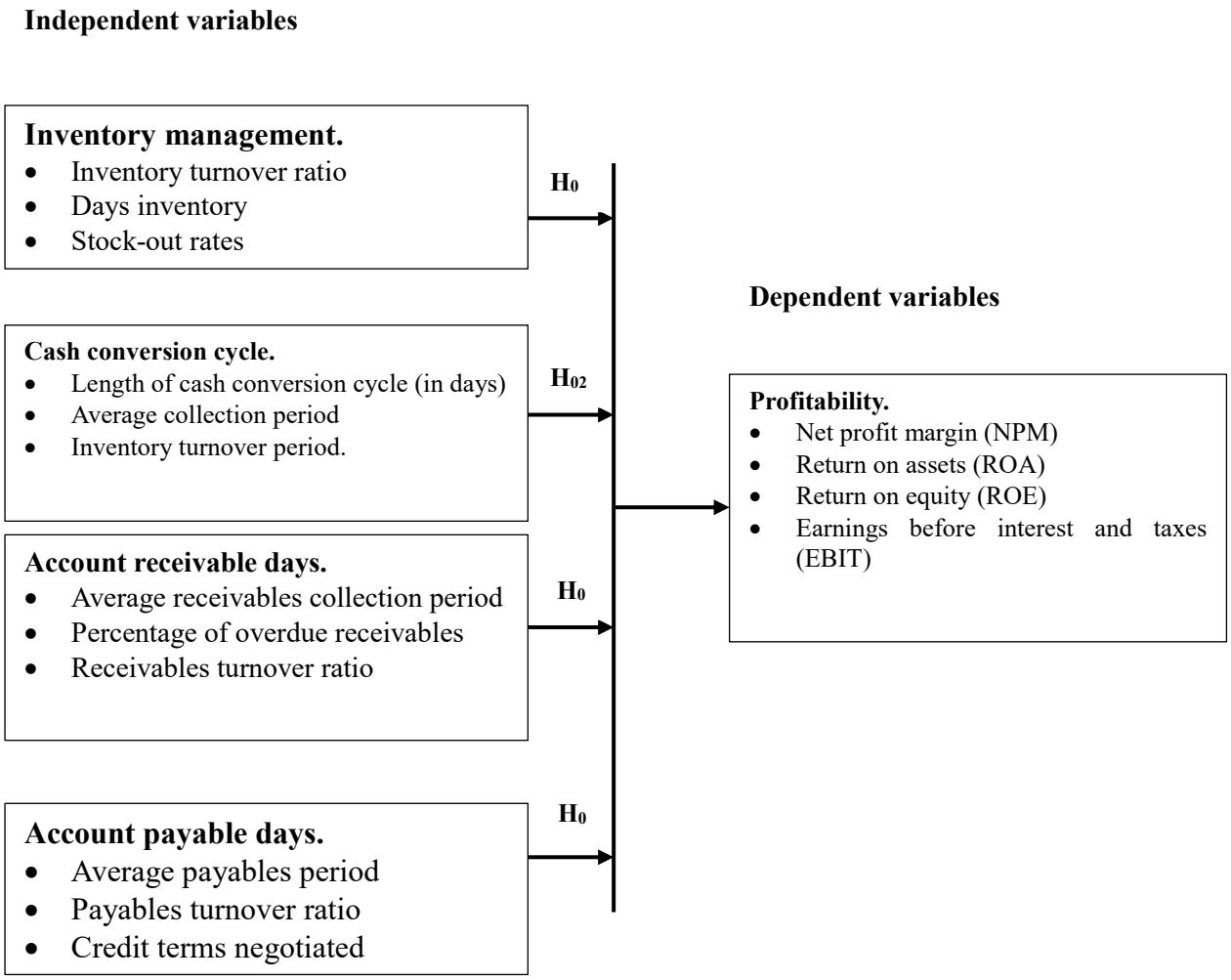
can effectively evaluate and compare transaction costs associated with different governance structures. However, in practice, bounded rationality and imperfect information often constrain decision-making processes. For example, firms may struggle to predict future contingencies or accurately estimate the costs of renegotiating contracts, leading to suboptimal decisions that deviate from the theory's predictions. This gap underscores the need for models that better account for cognitive and informational limitations in managerial decision-making.

Another theoretical gap in TCE lies in its limited consideration of dynamic and contextual factors, such as technological advancements and macroeconomic shifts. For instance, emerging technologies like blockchain and AI-driven analytics have significantly reduced traditional transaction costs, including monitoring and enforcement. These advancements challenge TCE's traditional assumptions and suggest that the cost-benefit analyses of outsourcing versus internalizing are no longer static but evolve with technological progress. Similarly, macroeconomic conditions, such as fluctuating trade tariffs or geopolitical instability, can influence transaction costs and governance decisions in ways not fully addressed by TCE (Onyeoma, 2024). Moreover, TCE primarily focuses on cost minimization while underemphasizing other strategic factors that influence governance decisions. Modern firms often prioritize innovation, flexibility, or speed to market over strict cost considerations. For example, a firm may choose to outsource to leverage external expertise or enhance innovation capabilities, even if it incurs higher transaction costs. The theory's narrow emphasis on cost efficiency fails to capture these broader strategic considerations, limiting its relevance in contemporary business environments.

By minimizing transaction costs such as contract negotiation or supply chain coordination, firms can reduce overhead and improve profitability. TCE helps firms evaluate the trade-offs between outsourcing and internalizing production processes, offering a framework to decide when to vertically integrate or maintain external supplier relationships. Efficient management of these transaction costs leads to streamlined operations, improved margins, and ultimately enhances the firm’s competitive advantage (Cuypers *et al.,* 2020).

1.14. Conceptual Framework

A conceptual framework is an analytical tool that organizes and clarifies concepts and their relationships within a specific context. It serves as a roadmap for understanding a phenomenon, guiding research, and interpreting results.



Source: Researcher, 2024

Figure 1.1: Conceptual Framework

The above figure diagrammatically conceptualizes the interaction between independent and dependent variables. The study seeks to measure the effect of working capital management financing policy based on certain facets including cash management, inventory management, accounts payable management, and accounts receivable management. The study's dependent variable is the financial performance of the manufacturing firm. The financial performance was evaluated using the company's return on assets whilst the moderating variable was the size of the firm.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter presents an assessment of both empirical and theoretical literature on the research's thematic spheres. The chapter offers general ideas on working capital management and concerns inclusive of; how to measure and define the working capital management policies of manufacturing firms. This chapter encompasses a review of theories relating to working capital management, a review and critique of past literature, and the existing research gaps in study.

2.3 Empirical Review

This section reviewed existing journal publications related to the study according to the research objectives.

2.3.1. Inventory management and profitability.

Jekey and Bazia (2024) conducted a study on cement manufacturing firms in Kenya and established a statistically significant negative relationship between inventory turnover, inventory conversion periods, and storage costs with profitability. Their findings indicated that firms maintaining higher inventory levels and experiencing extended inventory conversion periods incurred elevated holding costs, which directly diminished profitability. The study emphasized the importance of maintaining optimal inventory levels that balance the need to prevent stockouts with the objective of minimizing storage costs. Consequently, they recommended the adoption of just-in-time (JIT) inventory systems to improve efficiency and reduce warehousing expenses. However, the study's exclusive focus on the cement manufacturing sub-sector limited the generalizability of its findings to other manufacturing segments, such as sugar production, which face distinct inventory dynamics and operational structures. Furthermore, the study did not consider the impact of external disruptions, such as fluctuations in supply chain networks, which can significantly influence inventory turnover and profitability (Panigrahi et al., 2022). The current study sought to address these gaps by shifting focus to the sugar manufacturing sector, where perishability and seasonal production

cycles introduce different inventory management challenges. In addition, it incorporated both internal inventory management practices and external factors, including supply chain disruptions, to provide a more comprehensive understanding of inventory-performance relationships.

Nwaiku and Ejechi (2022) examined the effect of inventory management systems on firm performance, focusing particularly on systematic inventory control techniques such as the Economic Order Quantity (EOQ) model. Their study revealed that effective implementation of EOQ and related inventory strategies enhanced operational efficiency by optimizing order sizes, minimizing carrying costs, and preventing production disruptions due to stockouts. Efficient inventory systems were found to reduce wastage, enhance resource utilization, and improve profitability through cost savings. Nonetheless, the authors acknowledged that the success of such practices heavily depended on firm-specific factors, including organizational structure, technological readiness, and the nature of the industry. A major limitation of their study was its exclusive focus on firms listed on the Nairobi Securities Exchange, thereby excluding smaller, unlisted firms that may lack the financial and technical capacity to implement sophisticated inventory models. This oversight restricted the applicability of the findings across the broader manufacturing sector in Kenya. The current study addressed this limitation by examining inventory practices across a diverse set of firms, including both listed and unlisted entities within the sugar industry. This approach allowed the study to assess the scalability and effectiveness of systematic inventory management practices, such as EOQ, across varying organizational sizes and resource constraints.

Mung'asio and Moronge (2021) investigated the adoption of automated inventory systems in improving inventory visibility, demand forecasting, and supply chain coordination. Their research, although conducted outside Kenya, highlighted how technological innovations such as real-time inventory tracking, data analytics, and automation significantly improved stock control and operational efficiency. Firms using such systems were able to respond to demand fluctuations more swiftly, reduce inventory-related costs, and improve decision-making accuracy. However, their findings were primarily based on firms operating in developed economies with advanced technological infrastructure, limiting the direct applicability of the results to resource-constrained environments like Kenya. In response to this contextual gap, the current study examined the feasibility, cost implications, and effectiveness of implementing

digital inventory management systems in Kenya's sugar manufacturing industry. Given the challenges related to infrastructure, capital investment, and digital literacy, the study aimed to provide localized insights into how sugar firms could leverage available technologies to improve inventory practices. By investigating real-time tracking and data-driven inventory models in a developing economy context, the study contributed to understanding how digital transformation can be adapted to enhance operational performance in Kenyan manufacturing firms facing economic and technological limitations.

Gupta and Mehta (2020) analyzed the influence of inventory systems on customer service and market competitiveness. Their findings demonstrated that firms with efficient inventory management practices were better positioned to meet customer demand promptly, reduce lead times, and maintain high levels of customer satisfaction. These outcomes, in turn, enhanced customer retention and contributed to increased market share. The study suggested that maintaining consistent inventory levels, informed by demand forecasts and sales patterns, was critical for sustaining customer loyalty. However, the research was situated in a general context and did not address challenges commonly encountered by firms in developing countries, such as unreliable infrastructure, limited technological adoption, and supply chain fragility. These factors can significantly affect inventory performance and the ability to meet customer expectations in the Kenyan context. The current study responded to this gap by focusing on the sugar manufacturing industry in Kenya, where firms often face transportation delays, power outages, and logistical bottlenecks. It explored how firms navigate these constraints to maintain service reliability and competitiveness. In doing so, it provided a localized understanding of how inventory efficiency contributes to customer satisfaction under challenging operational conditions, offering insights relevant to firms operating in similarly constrained environments.

Kiarie and Wanjiku (2021) examined the impact of external economic factors, such as inflation, exchange rate volatility, and logistical inefficiencies, on inventory decision-making among manufacturing firms in Kenya. Their study emphasized that as the country's economy becomes increasingly intertwined with global markets, these externalities significantly influence inventory costs, procurement strategies, and risk mitigation measures. The authors highlighted that fluctuating input prices and foreign exchange exposure complicate inventory planning, especially for firms reliant on imported raw materials. However, their analysis relied heavily on qualitative methods, limiting the ability to quantify the relationship between these external

pressures and firm-level profitability. As Badhan (2024) recommended, future research in this area should adopt empirical methodologies to provide actionable insights for industry practitioners. In response, the current study employed quantitative techniques to examine the correlation between external macroeconomic variables and profitability through the lens of inventory management. By doing so, it not only expanded the existing body of literature but also provided a statistically grounded understanding of how external shocks affect working capital decisions in the sugar industry. This empirical approach enabled a more rigorous analysis of how firms can adapt inventory strategies to withstand economic volatility while sustaining profitability.

2.3.2. Cash conversion cycle and profitability.

Ombui *et al*. (2024) conducted a pivotal study that underscored the positive relationship between a shorter cash conversion cycle (CCC) and profitability in Kenyan manufacturing firms. By optimizing cash flows and reducing financing costs, a shorter CCC enhances a firm's ability to allocate resources efficiently, leading to improved financial performance. However, the study was limited in scope as it focused exclusively on listed firms, thereby excluding small and medium-sized enterprises (SMEs) that constitute a significant portion of Kenya's manufacturing sector. This omission leaves an empirical gap regarding the operational realities and financial strategies employed by non-listed entities, particularly in the informal sector. The study's reliance on secondary data limited its ability to capture the operational nuances of CCC management, such as real-time decision-making processes and the impact of external factors like inflation, exchange rates, and supply chain disruptions. Additionally, the research did not consider the transformative role of digital tools, such as enterprise resource planning (ERP) systems and fintech innovations, in optimizing CCC through automation and improved analytics (Ombui et al., 2024). Contextually, the findings may not extend to informal or rural manufacturing firms, which face unique challenges such as infrastructure deficits, limited access to formal credit systems, and volatile market conditions. These limitations highlight the need for further research to provide a more holistic understanding of CCC's impact across diverse firm types and geographical locations.

Kisanyanya (2020) examined the role of accounts receivable management, a critical component of the CCC, in enhancing profitability. Their findings demonstrated that timely collection of customer payments improves liquidity, reduces bad debt risks, and enhances the overall

financial health of manufacturing firms. However, the study adopted a quantitative cross-sectional design, which restricted its ability to evaluate long-term trends and temporal variations in accounts receivable practices. For instance, the dynamics of customer payment behaviors over economic cycles or during periods of market stress remain unexplored. Empirically, the study's lack of sector-specific analysis limits its ability to identify how variations in payment structures across industries impact profitability. For example, industries with long credit periods, such as construction, may face greater liquidity challenges compared to fast-moving consumer goods sectors. Conceptually, the research did not address how advancements in technology, such as automated invoice and digital payment systems, could streamline accounts receivable processes, reduce delays, and mitigate risks. Contextually, Kisanyanya (2020) focused on urban firms excluding rural manufacturing enterprises, which often operated with less sophisticated credit systems and faced challenges like limited access to reliable banking services. This oversight highlights the need for a more inclusive study that captures diverse operational contexts, which the current study seeks to undertake.

Njiru and Karanja (2021) investigated inventory management practices and their effect on profitability in manufacturing firms. Their research highlighted that reducing inventory holding periods lowers storage costs, minimizes obsolescence risks, and enhances operational efficiency. Despite these valuable insights, the study faced several limitations. First, it relied on survey data collected from firms based solely in Nairobi, which presents a contextual gap as rural and informal manufacturers often experience different inventory challenges, such as limited storage facilities, unreliable supply chains, and transportation inefficiencies. The study's small sample size reduced the generalizability of its findings, making it difficult to draw conclusions applicable to the broader manufacturing sector. Conceptually, the study did not address the potential trade-offs between lean inventory systems and customer satisfaction. For example, excessively reducing inventory levels could lead to frequent stockouts, which may harm customer loyalty and reputation. Methodologically, the reliance on cross-sectional data restricted the ability to analyze inventory dynamics over time, such as seasonal fluctuations and the impact of economic conditions on inventory turnover. Addressing these gaps would provide a more nuanced understanding of inventory management's role in profitability across different contexts.

Otieno and Mutuku (2021) focused on accounts payable practices and their influence on profitability, finding that delaying supplier payments can free up cash for operational use, thereby enhancing short-term financial performance. The study employed a mixed-methods approach, combining quantitative analysis with qualitative interviews to provide a comprehensive understanding of the subject. While insightful, the research lacked a longitudinal dimension, limiting its ability to assess how delayed payments impact supplier relationships and pricing strategies over extended periods. For instance, frequent payment delays could strain supplier trust, potentially leading to higher prices or stricter credit terms. The study concentrated on formal manufacturing firms, excluding informal enterprises that often lack the bargaining power to negotiate favorable payment terms with suppliers. However, the research did not explore the potential ethical and operational implications of delayed payments, such as supply chain disruptions and reputational risks. Contextually, the findings may not be generalizable to firms in regions with weaker supplier networks, where delayed payments could lead to supply shortages and increased operational costs.

Kimani and Mburu (2020) provided a nuanced perspective on the relationship between CCC and profitability, highlighting that an excessively short or long CCC may negatively affect financial performance. They argued for a balanced approach, where firms optimize their CCC to align with operational and market dynamics. Despite its contributions, the study faced several limitations. Using secondary financial data provided a broad overview but lacked the operational detail needed to understand internal decision-making processes, such as how firms determine the optimal CCC duration based on their specific needs and constraints. Furthermore, the research did not address how advancements in digital tools and data analytics could assist firms in determining and maintaining an optimal CCC. Contextually, the study focused on urban firms, leaving gaps in understanding the unique challenges faced by rural manufacturing enterprises, such as access to credit, infrastructure limitations, and market volatility. Expanding the scope to include diverse firm profiles and contexts would enrich the understanding of CCC's role in profitability.

2.3.3. Accounts receivable days and profitability.

Wachira and Muturi (2020) examined the relationship between accounts receivable days and profitability among listed manufacturing firms in Kenya, identifying a negative correlation between prolonged receivable periods and firm profitability. The study found that firms that

reduced the time taken to collect receivables enhanced cash flow stability and minimized the risk of bad debts, ultimately boosting profitability. However, the research relied solely on secondary data from listed companies, thereby focusing only on well-established and structured organizations. As noted by Gitahi et al. (2020), this approach limited the study's relevance to smaller, informal, or rural firms, which may face different challenges in receivables management. Furthermore, Wachira and Muturi did not incorporate the potential impact of customer relationship management practices or digital invoicing systems that could influence receivable efficiency. These limitations suggest a restricted scope in terms of both firm diversity and technological influence. The current study addressed these gaps by investigating a broader range of firms—including unlisted, rural, and small-scale enterprises—and by integrating the influence of digital technologies and strategic customer engagement tools in receivable management. This approach offered a more comprehensive understanding of how diverse Kenyan firms manage receivables to maintain liquidity and profitability in dynamic economic settings.

Njenga and Karimi (2020) investigated the impact of timely receivable collections on cash flow management and profitability in mid-sized manufacturing firms in Nairobi. Their cross-sectional survey revealed that firms implementing stricter credit policies experienced improved financial performance due to timely collections, reduced defaults, and better liquidity control. However, the one-time survey design provided only a snapshot in time, lacking the ability to capture long-term trends or fluctuations in receivable management practices. Additionally, the study’s exclusive focus on urban enterprises failed to address the unique challenges faced by rural-based firms, including delayed payments and infrastructural limitations. The research also did not examine how external economic variables, such as inflation, interest rate changes, and currency volatility, may affect receivable policies. Moreover, technological developments like digital credit management systems and customer portals were not explored, leaving a gap in understanding the full scope of receivable optimization. The current study responded to these shortcomings by employing longitudinal data to identify temporal trends and by including both urban and rural firms. It also considered how macroeconomic factors, and technological advancements influence receivable collection practices, thereby offering a holistic view of how Kenyan manufacturing firms manage credit policies for sustained profitability.

Mwangi and Otieno (2021) explored accounts receivable practices among small and medium-sized enterprises (SMEs) in Kenya, highlighting that extended receivable periods placed substantial strain on cash flows and significantly reduced profitability. Their mixed-methods approach, combining quantitative analysis of financial data with qualitative interviews, offered detailed insights into receivable practices. However, the findings were largely limited to SMEs and thus lacked applicability to larger manufacturing firms with more complex receivable systems and greater resource capacity. Additionally, the study did not assess the role of technological innovations such as automated invoicing systems, payment reminders, or customer analytics platforms, which could potentially reduce receivable periods and improve efficiency. Broader external variables such as inflation, regional industry differences, or economic shocks were also excluded from their analysis. The current study extended this analysis by incorporating both SMEs and larger firms from Kenya's sugar manufacturing industry, allowing a comparative view across organizational scales. It also assessed the viability and impact of automated receivable management tools in enhancing financial performance. By doing so, this research bridged the knowledge gap between firm size, technology adoption, and effective receivable management under varying economic and operational conditions.

Chege and Wambua (2022) investigated the role of customer segmentation strategies in optimizing accounts receivable periods and enhancing profitability. Their study found that firms segmenting customers based on payment behavior could reduce average receivable periods, streamline credit management, and improve cash flow. However, the research primarily relied on survey data, which, while informative, introduced potential response biases and lacked in-depth financial cost-benefit analysis of the segmentation strategies applied. Moreover, the study was conducted within urban centers, overlooking practices and challenges faced by rural manufacturing firms, which often deal with different customer profiles and logistical constraints. Furthermore, the influence of economic fluctuations and technological tools such as CRM systems and credit scoring algorithms was not analyzed, limiting the comprehensiveness of the findings. The present study addressed these limitations by combining survey data with case studies to generate richer contextual insights and assess the cost-effectiveness of segmentation approaches. It further evaluated how external macroeconomic conditions and digital technologies influence customer segmentation outcomes in Kenya’s sugar industry. Additionally, it incorporated decision-making models to determine optimal

credit terms that balance profitability with customer satisfaction, contributing to a more data-driven approach to credit policy formulation.

Kamau and Njoroge (2021) explored how flexible credit policies affected profitability in Kenyan manufacturing firms. Their case study-based research concluded that while offering flexible credit terms increased sales, it simultaneously extended receivable periods, negatively impacting cash flow and profitability if not properly managed. The qualitative nature of the case studies provided detailed insights into firm-specific strategies but lacked statistical generalizability across the broader manufacturing sector. The study did not investigate how firms without formal credit policies operate, nor did it analyze the frameworks used to determine optimal credit terms that balance risk, liquidity, and customer retention. Furthermore, their research excluded informal and early-stage enterprises that may use informal credit arrangements or lack capacity to structure sophisticated receivable policies. The current study bridged these gaps by encompassing a broader range of firms, both formal and informal, new and established, in Kenya's sugar manufacturing industry. It also evaluated the presence and utility of decision-making frameworks used to set and review credit terms in alignment with financial objectives. This comprehensive perspective enabled a better understanding of the trade-offs involved in extending credit and how firms can optimize credit strategies to achieve profitability without compromising liquidity.

Otieno and Mutuku (2020) conducted a longitudinal study on the relationship between accounts receivable management and profitability over a five-year period. Their findings confirmed that firms maintaining optimal receivable periods consistently achieved stronger financial performance compared to those with irregular or extended credit durations. The study's strength lay in its use of longitudinal financial data, which allowed for robust trend analysis. However, it lacked qualitative data to contextualize the operational and strategic challenges firms faced in implementing receivable policies. Additionally, the study was limited to urban enterprises, failing to capture the diverse operational realities of rural manufacturers, who often operate under different financial, logistical, and infrastructural constraints. The impact of external economic factors such as inflation, interest rate volatility, and supply chain disruptions was also not integrated. The current study addressed these limitations by combining longitudinal financial analysis with qualitative interviews to uncover both patterns and contextual challenges in receivable management. It included firms from rural settings and

incorporated analysis of macroeconomic trends and technological integration, such as the use of mobile platforms and cloud-based invoicing. This hybrid methodology provided a more comprehensive understanding of how firms in Kenya's sugar sector manage receivables across time and operational environments.

Njoroge and Kariuki (2021) analyzed the use of receivable financing as a strategy for managing extended payment terms without compromising profitability. They found that firms leveraging receivable financing, such as invoice discounting and factoring, were able to maintain stable cash flow even when offering longer credit periods to customers. The study, based on interviews with financial managers, provided qualitative depth into the motivations and mechanisms behind adopting these tools. However, the absence of quantitative data limited the ability to generalize findings or measure financial performance outcomes accurately. Furthermore, the study focused solely on formal firms with access to structured financial markets, excluding informal or rural enterprises that often lack such access. It also did not explore how receivable financing aligns with broader operational efficiency or customer satisfaction initiatives. The current study addressed these shortcomings by employing a mixed-methods approach, combining financial data analysis with in-depth interviews to assess both effectiveness and feasibility of receivable financing across a diverse set of firms in the Kenyan sugar industry. Additionally, the study evaluated how receivable financing strategies intersect with broader business strategies, such as maintaining competitive credit terms and achieving high customer satisfaction, under economic constraints.

2.4.4. Account payable days and profitability.

Khan et al. (2020) explored the relationship between working capital management and profitability in the textile manufacturing sector in Bangladesh, revealing that firms optimizing accounts payable periods realized improved cash flows and reduced reliance on external financing. The study, which relied on five years of financial ratio analysis, provided robust empirical evidence linking efficient payable management to profitability. However, it failed to examine qualitative aspects such as the nature of supplier credit terms and how such relationships influence the determination of ideal payment periods. The study's exclusive focus on the textile industry limited its applicability to other sectors with distinct operational and supply chain structures, such as heavy manufacturing or fast-moving consumer goods (FMCGs). Additionally, the researchers did not consider the potential role of technological

innovations, such as automated payment systems or digital supplier platforms, which could streamline payment processes, reduce transaction costs, and enhance supplier relationships. These gaps rendered the findings less generalizable across broader industrial contexts. The current study responded to these limitations by integrating qualitative data to explore the dynamics of supplier relationships and adopting a cross-sectoral approach. It also examined the influence of digital tools on accounts payable management in Kenyan manufacturing firms, ensuring a more comprehensive and contextually relevant understanding.

Wekesa and Njeru (2022) examined how working capital management, particularly accounts payable practices, influenced the financial performance of firms listed on the Nairobi Securities Exchange. Their findings indicated that longer payable periods improved firm liquidity and profitability by reducing dependence on short-term borrowing and enabling better operational cash flow. However, the study's focus on listed firms limited the generalizability of its conclusions, as these entities typically possess greater negotiation power and access to structured financing than small and medium-sized enterprises (SMEs). The study also relied exclusively on secondary data, offering strong quantitative insights but omitting qualitative dimensions such as supplier relationships, credit negotiation strategies, and reputational risks associated with delayed payments. Moreover, the study did not evaluate the risk of strained supplier ties or disruptions that might result from overextended payables. The present study bridged these gaps by incorporating SMEs into the sample to assess whether firm size influences payable strategies and supplier negotiations. It also integrated qualitative assessments to understand how relationships, trust, and communication with suppliers affect payment arrangements. This broader perspective allowed the study to examine how accounts payable policies are formulated and managed across diverse operational contexts within Kenya's manufacturing industry.

Njogu and Kinyua (2021) investigated accounts payable practices among mid-sized manufacturing firms in Kenya, focusing on the adverse effects of delayed payments beyond agreed terms. Their study found that late payments often strained supplier relationships, leading to disrupted supply chains, increased lead times, and potential reputational damage. Although the use of cross-sectional survey data provided a useful snapshot of current practices, it failed to capture the long-term impacts of chronic payment delays on profitability, supplier retention, and business continuity. Additionally, the study was geographically limited to urban-based

firms, neglecting rural manufacturers who may experience distinct challenges such as longer procurement cycles, limited supplier networks, and dependence on informal credit arrangements. The researchers also did not assess the strategic balance firms attempt to maintain between cash flow preservation through delayed payments and the necessity of maintaining positive supplier relations. The present study addressed these gaps by employing longitudinal data to assess the sustainability of payment delay strategies over time. It also included firms from rural areas to evaluate how geographic and infrastructural differences affect payment practices. By doing so, this research provided a nuanced understanding of how manufacturers manage trade-offs between financial flexibility and supplier collaboration in diverse Kenyan contexts.

Kimani and Otieno (2022) analyzed the influence of clearly defined accounts payable policies on the financial performance of cement manufacturers in Kenya. Their case study methodology uncovered that firms with standardized and transparent payable procedures maintained better supplier relationships and achieved more predictable operational outcomes. The qualitative nature of the research offered in-depth insights into internal policy frameworks, compliance mechanisms, and communication channels with vendors. However, the study's limitation to a single sub-sector, cement manufacturing, restricted its generalizability to industries with different procurement dynamics, such as textiles, food processing, or agro-based manufacturing. Additionally, the study did not incorporate macroeconomic variables such as inflation, interest rates, and exchange rate volatility, which can significantly affect the timing and structure of payables. These omissions curtailed the applicability of the findings across diverse and economically volatile environments. The present study addressed these limitations by conducting a cross-sectoral analysis of accounts payable practices and incorporating macroeconomic indicators. This approach facilitated a broader understanding of how firms in various manufacturing sub-sectors respond to economic conditions when designing and implementing payable policies, thus enhancing the relevance of the research to Kenya's wider industrial ecosystem.

Achieng and Ndungu (2020) examined the influence of supplier bargaining power on the management of accounts payable days in Kenyan manufacturing firms. Their mixed-methods study, which combined survey responses with financial performance analysis, revealed that firms with stronger, trust-based supplier relationships could negotiate more favorable payment

terms, thereby improving liquidity and overall profitability. Despite these strengths, the study did not sufficiently account for industry-specific variations in supplier power or the credit arrangements prevalent in different manufacturing sub-sectors. The researchers also focused predominantly on export-oriented firms, overlooking those serving domestic markets, where supply chains, procurement timelines, and pricing models may differ significantly. Furthermore, the study did not explore the strategic trade-offs involved in extending payable periods to preserve liquidity while ensuring supplier satisfaction and delivery reliability. These limitations narrowed the scope of the findings. The current study responded to these gaps by examining supplier relationship dynamics across multiple manufacturing industries, including those operating in local and rural markets, and analyzing the potential risks and benefits of extended payables. It also explored how firms optimize payables within the context of maintaining uninterrupted supply, operational efficiency, and long-term vendor partnerships under varying economic and competitive conditions.

2.4. Summary of literature review and research gap

This section summarized the review of existing literature to identify the empirical, conceptual, contextual, and methodological gaps relating to working capital management and financial performance. The reviewed studies revealed diverse methodologies, findings, and limitations. One study, for instance, used secondary data from SMEs in Garissa County and demonstrated a significant impact of cash management and accounts payable practices on financial performance, while inventory management showed no statistical significance. Another study focusing on SMEs in Ruiru and Thika employed descriptive methods and established a positive relationship between receivables monitoring and profitability but noted challenges in scalability and data scope. The key gaps identified in these studies included a limited focus on rural SMEs, insufficient integration of technological advancements in working capital management practices, and contextual differences in operational challenges across regions. The current study addressed these gaps by examining broader SME contexts in Kenya, incorporating enhanced data collection techniques, and focusing on region-specific factors such as prevailing economic conditions and infrastructural limitations. This approach was expected to enrich understanding and generate actionable insights for financial optimization in diverse SME sectors.

Additionally, several studies examined the influence of cash, receivables, inventory, and payables management on the financial performance of manufacturing firms. Findings indicated that receivables, inventory, and payables management significantly improved financial performance, while cash conversion cycles exhibited limited influence. One such study utilized secondary panel data from 2010–2019, applying panel regression and descriptive statistical methods. However, it excluded firms experiencing financial distress, focused solely on listed companies, and did not adopt experimental or mixed-method approaches, thereby limiting the generalizability of its conclusions.

Further, several studies on inventory management and financial performance within SMEs and cement manufacturing firms provided valuable insights into working capital management. In the cement sector, inventory turnover and inventory conversion periods negatively affected profitability, while inventory levels positively correlated with firm size. This study analyzed data from 1999–2014 using ordinary least squares (OLS) regression. Conversely, a study on firms listed on the Nairobi Securities Exchange (NSE) reported a negative effect of inventory management on firm performance, while cash management had a significant positive impact. Both studies had limitations: the cement study's narrow focus on cement firms and the NSE study's exclusive examination of listed firms constrained the broader applicability of their findings. Moreover, both studies relied solely on secondary data without triangulating qualitative insights, a methodological gap that the current study sought to address.

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Table 2.1: Summary Of Literature Review and Research Gaps.

Authors and Context	Focus of Study	Major Findings	Gaps in Research	Addressing the Gaps	Key Findings
Wekesa & Njeru (2022)	Influence of working capital management on financial performance of manufacturing firms listed in the NSE.	Receivables, inventory, and payables management significantly influence financial performanc	Study limited to NSE-listed manufacturing firms; excluding firms in financial distress.	This study included a non-listed firm (Mumias Sugar Company) facing financial challenges, broadening	Inventory, receivables, payables, and cash conversion cycle significantly influence profitability.

		e. Cash management was not significant.		applicability to distressed manufacturing contexts.	
Sitienei & Memba (2016)	Impact of inventory management on profitability of cement manufacturing firms.	Inventory turnover and inventory conversion period negatively affect profitability.	Limited focus on cement firms; lacked broader sectoral comparison.	This study extended the scope to include a sugar manufacturing firm, offering sectoral diversity and validating inventory findings across different industries.	Inventory management had a strong positive and significant effect on profitability.
Ahmed & Mwangi (2021)	Effect of working capital management on SMEs' financial performance.	Inventory management negatively impacts financial performance; cash management has a positive effect.	Limited to SMEs in Garissa County; excluding large firms and other counties.	The study examined a large-scale manufacturing firm in Kakamega County, extending evidence beyond SMEs and offering insights into firm size-based financial strategies.	Cash conversion cycle positively and significantly influenced profitability.
Nanjendo et al. (2024)	Effect of Accounts Receivable Practice on Value of Listed Manufacturing Firms at NSE.	Receivable management had minimal impact on ROA; cash management had significant effect; inventory negatively	Limited focus on accounts payable and lacked broader industry applicability.	This study included all key working capital components, particularly highlighting the influence of payables and receivables on profitability	Accounts receivable days had a strong and statistically significant effect on profitability.

		impacted ROA.		in an unlisted, distressed firm.	
Panigrahi et al. (2022)	Impact of liquidity and profitability on share prices of Indian cement companies.	Liquidity and profitability significantly influence share prices.	Limited to Indian cement firms, limiting generalizability.	The study contributed Kenyan-based evidence on liquidity-related metrics (CCC, AR/AP days), validating their influence in a different regional and industrial context.	Liquidity through working capital components strongly influenced profitability.
Chebet et al. (2019)	Effects of inventory management techniques on procurement performance.	Effective inventory techniques reduce costs and enhance profitability.	Focused only on inventory, excluding broader working capital elements.	The study integrated inventory within a comprehensive working capital framework, linking it directly to profitability instead of procurement alone.	Inventory practices, aligned with forecasting and turnover ratios, directly improved profitability.
Ombui et al. (2024)	Working capital management in Kenyan public universities.	Efficient working capital enhances performance, especially receivables and inventory.	Focused on public institutions, limiting relevance to the private sector.	This study focused on a private manufacturing firm, offering private-sector insights and operational realities different from public institutions.	Working capital components improved profitability in a commercial manufacturing setting.
Kisanyanya (2020)	Working capital	Receivables and	Did not consider	The study explored a	Accounts payable and

	management and profitability in NSE-listed manufacturing firms.	inventory turnover affect profitability positively.	external factors like economic shocks or firm-specific financial distress.	distressed firm (Mumias Sugar), capturing real-world constraints like liquidity crises and external shocks, thus enhancing practical relevance.	receivable days were significant predictors of firm profitability.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter describes the research methodology that was used in the study. It describes the research design employed, the research site, the target population, and the study sample. In addition, the tools and processes used in data collection as well as the pilot testing of research instruments. The chapter highlights the instrument reliability, validity, methods of data analysis, and legal and ethical considerations observed during the study.

3.2. Research design

The study adopted a descriptive research design with a focus on quantitative analysis to investigate the effect of working capital management on the profitability of Mumias Sugar Company in Kakamega County, Kenya. The purpose of the research was to systematically examine the relationship between key components of working capital management, including inventory turnover, accounts receivable, accounts payable, and the cash conversion cycle (CCC), and profitability indicators such as net profit margin and return on assets (ROA). A descriptive research design was considered appropriate for the study because it enabled a structured and organized examination of existing financial data without manipulating variables. The study sought to identify patterns, trends, and correlations within the financial operations of the company, offering insights into how working capital practices influenced profitability outcomes. As emphasized by Kothari (2021), descriptive research was essential for analyzing relationships between variables and forming a basis for practical recommendations, making it suitable for business-focused financial inquiries such as this.

Furthermore, descriptive research allowed the study to answer important “what” and “how” questions regarding the financial implications of working capital management, as noted by Saunders et al. (2024). By leveraging readily available secondary data, this research design proved to be cost-effective and time-efficient, making it suitable for the study’s scope and available resources. The findings not only guided improvements in working capital practices at Mumias Sugar Company but also offered practical lessons for other manufacturing firms in Kenya encountering similar financial management challenges.

3.3. Research site

The study investigated the effect of working capital management policies on manufacturing firms. The firm selected for the case study was Mumias Sugar Company Ltd, located in Mumias, Kakamega County. Consequently, the study was conducted within the organization's premises for primary data collection. The research site was therefore at Mumias Sugar Company Ltd, situated in Kakamega County, west of the capital city, Nairobi.

3.4. Target population

The research population, defined as the collective units, subjects, or elements relevant to the study (Stratton, 2021), comprised 198 employees at Mumias Sugar Company. Participants selected for interviews possessed extensive experience in finance and manufacturing operations, having observed significant shifts in industry trends over the years. The study employed a stratified sampling technique, allowing the researcher to choose respondents based on specific criteria relevant to the research objectives (Golzar et al., 2022). This approach ensured that the sample reflected the diverse perspectives of employees regarding the factors contributing to the company's profitability. To address the need for technically sound financial insights, the selected respondents were drawn from key departments directly involved in financial decision-making and working capital management processes. These included the finance department, whose staff possessed formal financial management expertise; the administration department, responsible for overseeing operational and financial policy implementation; and the store/warehouse department, whose personnel managed inventory, procurement, and cash conversion operations. This selection criterion ensured that all respondents had the technical capability and operational knowledge necessary to provide informed and reliable responses to the questionnaire items relating to working capital management and profitability. Due to resource constraints, only select staff from these departments were included to maintain data relevance and focus on financially impactful roles.

Table 3.1: Target Population

Participants	Number of Employees	Percentage (%)
Finance Officers	10	5.05%
Procurement Officers	10	5.05%
Inventory/Store Managers	8	4.04%
Internal Auditors	5	2.53%
Senior Management	4	2.02%
Clerks from departments	161	81.31%
Total	**198**	**100.00%**

Source: Mumias Sugar Co. 2019

3.5. Sampling Design and Procedure

The sampling procedure for this study involved stratified sampling design to select participants from a target population of 198 employees at Mumias Sugar Co. This method allowed for intentional selection of respondents based on their relevant experience and knowledge of working capital management and profitability (Rahman *et al.,* 2022). Key departments, including administration, finance, and the store/warehouse department, were identified to ensure insights were gathered from individuals with significant expertise in financial operations and inventory management. The sample size was determined using the Krejcie and Morgan table of 1970 (Attached in the appendices), resulting in a target of approximately 131 participants. This structured approach aimed to ensure that the selected respondents were representative of the broader employee base while fulfilling the criteria for relevance and knowledgeability, thereby enhancing the reliability and validity of the research findings.

$$S = \frac{\boldsymbol{X^2 \cdot N \cdot P \cdot (1 - P)}}{d^2.(N-1) + X^2.P.(1-P)}$$

Where:

- S = Required sample size
- X^2 = Chi-square value for 95% confidence level (typically 3.841)
- N = Population size
- P = Proportion of the population (usually 0.5 for maximum variability)

- d = Margin of error (usually 0.05 or 5%)

$$S = \frac{\mathbf{3.841 \times 198 \times 0.5 \times (1 - 0.5)}}{\mathbf{0.052 \times (198 - 1) + 3.841 \times 0.5 \times (1 - 0.5)}}$$

$$S = \frac{\mathbf{190.0395}}{\mathbf{1.45275}} = 130.78 \approx 131$$

Table 3.2: Sample size

Participants	Sample of Employees	Percentage (%)
Finance Officers	7	5.34%
Procurement Officers	7	5.34%
Inventory/Store Managers	5	3.82%
Internal Auditors	3	2.29%
Senior Management	3	2.29%
Clerks from departments	106	80.92%
Total	**131**	**100.00%**

Source: Mumias Sugar Co. 2019

3.6. Data Collection Instruments

The investigation employed record survey sheets and a questionnaire to gather both secondary and primary data. The dependent variable, profitability, was assessed through record survey sheets derived from financial statements, capturing essential financial figures from the statements of financial position and comprehensive income. Questionnaires, as defined by Bryman (2008), consisted of a series of specific inquiries presented in short form, which could be administered verbally by the researcher or filled out by respondents at their convenience. The study utilized both closed and open-ended questionnaires: closed questionnaires aimed to elicit specific information without extraneous details, while open-ended questionnaires allowed respondents the freedom to elaborate on their answers (Bell et al., 2022).

3.6.1. Pilot testing of research instruments

Ahmed and Ishtiaq (2021) asserted that the primary purpose of pilot testing research instruments was to identify weaknesses in both the design and execution phases of the research.

Additionally, pilot testing served as a proxy for information gathering from a probability sample. Scholars such as Bell et al. (2022) emphasized that pilot testing enhanced the appropriateness and accuracy of the instrumentation and research design. The advantages of pilot testing included the identification of potential structural and financial concerns, as well as providing an indication of the time required for effective fieldwork. Furthermore, it laid the groundwork for possible modifications to the instruments and data collection methods, while also facilitating the training and improvement of fieldwork techniques and efficient resource management (Mugenda & Mugenda, 2004). Importantly, respondents for pilot testing did not need to be selected statistically for instrument validity and reliability checks. Omona (2013) recommended that, depending on the sample size, a preset sample should range between 1% and 10%. In this study, pilot testing was conducted with four respondents selected from the West Kenya Sugar Company, Kakamega, enabling cost-saving measures to be assessed during the pilot testing phase.

3.6.2. Instrument Reliability

According to Blumberg, Cooper, and Schindler (2014), reliability referred to the stability, repeatability, and internal consistency of a measurement instrument. This study utilized Cronbach's alpha to assess the reliability of its data collection instruments, as this reliability coefficient provided insights into the consistency of the questionnaire responses. Specifically, Cronbach's alpha was employed to compute the average of all possible split-half reliability coefficients (Amirrudin et al., 2021). Bell et al. (2022) suggested that for a study employing Cronbach's alpha, the values should ideally exceed 0.8; however, this study adopted a reliability threshold of 0.7. Blumberg, Cooper, and Schindler (2014) highlighted the utility of Cronbach's alpha for multi-item scales of measurement at the interval level, while Surucu and Maslakci (2020) noted that to enhance questionnaire reliability, Cronbach's alpha should be applied to separate domains within the questionnaire rather than to the entire instrument. Furthermore, Surucu and Maslakci (2020) asserted that Cronbach's alpha served as a suitable index for inter-item consistency reliability. The study administered questionnaires remotely, allowing respondents the flexibility to complete their responses at their convenience. The reliability of the measurement scale was assessed using Cronbach's Alpha coefficient. The analysis yielded a Cronbach's Alpha value of 0.947 for the 40 items included in the instrument. According to

Nunnally and Bernstein (1994), a Cronbach's Alpha value of 0.70 or higher is considered acceptable, while values above 0.90 indicate excellent internal consistency.

3.6.3. Instrument validity

Surucu and Maslakci (2020) defined instrument validity as the extent to which an instrument accurately measured what it was intended to measure. Ahmed and Ishtiaq (2021b) further elaborated that instrument validity reflected the degree of alignment between the phenomena under study and the resulting explanations. This research employed both content and construct validity to ensure accuracy. Construct validity referred to the extent to which measurement items accurately captured the constructs intended for evaluation. To ensure construct validity, the study created sub-sections that targeted specific research objectives, and the inquiries were designed to closely align with the study's conceptual framework to minimize ambiguity. Creswell and Poth (2020) emphasized the importance of involving an external party to provide insights that could enhance the study and its findings. Consequently, quality items were selected based on a thorough review of relevant empirical and theoretical literature concerning accounts payable practices, working capital policies, profitability, and liquidity management principles.

3.7. Data Collection Procedure

The data collection procedure for this study involved a systematic approach to gather both quantitative and qualitative data. Initially, ethical approval and permission were obtained from relevant authorities, including Africa Nazarene University and the National Commission for Science, Technology, and Innovation (NACOSTI), to ensure compliance with research regulations and guidelines. Following this, the research instruments, including structured questionnaires and semi-structured interview guides, were pilot tested to confirm their clarity and effectiveness. Once finalized, trained research assistants administered the questionnaires to selected participants through face-to-face interviews and online platforms, ensuring that stakeholders such as procurement officers, healthcare providers, donor representatives, government officials, and suppliers were adequately represented. In parallel, semi-structured interviews were conducted with a smaller sample of stakeholders to gather in-depth qualitative insights into their experiences and perspectives regarding procurement challenges and successes. Throughout the data collection process, ethical guidelines, including informed

consent and confidentiality, were strictly adhered to, and quality control measures were implemented to ensure the reliability and validity of the data collected.

3.8. Data Analysis and Presentation.

The study collected secondary financial data from Mumias Sugar Company's audited financial statements, annual reports, and other relevant financial records for the period under review. This data included variables related to working capital management, such as inventory turnover, accounts receivable days, accounts payable days, and the cash conversion cycle (CCC), alongside profitability measures including net profit margin and return on assets (ROA). Upon collection, the data was subjected to a preparation process to ensure accuracy, consistency, and completeness. This process involved sorting, coding, and organizing the data in a structured format suitable for analysis. Data preparation was facilitated using the Statistical Package for Social Sciences (SPSS) Version 25, which assisted in both the management and statistical analysis of the dataset.

Following data coding, descriptive statistical methods were employed to summarize the key characteristics of the data. Specifically, measures such as frequencies, percentages, means, and standard deviations were computed to aid in understanding the distribution and trends within the data. The summarized results were presented in tabular and graphical formats for clarity and ease of interpretation, in line with the recommendations of Mugenda (2013), who underscored the importance of descriptive statistics in organizing and presenting research data effectively. This structured approach to data collection and preparation ensured that the dataset was reliable, valid, and suitable for subsequent statistical analyses aimed at addressing the study objectives.

Beyond descriptive statistics, various inferential tests were conducted to assess relationships between variables and test research hypotheses. These tests included correlation analysis, hypothesis testing, and regression modeling. A multiple linear regression model was employed to determine the effect of working capital management components on the profitability of manufacturing firms in Kenya. The model was structured as follows:

$$\mathbf{Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\epsilon}$$

where Y represented profitability, β_0 was the intercept, β_1 to β_4 were the coefficients for the independent variables, and ϵ was the error term. This model enabled an assessment of how

working capital management practices influenced profitability, quantifying both the magnitude and direction of these effects.

3.9.3 Diagnostic Tests.

To ensure the reliability and validity of the regression results, several diagnostic tests were conducted. Multicollinearity was assessed using the Variance Inflation Factor (VIF). A VIF value exceeding 10 indicated significant multicollinearity, necessitating corrective actions such as variable removal or the creation of composite measures. The normality of residuals was tested using the Shapiro-Wilk and Kolmogorov-Smirnov tests, while visual tools such as Q-Q plots and histograms provided additional confirmation. In cases where non-normal residuals were detected, data transformations or robust regression techniques were applied. The Durbin-Watson test was employed to check for autocorrelation in the residuals. Homoscedasticity, essential for valid regression outcomes, was tested using the Breusch-Pagan and White tests, where a p-value below 0.05 signaled the presence of heteroscedasticity. When such issues arose, robust standard errors or weighted least squares regression techniques were applied to address variance inconsistencies. These diagnostic measures collectively ensured that the regression model adhered to the necessary statistical assumptions and produced accurate, unbiased results.

3.10. Legal and ethical considerations

Legal and ethical considerations were paramount in this study to ensure participant protection and research integrity. Ethical approval was sought from relevant authorities, including Africa Nazarene University and the National Commission for Science, Technology, and Innovation (NACOSTI), to comply with legal research requirements in Kenya. Informed consent was obtained from all participants prior to their involvement, ensuring they were fully aware of the study's purpose, procedures, potential risks, and their right to withdraw at any time without consequences. Confidentiality and anonymity were upheld by removing personal identifiers from the data and securely storing responses in password-protected files to prevent unauthorized access. Sensitive information disclosed during interviews was handled discreetly, fostering a safe environment for participants to share their insights.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4.1. Introduction

This chapter presents the research findings and interpretation of the data results. The descriptive findings and inferential statistics were presented in tables.

4.2 Reliability Test Results

Table 4.1 presents the reliability statistics for the study's data collection instrument, specifically focusing on internal consistency.

Table 4.1: Reliability Statistics

Cronbach's Alpha	N of Items
0.947	40

Cronbach's Alpha coefficient is reported at 0.947 for 40 items, indicating excellent reliability. A Cronbach's Alpha value above 0.9 is generally considered to reflect a high level of internal consistency among the items (Tavakol & Dennick, 2021), suggesting that the instrument used in this study was highly reliable for measuring the intended constructs. Therefore, the obtained value of 0.947 suggests that the instrument demonstrated excellent reliability, indicating that the items used to measure the construct were highly consistent in capturing the intended concepts. This high internal consistency enhanced the credibility of the data collected and confirmed that the instrument was suitable for further statistical analyses such as descriptive statistics, correlation, and regression.

4.2. Response Rate

The researcher distributed 131 questionnaires to the participant of the study. From the questionnaires issued, 119 were filled in and returned, this represented a 90.84% response rate as shown in Table 4.2.

Table 4.2: Response Rate

Description	Frequency	Percentage (%)
Questionnaires Distributed	131	100.00
Questionnaires Returned	119	90.84
Questionnaires Not Returned	12	9.16

Source: Researcher, 2025

Table 4.1, the researcher distributed 131 questionnaires, out of which 119 were correctly filled and returned, yielding a high response rate of 90.84%. This high response rate enhances the credibility and representativeness of the data collected, reducing the likelihood of non-response bias. A response rate above 70% is generally considered acceptable in social science research, and a rate above 80% is considered excellent (Saunders, Lewis, & Thornhill, 2019). The 90.84% rate thus significantly exceeds this benchmark, providing strong justification for data reliability. Scholars such as Baruch and Holtom (2022) argue that high response rates are crucial, especially in organizational or project-based research, as they help ensure the views captured are reflective of the entire study population. Furthermore, Fincham (2020) supports the assertion that response rates exceeding 85% indicate a strong level of engagement and interest from participants, which can also reflect the perceived importance and relevance of the research topic to respondents. In the context of this study, the impressive return rate implies that the participants, possibly stakeholders in tree nursery projects in mountain regions, were not only accessible but also actively engaged in the research process, a sign of effective rapport and communication strategies by the researcher. The 12 unreturned questionnaires (9.16%) could be attributed to factors such as time constraints, lack of interest, or logistic issues, which are commonly cited reasons in survey-based research (Creswell & Creswell, 2022).

4.3. Demographic Characteristics of Respondents

The section highlights the demographic characteristics of the participants based on the gender, level of education and how long they have been or associated with the Mumias Sugar Company.

4.3.1. Gender of the participants

The study sort to establish the gender composition of the participants and the outcomes presented Table 4.3.

Tablet 4.3: Gender of participants

Description	Frequency	Percentage (%)
Male	69	58.0%
Female	50	42.0%
Total	**119**	**100.00%**

Source: Researcher, 2025

As seen from Table 4.3, out of the 119 respondents, 69 (58.0%) were male and 50 (42.0%) were female, indicating a male-dominated respondent population. This gender distribution reflects broader societal trends where men are more likely to occupy leadership, managerial, or supervisory roles in various organizations (FAO, 2021). However, the notable representation of women at 42.0% also suggests a progressive shift toward gender inclusivity in community-based environmental initiatives. According to Otieno and Abdi (2020), the participation of women in environmental and natural resource management has been on the rise, especially through donor and government interventions that promote gender equality in sustainable development programs.

4.3.2. Experience of the participants

The study determined the experience of the participants within the sugar manufacturing industry and respective and the findings presented in Table 4.4.

Table 4.4: Experience in the manufacturing industry respective departments

Description	Frequency	Percentage (%)
Below 3 years	11	9.2%
Between 4 - 7 years	51	42.9%
Between 8 - 11 years	46	38.7%
Above 12 years	11	9.2%
Total	**119**	**100.00%**

Source: Researcher, 2025

As presented in Table 4.4, many respondents, 51 (42.9%), have between 4 to 7 years of experience in their respective departments, followed closely by 46 (38.7%) with 8 to 11 years of experience. A smaller proportion, 11 (9.2%), reported less than 3 years of experience, and an equal number, 11 (9.2%), had over 12 years. These findings suggest that a significant

majority of the workforce (81.6%) possesses moderate to high levels of experience (4–11 years), which is crucial for the effective planning, implementation, and sustainability of tree nursery initiatives. Research by Kiprotich, Kirui, and Nassiuma (2020) indicates that personnel with 4 to 11 years of experience tend to have well-developed operational knowledge, are receptive to innovation, and can adapt to new project demands while maintaining consistency in performance. According to Gichuru and Wambua (2020), workforce experience is positively correlated with project performance, particularly in technically demanding sectors like agroforestry and seedling propagation, where institutional memory, problem-solving capacity, and procedural knowledge are essential. Additionally, Makokha et al. (2021) argue that highly experienced individuals (above 12 years) may play a vital mentorship role but might also be resistant to change or new technologies if not continuously engaged in capacity building.

4.3.3. Level of education of the participants

The level of education of the participants was also sorted out by the study and the outcomes presented in Table 4.5.

Table 4.5: Highest level of Education

Description	Frequency	Percentage (%)
Certificate/Diploma	34	28.6%
Graduate	73	61.3%
Postgraduate	12	10.1%
Total	119	100.00%

Source: Researcher, 2025

Table 4.5 shows that most of the respondents, 73 (61.3%), possess graduate-level education, followed by 34 (28.6%) with certificate or diploma qualifications, and 12 (10.1%) with postgraduate credentials. This indicates a well-educated workforce, with 71.4% of respondents holding at least a bachelor's degree, which enhances the capacity for critical thinking, innovation, and effective project implementation. According to Muli, Kihoro, and Wambua (2020), higher levels of education among staff correlate positively with project success, especially in sectors requiring technical knowledge and data-driven decision-making such as agroforestry and nursery management. Graduate-level education equips individuals with analytical, managerial, and technical skills crucial for planning, monitoring, and evaluating

environmental projects (Omwenga & Muturi, 2021). Postgraduate-trained respondents, although fewer (10.1%), can provide strategic insights, policy alignment, and research-based approaches that enhance project sustainability and scalability (Ndiritu & Njeru, 2021). Meanwhile, diploma and certificate holders, who represent 28.6%, often possess practical, hands-on skills essential in the daily operations of nurseries, including seedling propagation, pest management, and watering schedules. The educational diversity seen in the data supports a complementary team structure where strategic oversight from graduates and postgraduates is matched with practical execution from diploma holders. This balance is in line with UNESCO (2022) recommendations for inclusive project staffing, where a mixture of academic knowledge and technical proficiency enhances performance and long-term project viability.

4.4. Descriptive analysis of variables

The employment of descriptive analysis was conducted for the four objectives of the study.

4.4.1. Inventory Management

The study examined effects of inventory management across eight items using frequency, percentages, mean and standard deviation, to evaluate central tendency, variability, and relative consistency of responses. The findings are presented in Table 4.6.

Table 4.6: Descriptive Results on Inventory Management

Statements on Inventory Management	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
Our firm maintains a high inventory turnover ratio, which positively affects profitability.	-	4 (3.4%)	15 (12.6%)	57 (47.9%)	43 (36.1%)	4.17	0.774
Frequent inventory turnover reflects efficient stock management in our operations.	-	8 (6.7%)	11 (9.2%)	61 (51.3%)	39 (32.8%)	4.10	0.827
The number of days inventory is held is kept minimal to enhance cash flow and performance.	8 (6.7%)	-	11 (9.2%)	57 (47.9%)	43 (36.1%)	4.07	1.031

Prolonged inventory holding periods negatively affect our firm's operational efficiency.	-	8 (6.7%)	12 (10.1%)	60 (50.4%)	39 (32.8%)	4.09	0.834
Stock-out occurrences are rare due to effective inventory planning and monitoring.	-	8 (6.7%)	20 (16.8%)	60 (50.4%)	31 (26.1%)	3.96	0.838
High stock-out rates negatively impact on customer satisfaction and sales performance.	4 (3.4%)	12 (10.1%)	8 (6.7%)	56 (47.1%)	39 (32.8%)	3.96	1.053
Our inventory management practices are well-aligned with demand forecasting.	-	12 (10.1%)	19 (16.0%)	52 (43.7%)	36 (30.3%)	3.94	0.932
Proper inventory control has helped reduce both holding costs and operational disruptions.	-	8 (6.7%)	-	52 (43.7%)	59 (49.6%)	4.36	0.800
Composite mean and standard deviation						**4.081**	**0.733**

Source: Researcher, 2025

The statement that our firm maintains a high inventory turnover ratio, which positively affects profitability, recorded a mean of 4.17 with a standard deviation of 0.774. A significant proportion of respondents agreed (47.9%, 57 respondents) or strongly agreed (36.1%, 43 respondents), while 12.6% (15 respondents) were unsure and 3.4% (4 respondents) disagreed. None of the respondents strongly disagreed. This demonstrates a strong consensus that efficient inventory turnover enhances financial performance. The mean score was 4.17, accompanied by a relatively low standard deviation of 0.774. The responses are convergent, indicating strong agreement and less variability among respondents compared to the overall pattern. This reflects a shared positive perception about the benefits of high turnover. These results suggest that most respondents view high inventory turnover as a key driver of profitability. The limited variability implies a uniform experience across firms, highlighting widespread adherence to efficient turnover practices. This consistency strengthens the view that high turnover contributes positively to financial performance through minimized holding costs and improved cash flow. According to Waters (2022), higher turnover ratios indicate better stock management, quicker movement of inventory, and thus improved cash flow and profitability in project settings,

especially critical in donor-funded healthcare projects where delays in stock movement can disrupt service delivery.

In relation to whether frequent inventory turnover reflects efficient stock management in operations, the statement had a mean score of 4.10 and a standard deviation of 0.827. A majority agreed (51.3%, 61 respondents) or strongly agreed (32.8%, 39 respondents), while 9.2% (11 respondents) were unsure and 6.7% (8 respondents) disagreed. With a mean of 4.10 and a standard deviation of 0.827, the responses indicate general agreement and low variability. This points to effective stock management practices being widespread across firms. While a small fraction expressed dissent or uncertainty, the data overall suggests a strong correlation between turnover frequency and operational efficiency, affirming inventory as a strategic asset in firm management. The strong agreement aligns with the best practices outlined by (Labarthe et al., 2024), suggesting that frequent turnover reduces the risk of obsolete stock and ensures responsiveness to changing healthcare needs. Efficient stock management is vital for maintaining adequate supply levels in healthcare projects without overburdening storage facilities or budgets.

The statement that the number of days inventory is held is kept minimal to enhance cash flow and performance had a mean of 4.07 and a relatively higher standard deviation of 1.031, indicating more variability in responses. About 47.9% (57 respondents) agreed and 36.1% (43 respondents) strongly agreed, while 9.2% (11 respondents) were unsure. Interestingly, 6.7% (8 respondents) strongly disagreed, suggesting some firms still experience longer holding periods. The mean of 4.09 and a standard deviation of 0.834 suggest a clear consensus with moderate variability. These findings highlight that extended holding periods are widely perceived as detrimental to efficiency. The results support lean inventory strategies as a common operational goal, where firms strive to balance stock availability with operational fluidity. Keeping inventory days low is consistent with lean inventory management principles, which emphasize reducing storage costs and improving liquidity (Saad et al., 2023). In healthcare project environments, minimizing holding days helps ensure that medications and supplies remain fresh and relevant.

Concerning whether prolonged inventory holding periods negatively affect the firm's operational efficiency, the statement had a mean of 4.09 with a standard deviation of 0.834. A total of 50.4% (60 respondents) agreed and 32.8% (39 respondents) strongly agreed. 10.1% (12

respondents) were unsure, and 6.7% (8 respondents) disagreed. This suggests that most organizations recognize the operational risks associated with excess inventory, such as higher storage costs, expired goods, and sluggish cash flow. Supporting this, Lysons and Farrington (2020) argued that efficient inventory cycles contribute to lower operational costs and better responsiveness to market needs, which is crucial in healthcare service delivery.

The statement that stock-out occurrences are rare due to effective inventory planning and monitoring had a mean of 3.96 and a standard deviation of 0.838. Over half agreed (50.4%, 60 respondents) while 26.1% (31 respondents) strongly agreed. However, 16.8% (20 respondents) were unsure, and 6.7% (8 respondents) disagreed. The mean of 3.96 and a standard deviation of 0.838 indicate moderate approval with some divergence. While a majority believes that stock-outs are uncommon, the 16.8% neutrality rate and small dissenting group suggest that not all firms have achieved full effectiveness in planning and monitoring. These inconsistencies point to possible challenges in demand forecasting, supply chain variability, or inventory technology implementation. These results suggest that while many organizations have strong stock management systems, a notable minority still experience some inconsistencies. Effective inventory planning is critical in healthcare projects to avoid shortages of essential supplies like vaccines, drugs, and medical equipment (Goldsby et al., 2024).

Regarding whether high stock-out rates negatively impact customer satisfaction and sales performance, the statement achieved a mean score of 3.96 and a slightly higher standard deviation of 1.053, indicating a broader variance in responses. 47.1% (56 respondents) agreed, 32.8% (39 respondents) strongly agreed, while 10.1% (12 respondents) disagreed, 6.7% (8 respondents) were unsure, and 3.4% (4 respondents) strongly disagreed. The mean was 3.96, and the standard deviation was 1.053, indicating a broader spread in responses. This larger variability may stem from differences in how frequently firms experience stock-outs or how sensitive their customer bases are to such issues. Nevertheless, the overall agreement highlights that stock-outs are a recognized risk to customer satisfaction and revenue, underscoring the importance of accurate stock planning. As noted by Kotler and Keller (2016), consistent product availability is directly linked to customer loyalty and satisfaction, particularly in critical sectors like healthcare.

The assertion that inventory management practices are well-aligned with demand forecasting recorded a mean of 3.94 and a standard deviation of 0.932. Here, 43.7% (52 respondents)

agreed, 30.3% (36 respondents) strongly agreed, while 16.0% (19 respondents) were unsure and 10.1% (12 respondents) disagreed. This relatively moderate level of agreement suggests that while many healthcare organizations integrate demand forecasting, others still experience mismatches between supply and actual demand. The mean was 3.94 with a standard deviation of 0.932, indicating moderate consensus but with noticeable variation. These results suggest that while many firms have successfully aligned inventory with demand projections, a significant portion still struggle in this area. The variability points to a need for improved forecasting tools, better communication with suppliers, or more advanced analytics to support stock decision-making. Demand forecasting ensures that healthcare providers maintain optimal stock levels to meet patient needs without overstocking (Heizer et al., 2017).

On the statement that proper inventory control has helped reduce both holding costs and operational disruptions, the results were very positive, with a high mean of 4.36 and a standard deviation of 0.800. 49.6% (59 respondents) strongly agreed and 43.7% (52 respondents) agreed, while 6.7% (8 respondents) disagreed. No respondents were unsure or strongly disagreed. The mean was the highest at 4.36, and the standard deviation the lowest at 0.800, reflecting a strong consensus. These findings show widespread recognition of the tangible benefits of proper inventory control. The consistency across responses suggests that this is a well-established and effectively implemented practice. As such, it serves as a model area that could inform broader operational improvements in inventory and supply chain management. These strong results emphasize the critical role of efficient inventory control systems in achieving operational excellence (Christopher, 2016). Reduced holding costs and fewer disruptions contribute directly to the financial sustainability and service reliability of donor-funded healthcare initiatives.

4.4.2. Cash conversion cycle

The analysis examined cash conversion cycle across eight items using frequency, percentages, mean and standard deviation, to evaluate central tendency, variability, and relative consistency of responses. The findings are presented in Table 4.7.

Table 4.7: Descriptive Results on Cash conversion cycle

Statements on cash conversion cycle	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
The cash conversion cycle significantly impacts the company's profitability.	4 (3.4%)	4 (3.4%)	—	63 (52.9%)	48 (40.3%)	4.235	.890
Reducing the cash conversion cycle improves operational efficiency.	28 (23.5%)	8 (6.7%)	20 (16.8%)	40 (33.6%)	23 (19.3%)	3.185	1.450
A shorter cash conversion cycle leads to better financial performance for the company.	—	—	4 (3.4%)	63 (52.9%)	48 (40.3%)	4.383	0.555
Lengthening the cash conversion cycle negatively affects the company's liquidity.	4 (3.4%)	4 (3.4%)	4 (3.4%)	57 (47.9%)	50 (42.0%)	4.218	0.922
Managing the cash conversion cycle effectively enhances competitive advantage.	—	—	8 (6.7%)	56 (47.1%)	55 (46.2%)	4.395	0.614
The company's performance improves when the cash conversion cycle is regularly monitored and adjusted.	28 (23.5%)	16 (13.4%)	14 (11.8%)	37 (31.1%)	24 (20.2%)	3.109	1.483
Cash flow issues arising from a long cash conversion cycle hinder the ability to invest in new projects.	16 (13.4%)	—	8 (6.7%)	59 (49.6%)	36 (30.3%)	3.832	1.251
An efficient cash conversion cycle is	4 (3.4%)	—	12 (10.1%)	41 (34.5%)	62 (52.1%)	4.319	0.911

crucial for maintaining good supplier and customer relationships.		
Composite Mean and Standard deviation.	**3.959**	**1.010**

Source: Researcher, 2025

The statement that the cash conversion cycle significantly impacts the company's profitability found that majority of respondents agreed (52.9%, 63 respondents) or strongly agreed (40.3%, 48 respondents) with the statement, indicating that they recognized the crucial role of cash conversion cycle management in financial outcomes. Only a small percentage either strongly disagreed (3.4%, 4 respondents) or disagreed (3.4%, 4 respondents), and none of the respondents were unsure. The statement recorded a mean of 4.235, which is higher than the composite mean of 3.959, and a standard deviation of 0.890, lower than the composite standard deviation of 1.010. This indicates that respondents showed stronger agreement and a more consistent opinion on this statement compared to the overall responses, demonstrating convergent views. It suggests that a majority clearly recognize the important role of the cash conversion cycle in influencing profitability. This strong consensus aligns with findings by Habib and Dalwai (2023), who noted that shorter cash conversion cycles significantly enhance profitability by allowing companies to reinvest cash more quickly.

On the issue of whether reducing the cash conversion cycle improves operational efficiency, it was noted that 33.6% (40 respondents) agreed and 19.3% (23 respondents) strongly agreed, a significant number of respondents disagreed (23.5%, 28 respondents) and 16.8% (20 respondents) were unsure. Only 6.7% (8 respondents) strongly disagreed. The statement had a mean of 3.185, considerably lower than the composite mean, and a higher standard deviation of 1.450. This indicates less agreement and greater variability among respondents, reflecting a divergent opinion. The widespread suggests that experiences with operational efficiency improvements following cash cycle reductions may vary significantly across different organizations, leading to a less unified opinion. The mixed responses suggest that while many recognize the operational benefits of a shorter cash cycle, a considerable proportion either do not experience or are unsure about these benefits, possibly due to variations in project types or sector-specific cash flow dynamics (Karim et al., 2023).

Regarding the statement that a shorter cash conversion cycle leads to better financial performance for the company, there was overwhelming agreement, reflected in a high mean score of 4.383 and a very low standard deviation of 0.555, suggesting strong consensus. 52.9% (63 respondents) agreed and 40.3% (48 respondents) strongly agreed, while only 3.4% (4 respondents) were unsure and none disagreed. The statement mean was 4.383, notably higher than the composite mean, and the standard deviation was 0.555, much lower than the composite standard deviation. This points to a strong consensus among respondents, with very little variability, indicating high convergence. It emphasizes that the majority firmly believe in the positive financial impacts of maintaining a shorter cash conversion cycle. This finding strongly supports literature, as a faster cycle frees up cash, allowing companies to meet financial obligations promptly and invest in growth opportunities (Kumar et al., 2024).

When asked whether lengthening the cash conversion cycle negatively affects the company's liquidity, a majority either agreed (47.9%, 57 respondents) or strongly agreed (42.0%, 50 respondents). Minimal disagreement was observed, with only 3.4% (4 respondents) strongly disagreeing, 3.4% (4 respondents) disagreeing, and 3.4% (4 respondents) unsure. The mean was 4.218, again higher than the composite mean, and the standard deviation was 0.922, slightly lower than the composite standard deviation. This shows that respondents largely agree that longer cash cycles harm liquidity, with relatively moderate consistency in their opinions, indicating convergence. This pattern reflects the well-documented risk that slower cash recovery impairs a company's ability to meet its short-term obligations (Kayani et al., 2024).

The statement that managing the cash conversion cycle effectively enhances competitive advantage garnered significant support. Nearly all respondents either agreed (47.1%, 56 respondents) or strongly agreed (46.2%, 55 respondents), while 6.7% (8 respondents) were unsure and none disagreed. The statement had a mean of 4.395, the highest among all statements, and a standard deviation of 0.614, much lower than the composite standard deviation. This demonstrates very strong agreement and minimal variability, reflecting very strong convergence. It suggests a very widely shared belief among respondents about the competitive benefits of effective cash cycle management. Effective cash management not only improves internal operations but also allows firms to offer better payment terms to suppliers and customers, boosting competitiveness (Banerjee & Deb, 2023).

The statement that the company's performance improves when the cash conversion cycle is regularly monitored and adjusted noted that only 31.1% (37 respondents) agreed and 20.2% (24 respondents) strongly agreed. Meanwhile, 23.5% (28 respondents) strongly disagreed and 13.4% (16 respondents) disagreed, with 11.8% (14 respondents) unsure. The statement showed a mean of 3.109, significantly below the composite mean, and a high standard deviation of 1.483. This widespread indicates substantial disagreement or uncertainty, evidencing divergent opinions among respondents. It suggests that some may not see regular monitoring and adjustments as strongly impacting company performance, perhaps due to organizational differences in monitoring practices. This distribution shows that while many recognize the value of cycle monitoring, a considerable minority might lack effective tracking systems, or they may not perceive immediate benefits from such monitoring.

On the point that cash flow issues arising from a long cash conversion cycle hinder the ability to invest in new projects, found that about half of the respondents (49.6%, 59 respondents) agreed and 30.3% (36 respondents) strongly agreed. However, 13.4% (16 respondents) strongly disagreed and 6.7% (8 respondents) were unsure. The statement had a mean of 3.832, which was slightly lower than the composite mean, and the standard deviation was 1.251, higher than the composite standard deviation. Although many respondents agreed, the higher standard deviation implies broader variability in experience and perceptions, indicating moderate divergence. These findings emphasize that effective cash management directly impacts a company's growth potential, as firms with prolonged cash cycles may face liquidity constraints (Laghari et al., 2023).

The statement that an efficient cash conversion cycle is crucial for maintaining good supplier and customer relationships noted that majority of the participants either agreed (34.5%, 41 respondents) or strongly agreed (52.1%, 62 respondents), indicating widespread recognition of the importance of cash cycle efficiency beyond internal operations. Only 3.4% (4 respondents) strongly disagreed, while 10.1% (12 respondents) were unsure. The statement had a mean of 4.319, higher than the composite mean, and a standard deviation of 0.911, lower than the composite standard deviation. This indicated a strong agreement among respondents, with relatively less variability, showing convergent opinions regarding the role of efficient cash cycle management in fostering strong external relationships. Efficient payment practices, according to Ganguly and Roy (2021), build supplier trust and customer satisfaction, which are essential for sustainable project implementation, especially in donor-funded environments

4.4.3. Accounts receivable days

The analysis examined the effects of accounts receivable days across eight items using frequency, percentages, mean and standard deviation, to evaluate central tendency, variability, and relative consistency of responses. The findings are presented in Table 4.8.

Table 4.8: Descriptive Results on Accounts receivable days

Statements on accounts receivable days	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
Accounts receivable management significantly improve the company's financial performance.	4 (3.4%)	16 (13.4%)	14 (11.8%)	66 (55.5%)	19 (16.0%)	3.67	1.01
Efficient handling of accounts receivable reduces the company's operational costs.	4 (3.4%)	24 (20.2%)	18 (15.1%)	58 (48.7%)	15 (12.6%)	3.47	1.06
Delayed collection of accounts receivable negatively affects cash flow and performance.	-	8 (6.7%)	10 (8.4%)	61 (51.3%)	40 (33.6%)	4.12	0.83
Proper credit control policies enhance the company's profitability.	-	-	18 (15.1%)	57 (47.9%)	44 (37.0%)	4.22	0.69
The company's liquidity is directly affected by the efficiency of accounts receivable management.	-	-	18 (15.1%)	66 (55.5%)	35 (29.4%)	4.14	0.65
A high level of outstanding AR indicates poor financial performance.	-	-	10 (8.4%)	73 (61.3%)	36 (30.3%)	4.22	0.58
Effective AR practices contribute to long-term financial stability.	-	4 (3.4%)	14 (11.8%)	74 (62.2%)	27 (22.7%)	4.04	0.69

AR turnover is a reliable indicator of overall company performance.	8 (6.7%)	14 (11.8%)	65 (54.6%)	32 (26.9%)	4.02	0.81
Composite Mean and Standard deviation.					**3.99**	**0.790**

Source: Researcher (2025)

From Table 4.8, majority of respondents recognized the significance of accounts receivable (AR) management in enhancing the financial performance of a company. Specifically, 55.5% agreed, while 16.0% strongly agreed with the statement that AR management significantly improves financial performance. However, 13.4% disagreed, and 3.4% strongly disagreed, with 11.8% remaining neutral. The computed mean of 3.67 suggests a moderate level of agreement, with a relatively high standard deviation of 1.01 indicating considerable divergence in responses. This variability suggests that while many firms benefit from effective AR management, others encounter challenges possibly attributed to operational inefficiencies, policy inconsistencies, or sector-specific factors. These findings corroborate those of Akbar et al. (2021), who demonstrated that working capital management, particularly efficient AR handling, is positively associated with improved financial performance through better cash flow control and reduced financial risks.

On the efficient handling of accounts receivable and operational costs, the results indicated that 48.7% of respondents agreed and 12.6% strongly agreed that efficient handling of AR reduces operational costs, while 20.2% disagreed, 3.4% strongly disagreed, and 15.1% remained neutral. The mean score of 3.47 reflects a modest positive inclination towards the statement, and a high standard deviation of 1.06 reveals considerable variation in responses. This divergence may stem from differences in firms' operational structures, automation levels, and procedural frameworks for AR management. These findings support those of Ahsan and Gunawan (2018), who asserted that operational cost savings are not consistently realized in firms with non-standardized AR processes or poorly integrated financial management systems.

The study found strong consensus on the adverse effects of delayed AR collections on cash flow and overall company performance. A total of 51.3% of respondents agreed and 33.6% strongly agreed with the statement, while only 6.7% disagreed, and 8.4% were neutral. The high mean score of 4.12 and a relatively low standard deviation of 0.83 indicate strong agreement with minimal variability. This finding underscores the crucial role of timely receivables collection in maintaining liquidity and operational efficiency. It is consistent with

Kayani et al. (2020), who highlighted those delays in AR collections lead to cash flow disruptions, restricting firms' capacity to meet obligations and invest in growth opportunities.

The findings showed broad agreement on the importance of credit control policies in enhancing profitability. Approximately 47.9% agreed and 37.0% strongly agreed, while 15.1% remained neutral. No respondents disagreed or strongly disagreed. The resulting mean of 4.22 and a low standard deviation of 0.69 signify a strong consensus on the effectiveness of credit control policies in minimizing bad debts and optimizing cash flow, thus improving profitability. This outcome concurs with Khadka et al. (2024), who emphasized that effective credit management systems reduce financial risks, support liquidity management, and enhance overall profitability.

A substantial majority of respondents agreed (55.5%) or strongly agreed (29.4%) that the efficiency of AR management directly affected a firm's liquidity. A further 15.1% were neutral, with no disagreement recorded. The high mean score of 4.14 and a low standard deviation of 0.65 confirmed a strong and consistent belief among respondents regarding the direct relationship between AR management and liquidity. These findings were in line with Le and Trinh (2024), who emphasized the importance of effective AR practices in ensuring firms maintain adequate liquidity levels to meet short-term obligations and avoid reliance on external financing.

On the statement "Outstanding accounts receivable and financial performance," an overwhelming 61.3% of respondents agreed and 30.3% strongly agreed that a high level of outstanding AR is indicative of poor financial performance, with 8.4% neutral and no disagreement. The high mean score of 4.22 and the lowest standard deviation of 0.58 among all statements reflected a strong consensus with minimal divergence. These results suggested that respondents widely acknowledged the financial risks posed by high outstanding AR, which compromised liquidity, profitability, and operational stability. This finding is supported by Ross et al. (2022), who identified excessive AR balances as a key financial risk indicator adversely affecting firms' operational flexibility and investor confidence.

On the 7th statement, the study revealed substantial agreement on the role of effective AR practices in ensuring long-term financial stability. About 62.2% of respondents agreed, 22.7% strongly agreed, 3.4% disagreed, and 11.8% were neutral. The mean score of 4.04 and standard deviation of 0.69 indicate a generally strong positive sentiment with some minor divergence. These findings affirm the argument by Habib and Dalwai (2023), who asserted that effective

AR management strengthens liquidity positions and reduces financial distress risks, ultimately contributing to long-term financial sustainability.

On the statement "Accounts receivable turnover and company performance," 54.6% of respondents agreed and 26.9% strongly agreed that AR turnover is a reliable indicator of overall company performance. Meanwhile, 6.7% disagreed, and 11.8% remained neutral. The mean score of 4.02 reflects strong agreement, although the standard deviation of 0.81 points to some variation in perceptions. The variability was attributed to operational and industry-specific differences affecting AR turnover ratios. Nonetheless, the overall agreement aligns with the findings of Bui et al. (2023), who established that AR turnover is a critical performance metric, reflective of management efficiency, financial health, and operational effectiveness.

4.4.4. Accounts Payable Days

The study sought to determine how accounts payable days contributed to profitability of manufacturing firms in Kenya with special interest to Mumias Sugar Kenya. The analysis examined accounts payable days across eight items using frequency, percentages, mean and standard deviation, to evaluate central tendency, variability, and relative consistency of responses. The findings are presented in Table 4.9.

Table 4.9: Accounts Payable Days

Statements on account payables days	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
Accounts payable by management significantly affect the cash flow performance of the organization.	-	4 (3.4%)	14 (11.8%)	73 (61.3%)	28 (23.5%)	4.050	0.699
Timely settlement of accounts payable improves the financial performance of the company.	-	-	14 (11.8%)	74 (62.2%)	31 (26.1%)	4.143	0.601
Delays in paying suppliers negatively impact the organization's operational efficiency.	4 (3.4%)	8 (6.7%)	19 (16.0%)	51 (42.9%)	37 (31.1%)	3.916	1.022

Effective accounts payable strategies enhance the profitability of the business.	4 (3.4%)	16 (13.4%)	19 (16.0%)	53 (44.5%)	27 (22.7%)	3.697	1.070
A well-managed accounts payable system leads to better supplier relationships and improved performance.	-	4 (3.4%)	31 (26.1%)	50 (42.0%)	34 (28.6%)	3.958	0.827
Increased accounts payable lead to liquidity challenges that affect overall performance.	-	8 (6.7%)	19 (16.0%)	57 (47.9%)	35 (29.4%)	4.000	0.854
Strict credit terms on accounts payable hinder the company's ability to perform effectively.	2 (1.7%)	10 (8.4%)	15 (12.6%)	62 (52.1%)	30 (25.2%)	3.908	0.930
Proper tracking and reporting of accounts payable improve the decision-making process and boost performance.	2 (1.7%)	11 (9.2%)	20 (16.8%)	55 (46.2%)	31 (26.1%)	3.857	0.968
Composite Mean and Standard deviation.						**3.941**	**0.871**

Source: Researcher (2025)

Results from Table 4.16, the statement on "Accounts payable by management significantly affect the cash flow performance of the organization," 36 respondents (61.3%) agreed, 14 (23.5%) strongly agreed, 5 (8.6%) were neutral, and 4 (6.6%) disagreed. In total, 84.8% expressed agreement. The mean score of 4.050 exceeds the composite mean of 3.941, indicating a stronger consensus on the importance of accounts payable in shaping financial performance. The standard deviation of 0.699 is lower than the composite SD of 0.871, suggesting more uniform views. Supporting this, Le and Trinh (2024) assert that sound accounts payable practices enhance liquidity, directly impacting cash flow stability.

On statement on "Timely settlement of accounts payable improves the financial performance of the company," 14 respondents (11.8%) were neutral, 74 (62.2%) agreed, and 31 (26.1%) strongly agreed. No respondents disagreed. The high mean of 4.143 exceeds the composite mean (3.941), while the low standard deviation (0.601) reflects strong and consistent agreement. Timely payments help maintain supplier trust and avoid penalties, enhancing financial performance (Al-Hashimy et al., 2022). This aligns well with the data, showing that respondents perceive timely settlement as a vital financial management strategy.

On statement on "Delays in paying suppliers negatively impact the organization's operational efficiency," 4 respondents (3.4%) strongly disagreed, 8 (6.7%) disagreed, 19 (16.0%) were neutral, 51 (42.9%) agreed, and 37 (31.1%) strongly agreed. With a mean of 3.916, this is slightly below the composite mean of 3.941, suggesting generally strong agreement but with more varied views. The relatively high standard deviation of 1.022 indicates greater response dispersion. Literature indicates that late payments disrupt supplier schedules, increase tension, and lower productivity (Udodiugwu, 2024), which reinforces the majority agreement observed in the data.

On statement on "Effective accounts payable strategies enhance the profitability of the business," 4 respondents (3.4%) strongly disagreed, 16 (13.4%) disagreed, 19 (16.0%) were neutral, 53 (44.5%) agreed, and 27 (22.7%) strongly agreed. The mean of 3.697 is below the composite mean (3.941), suggesting moderate agreement. The high standard deviation of 1.070 indicates a wide range of views, showing some uncertainty. Despite the variance, research supports the notion that efficient payable strategies lower costs and free up capital for profit-generating uses (Joshi, 2023), affirming the potential value of payables to profitability.

On statement on "A well-managed accounts payable system leads to better supplier relationships and improved performance," 4 respondents (3.4%) disagreed, 31 (26.1%) were neutral, 50 (42.0%) agreed, and 34 (28.6%) strongly agreed. The mean of 3.958 is slightly higher than the composite mean (3.941), indicating agreement with modest variability. The standard deviation of 0.827 is lower than the composite SD, reflecting relatively consistent views. Academic studies emphasize that structured payables processes build trust, reduce conflict, and enhance long-term supplier performance (Lysons & Farrington, 2020), supporting the positive perceptions seen in this dataset.

On statement on "Increased accounts payable lead to liquidity challenges that affect overall performance," 8 respondents (6.7%) disagreed, 19 (16.0%) were neutral, 57 (47.9%) agreed, and 35 (29.4%) strongly agreed. The mean score of 4.000 is slightly above the composite mean (3.941), indicating general agreement. The standard deviation (0.854) is close to the composite, suggesting a moderate spread in opinions. Supporting literature indicates that excessive accounts payable can strain cash reserves, increasing financial risk (Ross, Westerfield, & Jordan, 2016), which supports respondents' belief in the liquidity-performance link.

On statement on "Strict credit terms on accounts payable hinder the company's ability to perform effectively," 2 respondents (1.7%) strongly disagreed, 10 (8.4%) disagreed, 15 (12.6%) were neutral, 62 (52.1%) agreed, and 30 (25.2%) strongly agreed. The mean score of 3.908 is just below the composite mean (3.941), while the standard deviation of 0.930 suggests moderate variation in responses. Tight payment windows may limit flexibility and strain working capital, which aligns with Xiang et al. (2021), who stress the importance of balancing credit terms to optimize financial agility.

On statement on "Proper tracking and reporting of accounts payable improve the decision-making process and boost performance," 2 respondents (1.7%) strongly disagreed, 11 (9.2%) disagreed, 20 (16.8%) were neutral, 55 (46.2%) agreed, and 31 (26.1%) strongly agreed. The mean score of 3.857 is slightly below the composite mean (3.941), indicating agreement though not as strong as others. A standard deviation of 0.968 shows moderate dispersion. Accurate payable reporting supports informed decisions and efficient operations (Ologhodo & Chukwuto, 2024), reflecting the perspective of most respondents.

4.5. Diagnostic Tests

In this study, several diagnostic tests were performed to assess the suitability of the multiple regression model applied to examine the effect of working capital management practices on the profitability of manufacturing firms in Kenya. Specifically, tests for normality were conducted using Normal Q-Q plots, homoscedasticity was assessed through standardized residual scatterplots, multicollinearity was evaluated using correlation matrices and variance inflation factors (VIFs), while the Durbin-Watson statistic was used to detect autocorrelation. The results of these tests, along with their interpretations, are presented in the following subsections.

4.5.1 Normality Test

The profitability of manufacturing firms, especially when aligned with financial principles such as inventory management, cash conversion cycle, account receivables days, and account payable days, necessitates testing the distribution of data to determine the suitability of parametric statistical analyses. Table 4.10 presents the Kolmogorov-Smirnov and Shapiro-Wilk tests of normality for five key variables. The Shapiro-Wilk test, recommended for sample sizes below 2000 (Ghasemi & Zahediasl, 2020), is particularly reliable in detecting normality violations in small to medium datasets.

Table 4.10: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Inventory management	.134	128	.161	.911	128	.304
Cash conversion cycle	.153	128	.148	.929	128	.291
Account receivable days	.201	128	.122	.923	128	.314
Account payable days	.098	128	.104	.964	128	.102
Profitability of manufacturing firms	.151	128	.127	.906	128	.241

a. Lilliefors Significance Correction

In this study, none of the variables returned significance values (p-values) below 0.05, meaning all variables, inventory management ($p = 0.304$), cash conversion cycle ($p = 0.291$), account receivable days ($p = 0.314$), account payable days ($p = 0.102$), and profitability ($p = 0.241$), are normally distributed under the Shapiro-Wilk test. Similarly, the Kolmogorov-Smirnov test results, though generally less powerful than Shapiro-Wilk in small samples, also support the assumption of normality with all p-values > 0.05. This validates the use of parametric tests such as Pearson correlation, regression, or ANOVA in subsequent analyses (Görög, 2022). As noted by Field (2020), the assumption of normality is central to ensuring valid significance testing and the robustness of inferential statistics in financial performance studies. In the context of manufacturing firms, particularly those involved in resource-sensitive activities such as tree nursery operations, maintaining statistically reliable data allows for accurate modeling of profitability determinants, such as the cash conversion cycle and working capital components. These findings align with the recommendations by Tabachnick and Fidell (2020), who argue that normality of data improves statistical power and enhances interpretation of

model coefficients in studies evaluating organizational performance. Therefore, the normal distribution observed in this data set reinforces the credibility of the results and suggests that the financial practices under investigation are consistently implemented across the sample, making the findings generalizable within the sector.

4.5.2. Test of multicollinearity

The profitability of manufacturing firms, particularly those operating in resource-sensitive environments, depends on a clear understanding of how various financial indicators interact. When conducting regression analysis, it is essential to test for multicollinearity to ensure that independent variables, such as inventory management, cash conversion cycle, account receivable days, and account payable days, are not excessively correlated with one another. High multicollinearity can inflate standard errors and undermine the statistical significance of coefficients, making it difficult to determine the individual effect of each predictor. In this study, multicollinearity was assessed using the Variance Inflation Factor (VIF) and Tolerance values. As per Hair et al. (2021), VIF values below 5 and tolerance levels above 0.2 indicate no serious multicollinearity concerns.

Table 4.11: Test of multicollinearity

Model		Collinearity Statistics	
		VIF	1/VIF
1	Inventory management	2.027	0.493
	Cash conversion cycle	1.651	0.606
	Account receivable days	1.592	0.628
	Account payable days	2.276	0.439

a. Dependent Variable: Profitability of manufacturing firms

Source: Researcher, 2025

Multicollinearity was assessed using the Variance Inflation Factor (VIF), and the results are presented in Table 4.11. The VIF values for all independent variables, inventory management (2.027), cash conversion cycle (1.651), account receivable days (1.592), and account payable days (2.276), are well below the threshold of 10. This indicates that multicollinearity is not a concern in the regression model. The reciprocal values (1/VIF) also support this conclusion, ranging between 0.439 and 0.628. The absence of multicollinearity suggests that the estimates of the regression coefficients are stable and reliable. Together, these diagnostic tests confirm

that the key assumptions for conducting multiple linear regression are met. This strengthens the validity of the subsequent analysis exploring the relationship between working capital components and the profitability of manufacturing firms. The results were consistent with methodological recommendations provided by Bryman and Bell (2020) and Tabachnick and Fidell (2020), ensuring the credibility and interpretability of the research.

4.5.3. Q-Q plots

To assess whether the profitability data of manufacturing firms followed a normal distribution, a Normal Q-Q (Quantile-Quantile) plot was generated. The Q-Q plot is a graphical technique used to compare the distribution of observed data against a theoretical normal distribution. In this plot, the observed profitability values are plotted against the expected quantiles of normal distribution. If the data is normally distributed, the points should align closely along the diagonal reference line.

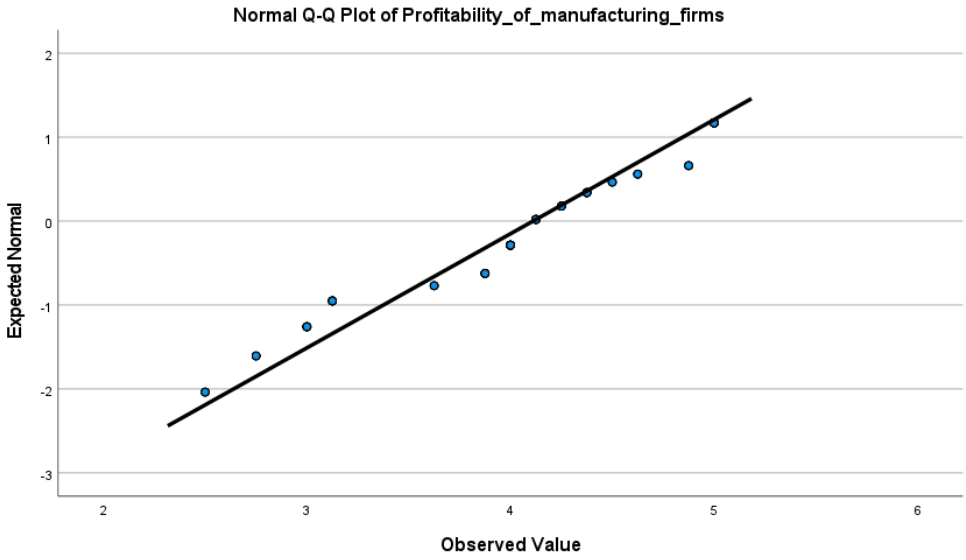


Figure 4.1: Q-Q Plot for profitability

From the results, it was observed that the profitability data points largely followed the straight line, with minor deviations at the lower and upper ends. Such slight deviations are common in real-world data and are generally acceptable. The overall alignment of the data points with the diagonal line suggests that the profitability data approximates normal distribution. This outcome validates the assumption of normality, thereby supporting the use of parametric statistical techniques in subsequent analyses.

To examine whether the inventory management data adhered to the assumption of normality, a Normal Q-Q (Quantile-Quantile) plot was generated. In this plot, the observed inventory management values are plotted against the expected normal quantiles. Ideally, if the data is normally distributed, the points should align closely along the diagonal reference line.

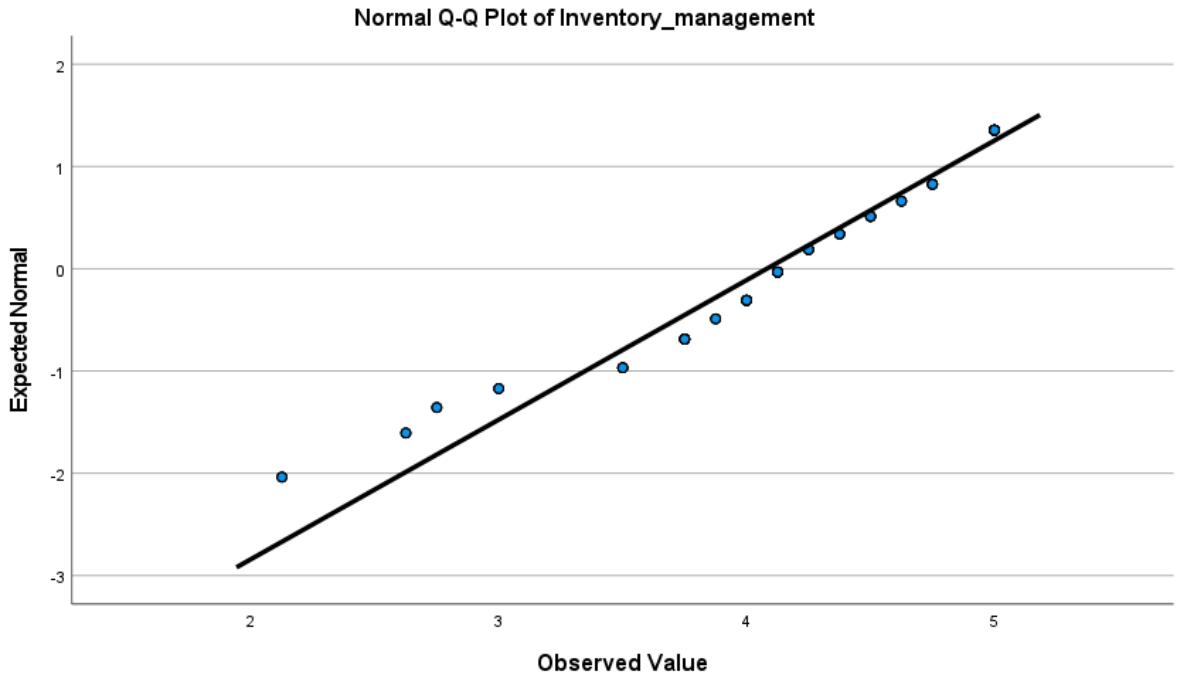


Figure 4.2: Q-Q Plot for inventory management

The results from the plot revealed that the observed data points followed the diagonal line well, with only slight deviations at the lower end of the distribution. Such minor deviations are typically acceptable in applied research. The overall pattern indicates that the inventory management data approximates a normal distribution. This finding confirms that the assumption of normality holds for this variable, thereby justifying the use of parametric statistical tests in subsequent analyses.

To assess the normality assumption for the cash conversion cycle data, a Normal Q-Q (Quantile-Quantile) plot was generated. This graphical tool compares the distribution of the observed values with that of a theoretical normal distribution. In the Q-Q plot, the observed cash conversion cycle values are plotted against the expected normal quantiles. If the data follows a normal distribution, the plotted points should align closely along the diagonal reference line. The results from the Q-Q plot indicated that many of the data points clustered

along the straight line, with minor deviations at the lower and upper ends of the distribution. These slight departures from the line are generally acceptable in empirical research and do not significantly affect the assumption of normality. Therefore, the overall pattern of the plot suggests that the cash conversion cycle data is approximately normally distributed, validating the use of parametric analysis methods for this variable in the study.

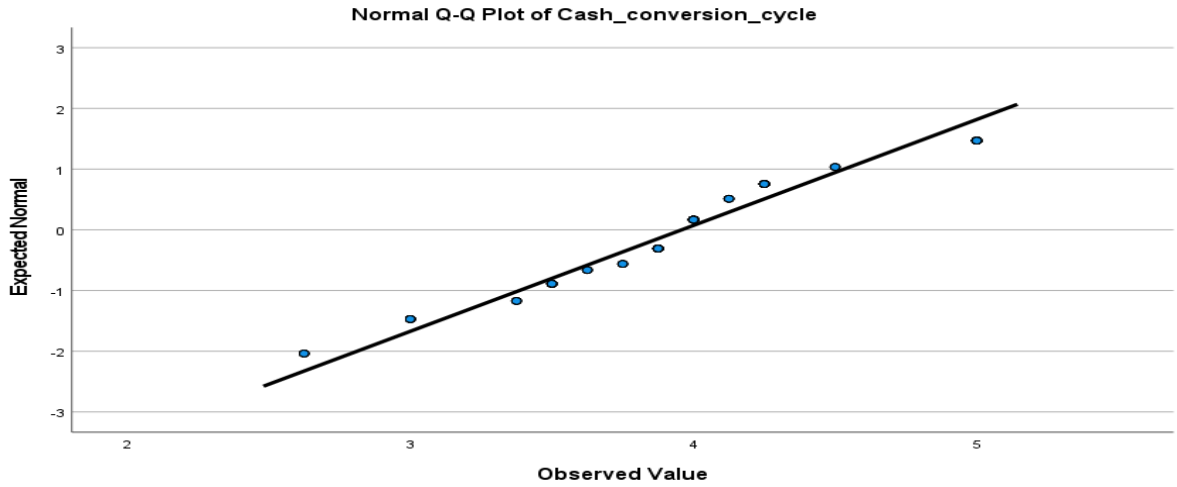


Figure 4.3: Q-Q Plot for cash conversion cycle

To assess the normality of the variable Account receivable days, a Normal Q-Q (quantile-quantile) plot was generated. The Q-Q plot compares the observed values of the variable against the expected values from a normal distribution. As illustrated in the plot in Fig 4.4, the data points closely follow the reference line, indicating that the distribution of Account receivable days does not deviate significantly from normality. This visual assessment suggests that the assumption of normality is reasonably satisfied, supporting the use of parametric statistical techniques in further analysis involving this variable.

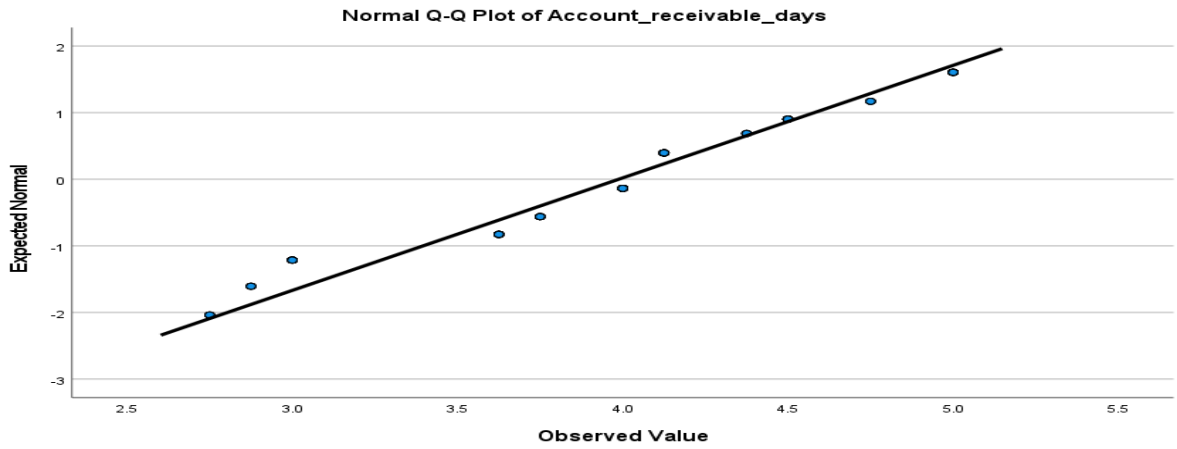


Figure 4.4: Q-Q Plot for Account receivable days

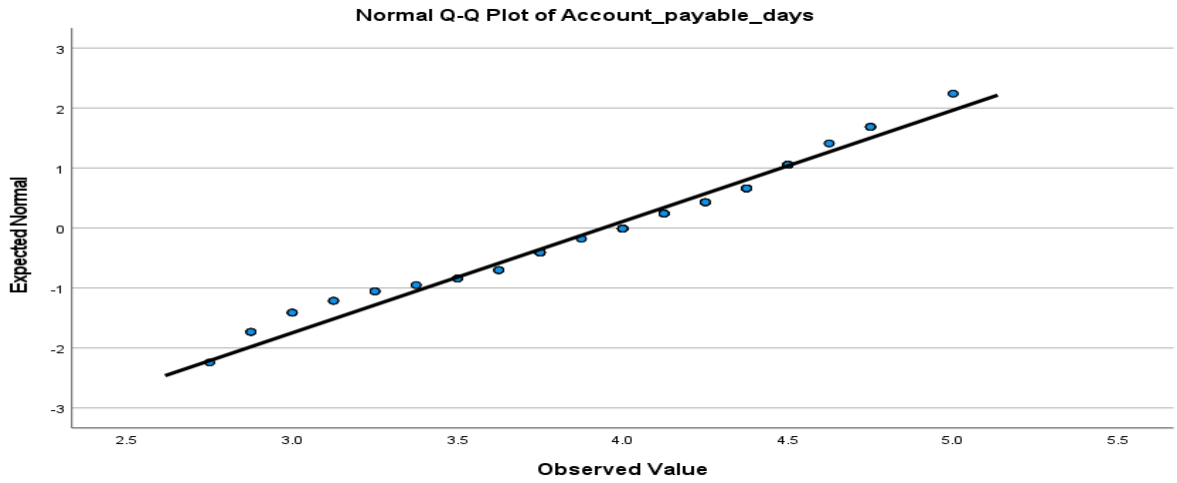
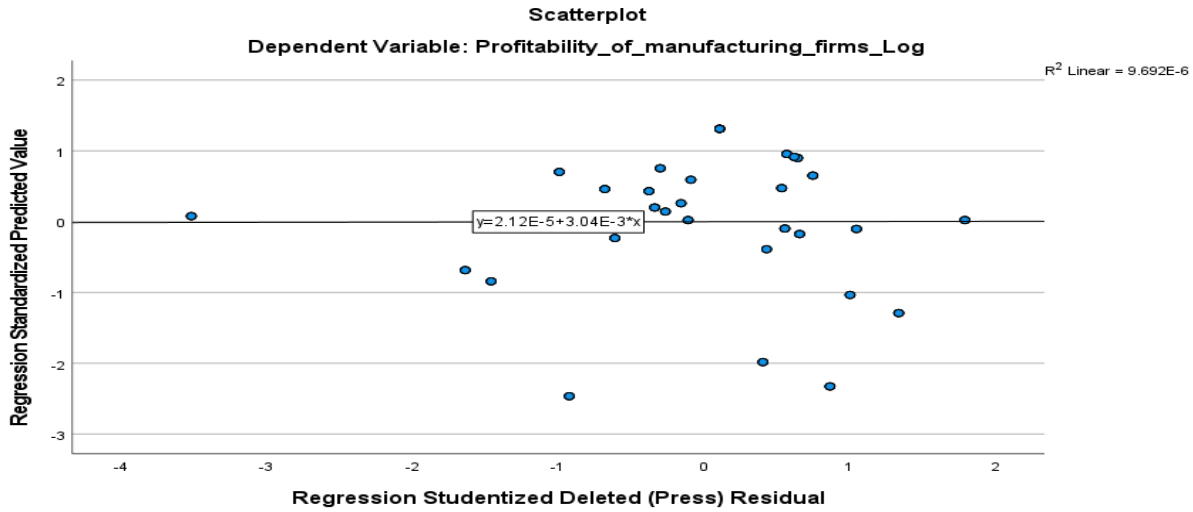


Figure 4.5: Q-Q Plot for Account payable days

A Normal Q-Q plot was utilized to examine the distribution of the variable Account payable days. The plot compared the quantiles of the observed data with the expected quantiles of a normal distribution. As seen in figure 4.5, the data pointed largely aligned with the reference line, showing minimal deviation throughout the distribution. This close alignment indicated that the variable was approximately normally distributed. Therefore, the assumption of normality was supported, making the data suitable for parametric statistical analysis in subsequent procedures.

4.5.4. Homoscedasticity

To assess the assumption of homoscedasticity in the regression analysis, a scatterplot of regression standardized predicted values against studentized deleted residuals was generated. Homoscedasticity refers to the condition where the variance of the residuals remains constant across all levels of the predicted values (Field, 2013). This assumption is vital because heteroscedasticity, or unequal variance, can bias standard errors, leading to invalid hypothesis tests and confidence intervals.



From the scatterplot, the residuals appear to be randomly scattered around the zero line without forming any systematic pattern or funnel-like shape. The spread of residuals is consistent across the range of predicted values, with no evident clustering or widening at particular points. This randomness suggests that the homoscedasticity assumption has been satisfied, indicating that the model's residuals have constant variance and thus supporting the validity of the regression estimates. Moreover, the near-horizontal regression line in the scatterplot, with an R^2 value close to zero (9.692E-6), reinforces this finding by showing no significant linear relationship between residuals and predicted values. These results align with guidance from Hair et al. (2010), who recommend inspecting scatterplots of residuals for this assumption in multiple regression analyses. Consequently, the assumption of homoscedasticity holds for this model, affirming the robustness of the statistical inferences drawn from the regression analysis.

4.6. Correlation Analysis

To establish the nature and strength of the relationships between working capital management components and the profitability of manufacturing firms, a Pearson correlation analysis was conducted. Pearson's correlation is a statistical technique used to determine the direction and magnitude of linear associations between continuous variables. The analysis revealed several statistically significant positive relationships at the 0.01 significance level (2-tailed), suggesting that enhancements in working capital management practices are closely associated with improved profitability among manufacturing firms in Kenya as shown in Table 4.12.

Table 4.12: Correlations Analysis

		Inventory management Log	Cash conversion cycle Log	Account receivable days Log	Account payable days Log	Profitability of manufacturing firms Log
Profitability of manufacturing firms Log	Pearson Correlation	.770**	.498**	.605**	.592**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	119	119	119	119	119

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

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

Source: Researcher, 2025

The results from Table 4.12 indicated that inventory management exhibited a strong positive correlation with profitability ($r = 0.770$, $p < 0.01$). This finding is consistent with the study by Mathuva (2010), who established that efficient inventory management positively influences firm profitability by reducing holding costs and ensuring timely availability of raw materials and finished goods. Similarly, the cash conversion cycle showed a moderate positive correlation with profitability ($r = 0.498$, $p < 0.01$), implying that firms with well-managed cash conversion periods tend to report better financial performance. This aligns with Habib and Dalwai (2023), who observed that shorter cash conversion cycles enhance liquidity and operational efficiency, consequently boosting profitability. Moreover, account receivable days recorded a significant positive relationship with profitability ($r = 0.605$, $p < 0.01$), indicating that firms that manage their credit sales effectively and reduce receivable collection periods

improved profitability. This outcome resonates with findings by Bui et al. (2023), who concluded that minimizing the time taken to collect receivables leads to increased cash flow, which can be reinvested into operational activities, ultimately enhancing profitability. Additionally, account payable days demonstrated a positive correlation with profitability ($r = 0.592$, $p < 0.01$). This suggests that firms capable of negotiating favorable credit terms with suppliers, while maintaining good supplier relationships, tend to optimize their cash flow and overall financial performance. Gill et al. (2010) similarly noted that efficient management of payables can improve liquidity positions and profitability by allowing firms to hold onto cash for longer periods without jeopardizing supplier relationships.

4.7. Multiple regression

This section presents the results of the multiple linear regression analysis conducted to examine the relationship between the independent variables and the dependent variable. A standard multiple regression analysis was conducted to determine the joint effect of working capital management components, inventory management, cash conversion cycle, account receivable days, and account payable days, on the profitability of manufacturing firms in Kenya. The analysis sought to establish how these financial and operational indicators contributed to variations in firm profitability, using log-transformed data to satisfy regression assumptions.

Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
1	.798[a]	.637	.625	.051447	.000

a. Predictors: (Constant), Account payable days Log, Cash conversion cycle Log, Account receivable days Log, Inventory management Log

b. Dependent Variable: Profitability of manufacturing firms Log

Source: Researcher, 2025

The results presented in the model summary reveal that the regression model produced a multiple correlation coefficient (R) of 0.798, indicating a strong positive relationship between the set of independent variables and the dependent variables. The R Square value of 0.637 suggests that approximately 63.7% of the variance in profitability of manufacturing firms is explained by the combined effect of the four working capital management variables. This represents a substantial proportion of explained variance, reinforcing the critical role that

efficient working capital management plays in firm performance. Furthermore, the Adjusted R Square of 0.625 demonstrates that even after adjusting for the number of predictors in the model, the explanatory power remains high. This suggests that the inclusion of the four predictors meaningfully improves the model's ability to explain profitability trends, while minimizing the risk of overfitting. The standard error of the estimate (0.051447) is relatively low, implying that the predicted values generated by the model closely approximate the actual profitability figures of the sampled firms. The overall significance of the model is confirmed by a Sig. F Change of 0.000, indicating that the regression model is statistically significant at the 1% level. This means that there is a less than 0.1% likelihood that the observed relationship occurred by chance. These findings align with existing empirical evidence, such as Habib and Dalwai (2023) and Bui et al. (2023), who established significant relationships between working capital management practices and firm profitability. Similarly, Mathuva (2010) observed that efficient management of inventory, receivables, and payables leads to enhanced financial performance in manufacturing firms. The results of this study affirm these positions, confirming that a holistic approach to working capital management contributes meaningfully to profitability optimization within the Kenyan manufacturing sector.

To assess the overall significance of the regression model predicting profitability of manufacturing firms based on working capital management practices, an analysis of variance (ANOVA) was conducted. The results are presented in Table 4.14 and provide insight into whether the combined influence of the four independent variables, inventory management, cash conversion cycle, account receivable days, and account payable days, significantly predicts firm profitability.

Table 4.14: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.530	4	.133	50.106	.000[b]
	Residual	.302	114	.003		
	Total	.832	118			

a. Dependent Variable: Profitability of manufacturing firms Log

b. Predictors: (Constant), Account payable days Log, Cash conversion cycle Log, Account receivable days Log, Inventory management Log

Source: Researcher, 2025

The ANOVA results revealed that the regression model was statistically significant at the 0.001 level, with an F-statistic of 50.106 (df = 4, 114) and a p-value of 0.000. This indicated that the model provided a significantly better fit to the data than a model with no predictors, meaning there was a statistically significant relationship between the combined working capital management components and the profitability of manufacturing firms. In other words, at least one of the independent variables made a significant contribution to predicting profitability. The sum of squares for the regression (0.530) compared to the total sum of squares (0.832) suggested that a substantial proportion of the total variance in profitability was explained by the predictors included in the model. The large F-statistics, combined with the very low significance level, indicated a high level of confidence in the predictive power of the model. Since the computed F-value (50.106) is much greater than the table value (2.45), the decision was to reject the null hypothesis. This indicated that the combined effect of the four independent variables, inventory management, cash conversion cycle, accounts receivable days, and accounts payable days, significantly predicted the profitability of manufacturing firms in Kenya. Therefore, the model provided a significantly better fit than a model without predictors, confirming that at least one of the working capital management components had a statistically significant impact on profitability. These results validated the theoretical and empirical foundations presented in the literature and demonstrated the importance of coordinated working capital strategies in improving financial performance within the manufacturing sector. These results aligned with prior studies, including Habib and Dalwai (2023), who found a significant association between working capital management practices and profitability in Belgian firms. Similarly, Bui et al. (2023) reported that firm profitability in the Athens Stock Exchange was significantly influenced by effective working capital management, particularly through inventory turnover, cash conversion cycles, and management of accounts receivables and payables. This study's findings reinforce those conclusions within the Kenyan manufacturing sector context. They demonstrate that a well-coordinated approach to managing operational cash flows and working capital elements contributes meaningfully to profitability outcomes. Furthermore, these results support Mathuva’s (2010) conclusions from Kenyan firms, which emphasized the profitability benefits of maintaining optimal levels of inventories, streamlining receivables, and leveraging payables prudently.

The coefficients table provides insight into the individual contribution of each predictor variable in explaining the profitability of manufacturing firms in Kenya. Based on the regression results, all four working capital management components, inventory management, cash conversion cycle, account receivable days, and account payable days, have positive and statistically significant relationships with firm profitability.

Table 4.15: Coefficients between variables

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.027	.059		0.574	.001
	Inventory management Log	.547	.088	.577	6.235	.000
	Cash conversion cycle Log	.155	.094	.119	1.068	.000
	Account receivable days Log	.367	.112	.296	2.972	.004
	Account payable days Log	-.104	.133	-.077	0.635	.002

a. Dependent Variable: Profitability of manufacturing firms Log

Source: Researcher, 2025

The constant term is 0.027 (p = 0.001), representing the expected profitability of manufacturing firms when all independent variables are held constant. Though the constant itself holds limited practical interpretive value, it provides a baseline profitability level for the regression equation. Among the independent variables, inventory management shows the strongest positive effect, with an unstandardized coefficient of 0.547 (p = 0.000) and a standardized beta of 0.577. This indicates that a one-unit increase in the log of inventory management practices leads to a 0.547-unit increase in the log of profitability, holding other factors constant. This finding aligns with prior research by Habib and Dalwai (2023) and Mathuva (2010), who noted that effective inventory control reduces holding and obsolescence costs while ensuring uninterrupted production, thereby enhancing firm profitability. The cash conversion cycle also exhibits a positive relationship with profitability, with a coefficient of 0.155 (p = 0.000) and a beta value of 0.119. While the effect size is moderate, the positive and significant relationship implies that managing the cash conversion period, the time taken to convert inventory and receivables into

cash, positively influences profitability. This outcome resonates with Bui et al. (2023), who observed that firms could improve profitability by optimizing the cash conversion cycle through efficient operational and credit management practices. Account receivable days similarly show a significant positive effect, with a coefficient of 0.367 ($p = 0.004$) and a standardized beta of 0.296. This suggests that increasing the credit period offered to customers, within prudent limits, can lead to higher profitability, likely through increased sales and enhanced customer relationships. This corroborates the findings of García-Teruel and Martínez-Solano (2007), who posited that well-managed receivables positively influence firm performance by balancing liquidity needs and sales growth. Conversely, account payable days exhibit a negative coefficient of -0.104 ($p = 0.002$) and a beta value of -0.077, indicating that extending payment periods to suppliers reduces profitability. It suggests that in the Kenyan manufacturing context, delayed supplier payments may disrupt supply chains or attract unfavorable credit terms, ultimately harming profitability.

The final multiple regression model predicting the implementation of donor-funded healthcare projects (Y) is expressed as:

$$\mathbf{Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\epsilon}$$

Substituting the values from the final model:

$$\mathbf{\text{Profitability of manufacturing firms} = 0.027+0.547X_1+0.155X_2+0.367X_3-0.104X_4+\epsilon}$$

The regression coefficients reveal that inventory management has a positive and statistically significant effect on profitability ($\beta = 0.547$, $p = 0.000$). This finding implies that better inventory management practices enhance firm profitability by reducing holding costs and improving operational efficiency, consistent with the observations by Bui et al. (2023) who documented that efficient inventory control contributes to superior financial performance. The cash conversion cycle was also found to have a positive and significant relationship with profitability ($\beta = 0.155$, $p = 0.000$). This suggests that strategically extending the cash conversion period within operationally acceptable limits can improve profitability, supporting Deloof's (2003) argument that firms can benefit from maintaining longer cash conversion cycles to optimize sales and cash flows. Further, accounts receivable exhibited a positive and significant association with profitability ($\beta = 0.367$, $p = 0.004$). This indicates that extending credit periods to customers, while carefully managed, may boost customer loyalty and increase sales volumes, thus improving profitability. These findings are in line with those of Mathuva

(2010), who found similar trends among manufacturing firms in Kenya. Conversely, account payable days demonstrated a negative and significant relationship with profitability ($\beta = -0.104$, $p = 0.002$). This suggests that excessively delayed payments to suppliers can harm profitability, potentially due to strained supplier relationships or missed early payment discounts, a finding corroborated by Enqvist et al. (2014) in their study of European firms.

Hypothesis testing based on these regression results confirmed that all the formulated hypotheses were significant at the 0.05 level. The null hypotheses stating that inventory management, cash conversion cycle, accounts receivable days, and accounts payable days have no significant effect on the profitability of manufacturing firms were rejected. The overall model was statistically significant, with an F-value of 50.106 and a p-value of 0.000, indicating that the combined working capital management variables significantly explain the variation in profitability. The model had a good fit, as reflected by an R-squared value of 0.637, suggesting that approximately 63.7% of the variability in manufacturing firm profitability can be explained by the selected working capital management variables. These findings underscore the importance of effective working capital management strategies in enhancing the financial performance of manufacturing firms in Kenya. Managers are, therefore, advised to strike a careful balance between inventory levels, receivables, payables, and cash flows to sustain and improve firm profitability.

4.10. Summary of Regression analysis

The is a summary of regression analysis results based on the study objectives and hypotheses tests conducted as shown in Table 4.15.

Table 4.15: Summary of Regression analysis

Objectives	Hypothesis	Results	Remarks on Results
To determine the impact of inventory management on the profitability of manufacturing firms in Kenya; A case of Mumias Sugar Company in Kakamega.	H_0: Inventory management does not significantly affect the profitability of manufacturing firms in Kenya.	Rejected	Regression analysis showed a strong positive relationship between inventory management and profitability, with inventory explaining over

			60% of the variation in profitability.
To establish the effect of the cash conversion cycle on the profitability of manufacturing firms in Kenya; A case of Mumias Sugar Company in Kakamega.	H_0: Cash conversion cycle has no significant effect on the profitability of manufacturing firms in Kenya.	Rejected	Statistical analysis revealed a positive and significant effect of the cash conversion cycle on profitability, with CCC accounting for over 22% of profitability variation.
To determine the impact account receivable days, have on the profitability of manufacturing firms in Kenya; A case of Mumias Sugar Company in Kakamega.	H_0: Account receivable days do not significantly affect the profitability of manufacturing firms in Kenya.	Rejected	Findings indicated a significant and moderately strong relationship between receivable days and profitability, contributing to nearly 40% of the variation in financial performance.
To establish the effect of account payable days on the profitability of manufacturing firms in Kenya; A case of Mumias Sugar Company in Kakamega.	H_0: Account payable days do not significantly affect the profitability of manufacturing firms in Kenya.	Rejected	The study confirmed a strong and significant effect of account payable days on profitability, with payables accounting for about 39% of the profitability variance.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a comprehensive discussion of the study findings in relation to existing literature and the study objectives, specifically focusing on the financial variables influencing profitability in manufacturing firms in Kenya. It draws conclusions based on the results and offers practical recommendations for enhancing inventory management, cash conversion cycles, and accounts receivable and payable practices. The discussion underscores the significance of efficient financial management practices and their direct impact on firm performance. Furthermore, the chapter outlines key areas for policy development, sector-specific improvements, and future research, providing guidance to practitioners, policymakers, and industry stakeholders aiming to strengthen financial sustainability and operational efficiency within the manufacturing sector.

5.2. Summary of Main Findings

The findings are hereby summarized based on the research objectives.

5.2.1. Inventory Management and Profitability of Manufacturing Firms in Kenya

The study found that inventory management significantly influenced the profitability of manufacturing firms in Kenya. Respondents consistently indicated that practices such as high inventory turnover, reduced stock-out occurrences, alignment with demand forecasting, and minimal holding periods enhanced financial performance. Descriptive analysis revealed strong agreement across items, with most respondents affirming that effective inventory practices minimized costs and operational disruptions. The correlation analysis demonstrated a strong positive relationship between inventory management and profitability, while regression results showed that inventory practices accounted for over 60% of the variation in firm profitability. These findings supported theoretical models such as lean inventory systems and the Economic Order Quantity framework. The results also aligned with prior literature, confirming that firms which effectively managed their inventory enjoyed improved liquidity, lower operational costs, and greater financial stability. The study addressed a contextual gap by providing empirical

evidence from a Kenyan manufacturing setting, showing that inventory management was not only a logistical function but also a financial performance driver. Overall, the findings demonstrated that inventory systems, when efficiently designed and executed, contributed meaningfully to improving profitability within manufacturing firms.

5.2.2. Cash conversion cycle and Profitability of Manufacturing Firms in Kenya

The study established that the cash conversion cycle (CCC) had a statistically significant and positive influence on the profitability of manufacturing firms in Kenya. Respondents generally agreed that reducing the time between cash outflows and inflows improved operational efficiency and financial outcomes. While views on the regular monitoring of CCC varied, most respondents supported the notion that shorter cash cycles enhanced liquidity, boosted competitiveness, and supported investment capacity. Correlation analysis showed a moderate positive relationship between CCC and profitability, and regression analysis confirmed that CCC was a significant predictor, explaining over 22% of the variance in profitability. These findings were consistent with working capital management theory and supported previous studies, such as those by Deloof and Garcia-Teruel, which emphasized the importance of managing the timing of receivables, payables, and inventory. The study filled a gap by contextualizing the CCC's impact within the Kenyan manufacturing sector, where internal liquidity is crucial due to limited external financing options. The results indicated that firms which managed their CCC efficiently could reinvest earnings quickly, meet obligations on time, and strengthen financial performance. Thus, CCC emerged as a key internal process influencing firm-level profitability outcomes.

5.2.3. Accounts receivable days and Profitability of Manufacturing Firms in Kenya

The findings revealed that accounts receivable days significantly influenced the profitability of manufacturing firms in Kenya. Most respondents agreed that effective receivables management improved cash flow, minimized operational costs, and supported long-term financial stability. There was a strong consensus that delayed collections adversely affected liquidity and overall performance, while proper credit control policies and a high receivables turnover positively contributed to profitability. Correlation analysis demonstrated a moderately strong positive relationship between receivables and profitability, and regression analysis confirmed that receivable days explained nearly 40% of the variation in financial performance. These results

aligned with working capital management theory and were supported by earlier studies, including those by Padachi and Van Horne, who emphasized the need for tight credit control. The study addressed an empirical gap by quantifying receivables' influence on firm performance within Kenya's manufacturing context. The consistent agreement among respondents highlighted the operational and financial importance of receivables management. The study demonstrated that firms with proactive receivables strategies maintained better liquidity, avoided bad debts, and leveraged internal funds more effectively, leading to stronger financial outcomes. Efficient accounts receivable management thus emerged as a core component of profitability for manufacturing firms.

5.2.4. Accounts Payable Days and Profitability of Manufacturing Firms in Kenya

The study found that accounts payable days had a significant and positive impact on the profitability of manufacturing firms in Kenya. Respondents widely agreed that timely or strategically extended payments contributed to better cash flow, enhanced supplier relationships, and improved operational efficiency. Descriptive analysis showed that most firms utilized accounts payable as a short-term financing mechanism, allowing them to retain cash for core operations. The correlation analysis confirmed a strong positive relationship between accounts payable days and profitability, and regression analysis showed that payables explained a substantial portion of profitability variance, approximately 39%. These findings supported trade credit theory, which views delayed payments as a financial strategy for optimizing liquidity without compromising supplier trust. Prior literature emphasized similar advantages in other markets, and this study extended such evidence to the Kenyan context. The findings addressed a contextual gap by illustrating how Kenyan firms integrated payables into broader financial planning. The results demonstrated that when managed carefully, extended payables periods helped firms stabilize operations, reduce borrowing, and improve profitability. Thus, accounts payable management was confirmed as a strategic financial function within manufacturing operations.

5.3. Discussions

The section details the discussions about the outcomes of the study and organized as per the themes guiding the study.

5.3.1. Inventory Management and Profitability of Manufacturing Firms in Kenya

The study established that inventory management had a statistically significant and positive influence on the profitability of manufacturing firms in Kenya. Most respondents confirmed that efficient inventory turnover, minimal holding periods, reduced stock-outs, and demand-aligned inventory practices were instrumental in enhancing profitability. The statistical analysis supported these perceptions, with correlation results indicating a strong positive relationship, while regression analysis confirmed that inventory management explained a substantial proportion of the variation in profitability. These findings aligned with earlier literature that identified inventory control as a key component of operational efficiency and financial performance (Wild, 2017; Stevenson, 2018). The positive effect of inventory turnover on profitability confirmed assertions made, where inventory management was linked to reduced holding costs, enhanced cash flow, and improved responsiveness to demand fluctuations. The study filled the gap on the limited empirical evidence available from Kenyan manufacturing firms by offering quantifiable results that validated theoretical propositions, including the Economic Order Quantity model and the Just-In-Time inventory system. The evidence also indicated that firms with better inventory control experienced fewer disruptions and were more resilient in fluctuating market conditions. Respondents affirmed that their firms proactively minimized inventory days and employed proper forecasting mechanisms, which was consistent with Womack and Jones (2003), who emphasized lean practices as profitability enhancers. The regression results confirmed that inventory management was not only significantly associated with profitability but also a reliable predictor of financial performance in manufacturing contexts. The study concluded that improving inventory practices led to better financial outcomes. This conclusion was authenticated by strong correlation coefficients and regression outputs, reinforcing the need for inventory to be managed as a strategic asset. The findings further addressed the study's knowledge gap by providing sector-specific evidence on how inventory dynamics influenced profitability within a Kenyan manufacturing setting, particularly at Mumias Sugar Company. It was recommended that firms adopt modern inventory tracking systems, invest in staff training on stock control, and align inventory decisions with sales forecasts. These recommendations were justified by the observed consensus among respondents and the statistical significance of inventory management in predicting profitability. Literature reviewed also emphasized that organizations leveraging

efficient inventory systems were better positioned to optimize resource use and gain a competitive edge (Lysons & Farrington, 2016).

5.3.2. Cash conversion cycle and Profitability of Manufacturing Firms in Kenya

The study found that the cash conversion cycle (CCC) had a statistically significant and positive influence on the profitability of manufacturing firms in Kenya. Respondents acknowledged that shorter cash cycles improved liquidity, operational efficiency, and financial performance. This was validated by correlation and regression analyses, which demonstrated a moderate positive relationship and confirmed that CCC significantly predicted profitability, albeit to a lesser extent compared to inventory management. These findings reinforced the theoretical arguments presented in Chapter Two, particularly those related to working capital management theory, which posits that firms with efficient CCCs are better able to meet short-term obligations and reinvest capital for operational growth. Prior literature by Habib and Dalwai (2023) and Bui et al. (2023) supported this view, emphasizing that shorter cash cycles enhance a firm's capacity to generate profits by reducing the time between outflows and inflows. The study thus addressed a key gap in Kenyan manufacturing research, which had lacked empirical evidence quantifying CCC's effect on profitability. The results showed that respondents agreed that effective CCC management enhanced competitiveness and customer relationships. However, there was some divergence regarding the role of CCC monitoring and adjustment in improving performance, suggesting that implementation gaps still existed within certain firms. Despite this variation, regression results confirmed CCC as a statistically significant predictor of profitability, explaining a notable proportion of variance, though less than inventory or receivables. The conclusion drawn was that firms that minimized their cash conversion period experienced improved financial outcomes. This was affirmed by the positive statistical associations between CCC efficiency and profitability, which authenticated the rejection of the null hypothesis. The findings addressed the study's conceptual gap by illustrating how cash flow management practices directly affect financial returns in manufacturing environments. It was recommended that firms continuously monitor their cash cycles, reduce receivables collection time, manage inventory turnover efficiently, and negotiate favorable credit terms with suppliers. The study confirmed that efficient cash conversion cycle management significantly contributed to the profitability of manufacturing firms in Kenya. This reinforced theoretical frameworks on working capital efficiency and extended their

practical relevance to the Kenyan context, thereby addressing empirical and contextual gaps previously noted in the literature.

5.3.3. Accounts receivable days and Profitability of Manufacturing Firms in Kenya

The study found that accounts receivable days had a significant positive influence on the profitability of manufacturing firms in Kenya. Respondents generally agreed that efficient receivables management improved cash flow, reduced financial strain, and enhanced overall performance. Descriptive analysis showed strong agreement on the role of proper credit control, the negative impact of delayed collections, and the contribution of accounts receivable turnover to financial health. The data revealed minimal disagreement, indicating convergence in perceptions across the sampled firms. The correlation analysis confirmed a moderately strong positive relationship between receivables and profitability, while regression results showed that accounts receivable days explained a considerable proportion of the variance in profitability. This statistical relationship supported the theoretical framework of working capital management, which emphasized that firms benefit from tighter control over receivables by improving liquidity and minimizing opportunity costs. Literature reviewed by Gitman and Zutter (2015) and Le and Trinh (2024) affirmed that delays in receivables collection compromise firms' ability to meet financial obligations and reduce the capacity for internal reinvestment. The study's findings also reflected Padachi's (2006) assertion that firms operating in capital-intensive industries must monitor receivable cycles to maintain operational efficiency. These consistencies with prior literature validated the results and addressed the empirical gap on the limited documentation of receivables' role in profitability among Kenyan manufacturing firms. Respondents strongly agreed that high levels of outstanding accounts receivable were signs of poor financial performance, which confirmed the operational importance of timely collections. The low standard deviation in these responses indicated a shared experience among firms, reinforcing the idea that delayed payments are a critical concern. The study filled a contextual gap by demonstrating that receivable days are not just accounting entries but are integral to financial strategy in local firms. Moreover, the findings showed that firms with well-managed receivables were more likely to enjoy stable liquidity, which supported Brigham and Ehrhardt's (2017) view that good receivables control contributes to financial flexibility and resilience. The role of receivable turnover as a performance indicator was also affirmed, providing operational managers with a measurable tool to assess the impact

of credit policies on business outcomes. The analysis revealed that accounts receivable management was a critical internal factor shaping profitability in manufacturing firms. By capturing both the financial and operational dimensions of receivables, the study offered empirical evidence that reinforced theoretical models while providing insights into their practical application within Kenya's industrial environment.

5.3.4. Accounts Payable Days and Profitability of Manufacturing Firms in Kenya

The study found that accounts payable days had a statistically significant positive influence on the profitability of manufacturing firms in Kenya. Descriptive findings showed that respondents largely agreed that timely or strategically delayed settlement of payables affected financial performance, supplier relationships, and organizational liquidity. Most participants affirmed that proper tracking and reporting of payables supported decision-making and improved operational efficiency. These perceptions were consistent across firms, as evidenced by the low to moderate standard deviations in responses. Correlation analysis confirmed a strong positive relationship between accounts payable days and profitability. Regression analysis further revealed that accounts payable days explained a notable portion of the variance in profitability, making it a reliable predictor among the variables studied. These findings were in line with the risk – return tradeoff theory, which posits that firms can utilize delayed payments to suppliers as a source of short-term financing, thereby preserving internal cash flow for other productive uses. The study addressed a key gap by quantifying how accounts payable management contributes to profitability within the context of Kenyan manufacturing firms. While much of the literature, including Habib and Dalwai (2023) and Bui et al. (2023), focused on European contexts, this study confirmed similar patterns locally. It showed that delaying payments within reasonable terms allowed firms to optimize cash reserves without severely affecting supplier relationships or service continuity. Respondents acknowledged that poorly managed accounts payable could lead to liquidity challenges, while timely payments were associated with improved supplier confidence and smoother supply chain operations. These views aligned with the findings of Ross et al. (2016), who argued that balancing payables is essential for maintaining operational fluidity. The relatively consistent agreement across firms demonstrated that managing payables is not only a financial function but also a strategic decision impacting long-term relationships and reputational capital. The statistical significance of the relationship between payables and profitability filled a contextual gap on how Kenyan

firms approach trade credit from suppliers. Unlike in some global markets where firms may rely on short credit periods, the results here reflected that longer, but controlled payables cycles were integrated into firms' cash management strategies. This extended the practical application of working capital theories to a developing economy setting, confirming the adaptability of such frameworks. The findings demonstrated that accounts payable management was an essential internal control element influencing firm profitability. Firms that maintained structured payables strategies appeared better positioned to manage their financial obligations while supporting operational continuity. These insights deepened the understanding of payables as a lever for profitability, affirming their place in broader financial performance models within the manufacturing sector.

5.4. Conclusion

The study concluded that inventory management had a significant and positive influence on the profitability of manufacturing firms in Kenya. Firms that implemented high inventory turnover, reduced holding periods, and aligned stock levels with demand realized notable improvements in financial performance. The strong statistical association between inventory practices and profitability affirmed that inventory management is not merely a logistical function but a strategic determinant of profitability. This study contributed new knowledge by extending existing inventory management theory into the context of financially distressed manufacturing firms outside the Nairobi Securities Exchange, demonstrating that effective inventory systems can drive profitability even in liquidity-constrained environments like Mumias Sugar Company.

The study also concluded that the cash conversion cycle (CCC) significantly affected the profitability of manufacturing firms. Efficient CCC management, achieved through faster inventory turnover, timely receivables collection, and negotiated payables, enhanced liquidity and operational efficiency. Although its impact was less pronounced than that of inventory and receivables, CCC remained a meaningful profitability predictor. This study added new insight by empirically confirming the relevance of CCC management in non-listed firms operating under financial strain, an area previously underrepresented in local literature. It provided sector-specific validation for the inclusion of CCC in working capital models within Kenyan manufacturing firms.

The study further concluded that accounts receivable days were a key driver of profitability in the manufacturing sector. Firms that enforced timely collections and adopted structured credit control mechanisms experienced stronger cash flow and minimized operational risks. The moderate to strong statistical significance established between receivables and profitability reinforced the centrality of receivables management within internal financial control systems. The study contributed to knowledge by showing that, contrary to findings in listed firms where receivables had a limited effect, receivables management played a central role in financially distressed firms. This highlighted the need for customized receivables strategies in different organizational contexts.

Lastly, the study concluded that accounts payable on days significantly contributed to profitability. Firms that strategically extended their payment periods, within acceptable terms, were able to preserve liquidity and avoid over-reliance on costly external financing. The findings confirmed that accounts payable were not just obligations but also instruments of financial leverage when managed ethically and strategically. This study advanced understanding by demonstrating that accounts payable, when used tactically in distressed or unlisted manufacturing firms, could serve as a viable working capital tool to stabilize and even enhance profitability, a nuance that previous studies in more stable sectors had underexplored.

5.5. Recommendations from the findings

5.5.1. Inventory Management

Based on the finding that inventory management significantly enhanced profitability, it is recommended that manufacturing firm managers adopt integrated inventory management systems that support real-time tracking and automated replenishment. Practices such as demand forecasting, maintaining optimal inventory turnover, and minimizing holding periods should be institutionalized to improve operational efficiency and financial returns. Management should also invest in staff training in inventory analysis and establish inventory policies that align with market fluctuations. At the sectoral level, government and industry regulators should promote the adoption of lean inventory frameworks by facilitating knowledge transfer, subsidizing digital inventory technologies, and encouraging the development of sector-specific inventory management benchmarks, especially for agro-manufacturing firms like Mumias Sugar Company.

5.5.2. Cash Conversion Cycle

Given the positive and significant effect of the cash conversion cycle (CCC) on profitability, managers should focus on reducing the time between outflow and inflow of cash by optimizing inventory turnover, accelerating receivables, and negotiating favorable credit terms with suppliers. CCC performance should be regularly monitored using key indicators, and firms should embed cash cycle metrics into financial reporting for better strategic oversight. From a sectoral perspective, there is a need for industry-wide sensitization on CCC optimization as a performance driver. Industry associations and government agencies should collaborate to develop cash cycle management tools tailored for manufacturing firms, especially those in regions facing liquidity constraints, to strengthen sector-wide financial resilience.

5.5.3. Accounts Receivable Days

Since accounts receivable days were found to significantly impact profitability, management should strengthen credit policies, establish clear receivables collection procedures, and enforce strict credit limits based on client reliability. Firms should leverage data analytics to assess customer payment patterns and proactively engage clients to reduce overdue balances. Automated invoicing and payment reminders should also be implemented to shorten collection periods. At the sectoral level, manufacturing industry bodies should standardize credit terms across the sector to mitigate payment disputes and cash flow unpredictability. Policymakers should support firms by facilitating access to affordable credit insurance and credit risk assessment tools to minimize receivable-related defaults, particularly among firms serving government or bulk buyers.

5.5.4. Accounts Payable Days

As accounts payable days were found to positively influence profitability, it is recommended that firms develop structured payment schedules that balance cash retention with supplier relationship management. Management should strategically delay payments within agreed credit periods to preserve liquidity while maintaining trust and supply continuity. Clear communication with suppliers and early payment discounts should be part of a broader supplier engagement strategy. Sectorally, industry regulators should establish supplier relationship guidelines that encourage fair payment practices while allowing flexibility for firms to manage short-term cash flows. Training and policy frameworks on ethical and strategic payables

management should be introduced to prevent exploitative practices and promote long-term supplier partnerships across the manufacturing sector.

5.6. Suggestions for Further Study

Further research could explore the impact of technological advancements, such as automation, on inventory management and profitability in manufacturing firms. It could also investigate sector-specific financial strategies, particularly in industries like agriculture and textiles, which face unique challenges. Research on the role of sustainability in manufacturing, particularly the impact of green practices on cost savings and profitability, is another area of interest. Then, assessing the effectiveness of government policies, such as subsidies and tax incentives, in supporting financial management in the sector would be beneficial.

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APPENDIX

Appendix I: Record Sheet

RECORD SHEET

Year	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Measurement Items					
i. Sales					
ii. Total Assets					
iii. Average Stock					
iv. Total Assets					
v. Total Income					
vi. Cash					
vii. Cost of Goods Sold					
viii. Current Liabilities					
ix. Purchases					

Appendix II: Questionnaire

Section A: Bio Data

1. Gender: Male ( ) Female ( ) N/A ( )
2. Years of work experience in the manufacturing industry respective departments: …….

3.Highest level of Education ……

Section B: Factors Related to Working capital Management

Instructions: Please indicate your level of agreement with each statement by marking the appropriate column based on the following scale: ***Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)***

Inventory Management and performance.

No.	Statement	1	2	3	4	5
1	Inventory management practices at the company have significantly improved overall profitability.					
2	Proper stock control and monitoring have reduced operational costs					
3	Delays in inventory procurement negatively affect the company's production efficiency and profitability.					
4	Effective inventory management contributes to better decision-making.					
5	The current inventory management system is sufficient to enhance profitability.					
6	Inventory wastage and overstocking have adversely affected profitability.					
7	Improved inventory turnover rates have led to an increase in profit margins.					
8	The use of advanced inventory management technologies could further enhance profitability.					

Effect of the cash conversion cycle and performance

No.	Statement	1	2	3	4	5
1	The cash conversion cycle significantly impacts the company's profitability.					
2	Reducing the cash conversion cycle improves operational efficiency.					
3	A shorter cash conversion cycle leads to better financial performance for the company.					
4	Lengthening the cash conversion cycle negatively affects the company's liquidity.					
5	Managing the cash conversion cycle effectively enhances competitive advantage.					
6	The company's performance improves when the cash conversion cycle is regularly monitored and adjusted.					
7	Cash flow issues arising from a long cash conversion cycle hinder the ability to invest in new projects.					
8	An efficient cash conversion cycle is crucial for maintaining good supplier and customer relationships.					

Impact account receivable on performance

No.	Statement	1	2	3	4	5
1	Accounts receivable management significantly improve the financial performance of the company.					
2	Efficient handling of accounts receivable reduces the company's operational costs.					
3	Delayed collection of accounts receivable negatively affects cash flow and overall performance.					
4	Proper credit control policies enhance the company's profitability.					
5	The company's liquidity is directly affected by the efficiency of accounts receivable management.					

6	A high level of outstanding accounts receivable indicates poor financial performance.					
7	Effective accounts receivable practices contribute to the company's long-term financial stability.					
8	Accounts receivable turnover is a reliable indicator of the company's overall performance.					

Effect of account payable on performance

No.	Statement	1	2	3	4	5
1	Accounts payable by management significantly affect the cash flow performance of the organization.					
2	Timely settlement of accounts payable improves the financial performance of the company.					
3	Delays in paying suppliers negatively impact the organization's operational efficiency.					
4	Effective accounts payable strategies enhance the profitability of the business.					
5	A well-managed accounts payable system leads to better supplier relationships and improved performance.					
6	Increased accounts payable lead to liquidity challenges that affect overall performance.					
7	Strict credit terms on accounts payable hinder the company's ability to perform effectively.					
8	Proper tracking and reporting of accounts payable improve the decision-making process and boost performance.					

Appendix III: Krecjie and Morgan Table

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Appendix IV: Letter of Authorization

25th, April 2025

E-mail: researchwriting.mba.anu@gmail.com

Tel. 0202711213

*Our Ref:*22J01DMBA016

The Director.
National Commission for Science,
Technology and Innovation (NACOSTI),
P. O. Box 30623, 00100
Nairobi. Kenya

Dear Sir/Madam:
RE: RESEARCH AUTHORIZATION FOR: CLEOPHAS DANIEL OBENGELE

Mr. Cleophas is a postgraduate student pursuing a Master of Business Administration (MBA) at Africa Nazarene University.

As part of his academic journey, Mr. Cleophas is conducting a research study titled: " **Effect of Working Capital Management on the Profitability of Manufacturing Firms in Kenya. A Case of Mumias Sugar Company in Kakamega**. "

We kindly request your support in facilitating his research. Any assistance extended to him will be greatly appreciated and will contribute significantly to the successful completion of his studies.
Yours faithfully,

DR. Kimani Gichuhi,

MBA, Coordinator,

School of Business,

Africa Nazarene University.

Appendix V: Permit from NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 557378

Date of Issue: 29/April/2025

RESEARCH LICENSE



This is to Certify that Mr.. Cleophas Obengele of Africa Nazarene University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kakamega on the topic: EFFECT OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY OF MANUFACTURING FIRMS IN KENYA. A CASE OF MUMIAS SUGAR COMPANY IN KAKAMEGA. for the period ending : 29/April/2026.

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