

**EFFECT OF BORROWING AND WORKING CAPITAL ON  
PROFITABILITY OF MANUFACTURING FIRMS LISTED AT NAIROBI  
SECURITIES EXCHANGE**

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**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE  
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SCIENCE FINANCE, FACULTY OF BUSINESS AND MANAGEMENT  
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## DECLARATION

I do hereby declare that this is my original work and has never been submitted out to any institution of higher learning for examination.


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## **ABBREVIATIONS AND ACCRONYMS**

<b>ACP</b>	Average Collection Period
<b>ACP</b>	Average Collection Period
<b>ANOVA</b>	Analysis of Variance
<b>APM</b>	Accounts Payable Management
<b>APP</b>	Average Payment Period
<b>AQR</b>	Asset Quality Ratio
<b>AQR</b>	Asset Quality Ratio
<b>AR</b>	Average Receivable
<b>ARM</b>	Accounts Receivable Management
<b>CA</b>	Current Assets
<b>CAR</b>	Capital Adequacy Ratio
<b>CBK</b>	Central Bank of Kenya
<b>CCC</b>	Cash Conversion Cycle
<b>CL</b>	Current Liabilities
<b>CM</b>	Cash Management
<b>CMA</b>	Capital Markets Authority
<b>CTR</b>	Cash Turnover Ratio
<b>FP</b>	Financial Performance
<b>GDP</b>	Gross Domestic Product
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>LLP</b>	Loan Loss Provision
<b>LLPR</b>	Loan Loss Performance Ratio
<b>NPLR</b>	Non-Performing Loan Ratio
<b>NSE</b>	Nairobi Securities Exchange
<b>POT</b>	Pecking Order Theory
<b>RCP</b>	Receivable Collection Period
<b>RDT</b>	Resource Dependency Theory
<b>ROA</b>	Return on Assets
<b>ROCE</b>	Return on Capital Employed

<b>ROE</b>	Return on Equity
<b>ROI</b>	Return on Investments
<b>SPSS</b>	Statistical Packages for Social Sciences
<b>TA</b>	Total Assets
<b>VIF</b>	Variance Inflation Factor
<b>WC</b>	Working Capital
<b>WCM</b>	Working Capital Management
<b>WCT</b>	Working Capital Turnover

## ABSTRACT

Enterprises strategically employ debts and equity to optimize operational efficiency while proficiently managing borrowings and working capital, significantly influencing a company's performance financially. In developed nations, the pivotal role of the manufacturing sector in driving economic growth and fostering international trade has been well-recognized. This study aimed to assess the impact of borrowing and working capital management on the profitability of manufacturing entities listed on the Nairobi Securities Exchange (NSE). Employing a descriptive research design, it explores complex relationships among various variables. Enterprises strategically employ financial instruments such as debts and equity to optimize their operational efficiency. Proficient management of borrowings and working capital plays a pivotal role in shaping a company's performance financially. This influence extends even to the global stage, where developed nations acknowledge the crucial role of the manufacturing sector in propelling economic growth and fostering international trade. The core objective of this study was to scrutinize how the management of borrowing and working capital impacts on the profitability of manufacturing entities that find themselves listed on the Nairobi Securities Exchange (NSE). To accomplish this objective, a descriptive research design was chosen, allowing for a comprehensive exploration of intricate relationships between various variables. The study zeroes in on ten manufacturing entities that held coveted spots on the NSE as of December 31, 2022, with the data analysis spanning a decade, from 2013 to 2022, ensuring a thorough evaluation. However, the researcher managed to assemble data from eight manufacturing firms. The findings of this analysis reveal crucial insights into these intricate relationships. Specifically, liquidity, financial leverage, inventory turnover, and debtor turnover collectively account for 31.1% of the total variations in the profitability of the listed manufacturing entities in Kenya. This conclusion gains support from the coefficient of determination (R-squared) standing at 0.311. In a more detailed analysis, the coefficient for liquidity emerges as both statistically significant and positive ( $\beta = 0.17473$ ,  $p = 0.000 < 0.05$ ). In practical terms, a unit enhancement in the liquidity of the listed manufacturing entities leads to a significant improvement of 0.17473 units in their profitability. On the flip side, the coefficient for financial leverage proves statistically significant and negative ( $\beta = -0.0542$ ,  $p = 0.000 < 0.05$ ), indicating that a unit enhancement in the financial leverage of the listed manufacturing firms results in a significant decline of 0.0542 units in profitability. Moreover, the coefficient associated with inventory turnover is statistically significant and negative ( $\beta = 0.01349$ ,  $p = 0.008 < 0.05$ ), implying that a unit increase in the inventory turnover of the listed manufacturing entities leads to a noteworthy decline of 0.01349 units in profitability. Finally, the coefficient linked to debtor turnover is statistically significant and negative ( $\beta = 0.05228$ ,  $p = 0.027 < 0.05$ ), signifying that a unit increase in the debtor turnover of the listed manufacturing firms results in a substantial decline of 0.05228 units in profitability. In essence, this study delves into the intricate dynamics of borrowing, working capital management, and profitability within the realm of manufacturing entities listed on the NSE. Liquidity is identified as a positive driver of profitability, while financial leverage, inventory turnover, and debtor turnover are associated with adverse impacts on the bottom line. These findings offer valuable insights for enterprises aiming to fine-tune their financial strategies and bolster their profitability.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Setianto, Sipayung, and Azman-Saini (2022) put forth a proposition emphasizing the critical role of financial system advancements in ensuring the successful implementation of working capital finances, ultimately leading to improved overall profitability. In their study, they further advised against excessive reliance on short-term borrowing as a means to fund operational capital, highlighting the potential risks involved. According to Harjito and Martono (2014), there are three primary objectives in establishing a business: attaining utmost profitability, benefiting the company's owner or shareholders, and maximizing the overall worthiness of a firm.

The hypothesis reinforcing this assessment includes the agency theory, which presents the principal-agent relationship as proposed by Jensen and Meckling (1976). In consequence, it emphasizes the need for checks and balances, as well as the involvement of different individuals in approving and authorizing decisions. Additionally, the resource dependency theory, highlighted by Pfeffer and Salancik (1978), underscores the significance of power dynamics and dependencies between organizations and their external environment. This theory argues that these dynamics greatly influence organizational behavior and decision-making. It suggests that organizations become more dependent on external sources as resources become increasingly critical to their survival and success. Lastly, the pecking order theory, developed by Myers and Majluf in 1984, proposes a hierarchical preference for financing sources within firms. This theory suggests that firms prioritize funding options based on their cost and availability, creating a "pecking order." It asserts that internal financing is preferred, pursued by debt funding, and equity financing is considered as a final resort.

Contextually, Adugna, Mhired, and Kumar (2020) emphasized the significance of factors such as bank size, liquidity, and inflation in making financing and investment decisions. The distribution of cash to shareholders is reinforced by the company's policies regarding capital structure, funding, and investment. This strategy serves as a cornerstone for business agility, showcasing growth to investors. In the dynamic and fast-paced business environment, performance financially has been subject to constant change. The presence of financial analysts, investors, and shareholders has driven significant developments in assessing working capital and performance financially within

manufacturing entities. Nizigiyimana (2014) conducted a study on cement manufacturing firms and concluded that current and quick ratios had a positive influence on performance. These liquidity ratios were found to be indicators of the firm's financial health and efficiency.

### **1.1.1 Borrowing**

Borrowing is the decree of acquiring funds or resources from external sources with the intention of repayment in the future (Khan, Nasir & Arslan, 2020). It encompasses various definitions and can be seen in financial, practical, and intellectual contexts. In financial terms, borrowing involves obtaining capital or financial resources through loans or debt securities. This can be done from banks, financial institutions, or by issuing bonds. It enables individuals and businesses to access funds that may not be readily available, supporting large purchases, investments, or expansion (Salamah, Utamingtyas & Fauzi, 2023). On a broader scale, borrowing extends to the temporary utilization of resources or assets belonging to others. This includes renting, leasing, or borrowing physical assets like equipment, vehicles, or property. Such arrangements provide flexibility and convenience without the need for long-term ownership (Uwingabiye, & Nouwoue, 2022).

According to Chen, Huang and Lin (2022), borrowing supports growth opportunities by facilitating investments in research and development, acquisitions, market expansion, and product launches. In their research, Addisu, Ijara, and Ijara (2023) reached a conclusion suggesting that the current ratio, quantifies the firm's presence liquidity, posits absence of notable impact on general performance. Their findings imply that solely relying on the current ratio as a pointer of a company's accomplishment might be misleading and that other factors should be taken into account for a comprehensive assessment. According Chibuike Amahalu and Samuel (2023), borrowing can enhance the firm's financial leverage, enabling them to amplify their returns on investment and accelerate their growth trajectory.

Borrowing is evaluated and gauged using a variety of units and metrics, serving as indications of financial well-being and performance. Essential units include the debt-to-income ratio, which compares the total debt obligations to income or revenue, and interest rates, which determine the borrowing cost (Eze, Okoye, Amahalu & Obi, 2022). Credit scores act as numerical representations of creditworthiness, relying on borrowing and repayment history, assisting lenders in assessing risk. Additionally, the debt service coverage ratio evaluates an organization's

capability to fulfill debt obligations by comparing operating income to debt service payments (Saputra, 2022). By employing these measurement units, individuals and organizations can assess their borrowing capacity, manage debt levels, and make well-informed borrowing decisions in line with their financial circumstances and objectives. This study intends to use leverage and liquidity as the proxy of borrowings.

### **1.1.2 Working Capital Management**

According to Kayani, De Silva & Gan (2019), working capital management entails the strategic supervision and regulation of a business's present liabilities and well as assets to guarantee the effective optimization of resources and uphold liquidity. It is the procedure of overseeing and optimizing a company's near-term assets and borrowings to sustain a robust cash flow and fulfill operational requirements. As per Nobanee and Dilshad (2021), it encompasses the administration of inventory levels, accounts receivable, and accounts payable, aiming to strike a harmonious equilibrium between preserving adequate working capital and averting excesses that restrict the availability of cash unnecessarily. Moreover, it articulates the methodologies and tactics employed by a company to efficiently handle its immediate assets and liabilities, with the objective of maximizing profitability while minimizing risks (Prasad, Narayanasamy, Paul, Chattopadhyay, & Saravanan, 2019).

Working capital activities significantly impact the financial well-being of a firm, irrespective of its stability. As highlighted by Aduda and Ongoro (2020), the effectiveness and design of working capital exert a vital influence on profitability. Moreover, it serves as a crucial pillar governing the organization's liquidity. It is paramount to postulate that the continuity of a firm is directly linked to working capital. As per, Masa'deh, Basah, Ibrahim and Anwar (2023), it dominates some central strategies, controls, and prudent optimization of current liabilities and assets, aiming to enhance operational efficiency and eliminate the presence of idle assets within the organization. This involves the implementation of measures to maintain an adequate level of funds for day-to-day operations, as emphasized by Kayani (2023), through careful monitoring and regulation of cash, inventory, and short-term debt levels to strike a balance between operational efficiency and mitigating financial risks.

WCM is epicenter in fortifying the liquidity state of entities. A vulnerable liquidity position poses risks to the company's solvency, rendering it unstable and unsound. The metrics employed to assess working capital management have varied over the years, depending on the researchers' perspectives. For instance, Alvarez, Sensini, and Vazquez (2021) examined leverage, while Ajayi, Abogun, and Odediran (2017) utilized Cash Conversion Cycle (CCC) and Average Collection Period (ACP) to elaborate on working capital management. Mulyono, Djumahir, and Ratnawati (2018) focused on Days of Sales in Inventory and Days of Payables as proxies for working capital management. Conversely, the present study emphasizes Inventory Turnover and Debtor Turnover as key measures.

### **1.1.3 Profitability of Manufacturing Firms**

According to Arnaldi, Novak, Roscigno and Zhang (2021), profitability is the metrics of a company's capacity to yield returns and financial advantages from its business endeavors. It mirrors the company's effectiveness in managing expenditures, producing revenue, and maximizing returns on investments. A profitable company typically signifies a favorable financial standing and the potential for sustainable expansion. Moreover, it pertains to the degree to which a company's earnings surpass its costs and expenses, resulting in a positive net income (Morshed, 2020). It signifies the company's aptitude for generating profits and establishing worth for its shareholders. Conversely, it embodies the performance financially of a company, exemplifying its proficiency in generating earnings and accomplishing a favorable return on investment (Anton, & Afloarei Nucu, 2020). Profitability stands as a pivotal gauge for evaluating the company's financial well-being, alluring investors, and fostering sustainable business growth.

Profitability holds immense relevance for enterprises across diverse sectors, serving as a critical indicator of financial success and viability (Nastiti, Atahau, & Supramono, 2019). It acts as a pivotal yardstick of the enduring endurance and expansion of a company, exerting a significant influence. Profitability directly affects a business' proficiency to bring forth preeminent returns for its shareholders and investors, attracting capital and supporting ongoing operations. Moreover, profitability serves as a testament to the company's adeptness in managing costs, allocating resources efficiently, and maintaining a competitive advantage in the market (Nguyen, Pham, & Nguyen, 2020). By providing the necessary funds for reinvestment, research and development,



and expansion initiatives, profitability empowers the company to outperform competitors and seize growth opportunities.

Additionally, profitability enhances the company's creditworthiness, facilitating access to financing and opening doors to strategic partnerships and collaborations. It enables businesses to reward their workforce, invest in talent development, and contribute to the economic well-being of stakeholders and communities (Oladimeji & Aladejebi, 2020). Ultimately, profitability acts as a comprehensive measure of financial well-being and a reliable indicator of business success, guiding strategic decision-making and ensuring the longevity sustainability of the organization. In the study conducted by Mulyono, Djumahir, and Ratnawati (2018), the focus was on maximizing Return on Assets (ROA) as a means to expound on profitability. By analyzing the efficacy with which the company utilizes its assets to generate earnings, the study shed light on the company's overall profitability. Similarly, in the research conducted by Madugba and Ogbonnaya (2016), the emphasis was on utilizing ROCE as a metric to measure profitability. ROCE measures the return generated from the capital employed in the business, granting deeper knowledge into the firm's capacity to yield profits from its invested capital.

#### **1.1.4 Borrowing, Working Capital Management and Profitability**

Borrowings and working capital are intricately connected factors that can have a profound impact on a firm's profitability. Borrowings encompass the external funds acquired by a business, such as loans, bonds, or lines of credit, to support its operations or investment endeavors. On the other hand, working capital represents the company's current assets, including cash, inventory, and accounts receivable, minus its current liabilities, such as accounts payable and short-term debt (Aduda, 2021). It serves as a measure of the firm's short-term liquidity and its capacity to meet its day-to-day operational expenses. Effective management of these two elements is crucial in optimizing profitability. Debts and operating capital are intricately linked elements that can significantly influence a company's performance financially.

According to Morshed (2020), whenever a company strategically utilizes borrowings to promote its working capital, it can potentially fuel growth and generate higher profits. By securing external funds, businesses can invest in expanding their operations, developing new products or services, or acquiring assets that contribute to increased productivity and revenue generation. Adequate

working capital ensures the smooth functioning of the company's day-to-day activities, such as purchasing inventory, managing accounts payable, and meeting short-term financial obligations. It provides the necessary liquidity to sustain operations, fulfill customer orders, and capitalize on growth opportunities.

Furthermore, optimizing the balance between borrowings and working capital is essential for profitability. Excessive borrowing can lead to high interest expenses and debt servicing costs, which can erode profitability (Aduda, & Ongoro, 2020). On the other hand, insufficient working capital can hinder the firm's proficiency to meet its financial obligations and seize growth opportunities. Therefore, prudent financial management involves striking the right balance between borrowings and working capital to maintain a healthy cash flow, minimize costs, and maximize profitability.

In summary, the relationship between borrowings and working capital is integral and holds considerable sway over a company's profitability. The prudent utilization of borrowings to bolster working capital has the potential to propel growth and yield augmented profits. Astute management of working capital guarantees adequate liquidity and empowers the company to fulfill its operational requirements. Therefore, achieving a harmonious equilibrium between borrowings and working capital is paramount in optimizing profitability and fostering enduring financial prosperity (Kayani, 2023).

### **1.1.5 Manufacturing Firms Listed at Nairobi Securities Exchange**

Developed countries have recognized the manufacturing sector as the central hub for economic transformation and favorable outcomes in international trade (Salamah, Utaminingtyas, & Fauzi, 2023). Manufacturing entities undertake a pivotal mandate in driving the economic prosperity of a nation, with the sector directly impacting the nation's overall economic landscape. These entities allocate a portion of their earnings as dividend payouts to shareholders, and their presence as listed entities on the Nairobi Security Exchange (NSE) has been instrumental in bolstering the country's GDP. The well-being of a state hinges on the performance and growth of its manufacturing sector, and many developed countries have introduced groundbreaking and modern innovations to fuel rapid transformations in this sector (Amponsah-Kwatiah, & Asiamah, 2021).

Manufacturing enterprises hold immense importance in the economy for several reasons. , they are instrumental in driving economic expansion and progress by producing goods that meet consumer needs and demands. These entities create employment opportunities across various skill levels, thereby reducing unemployment rates and improving overall living standards. These entities act as catalysts for innovation and technological advancements. They invest in research and development to enhance production processes, introduce innovative products, and improve operational efficiency. This culture of innovation extends beyond the manufacturing sector, stimulating productivity and enhancing competitiveness in other industries (Amponsah-Kwatiah, & Asiamah, 2021).

Additionally, Lyngstadaas, (2020) posits that manufacturing entities establish strong linkages with both upstream and downstream sectors. They rely on suppliers for raw materials and components, creating demand and supporting a diverse range of suppliers and service providers. Additionally, their products serve as inputs for other sectors such as retail, transportation, and construction, driving economic activity and generating additional employment opportunities. As a consequence, manufacturing enterprises make significant contributions to international trade by exporting their products, earning foreign exchange, and strengthening the country's balance of payments. They also play a crucial role in attracting foreign direct investment (FDI) as multinational companies establish manufacturing facilities, bringing in capital, technology, and expertise.

Moreover, manufacturing entities often invest in infrastructure development, engage in corporate social responsibility initiatives to support local communities, and actively contribute to sustainable development practices. By establishing facilities in underdeveloped areas, they promote regional development by creating jobs and fostering inclusive growth. Their presence and success are integral to achieving overall prosperity and ensuring a thriving economy (Gakondi & Muturi, 2019).

## **1.2 Research Problem**

The importance of operating capital in connection with FP has been confirmed by Tjandra, Murhadi, and Herlambang (2022). Moreover, Setianto, Sipayung, and Azman-Saini (2022) stressed the crucial role of financial growth in effectively applying operating capital financing to attain enhanced profitability. The research conducted by Arifin, Fauziah, and Suwarno (2023)

demonstrated that profitability directly influences company value, while company size and corporate ownership do not significantly affect company value. Additionally, their results suggested that capital structure can regulate the correlation between profitability and company value, but it does not have a controlling effect on the relationship between company size or corporate ownership and company value.

In the textile sector, Tahir and Anuar (2016) found that certain working capital factors negatively impact return on assets (ROA), including the mean collection duration, NWC level, CA to operating income ratio, CA to sales ratio, and CL to aggregate assets ratio. Conversely, positive associations were observed between profitability and factors such as the duration of accounts payable, inventory turnover, CCC, net trade cycle, cash turnover ratio, CA to total assets ratio, and current ratio. Anwar (2018) focused on the average collection period of receivables in manufacturing entities and discovered a significant negative effect on profitability, while inventory turnover showed no notable impact. Madugba and Ogbonnaya (2016) examined the influence of average payment time on profits and revealed its effect on EPS and ROCE. Maintaining a favorable average payment time was emphasized for longevity sustainability of entities.

Internationally, in the context of pharmaceutical companies in India, Yameen (2019) examined the current ratios and quick ratios and found that they have a substantial positive impact ROA. In Indonesia, Anwar (2018) postulated that cash turnover is strongly and positively correlated with profitability, whereas ACP of receivables has a significant inverse effect on profitability. Conversely, inventory turnover post immaterial effect on profitability. Shifting to Pakistan, Tahir and Anuar (2016) concluded that the components of working capital play a vital task in the profitability of the textile industry. They recommended the implementation of effective working capital policies to enhance firm profitability. Aytac, Hoang, Lahiani, and Michel (2020) conducted a thorough computation and observed that the contemporary worldwide fiscal distress posted a notable impact on the relationship between WCM and the fiscal returns of wine companies in France.

Regionally, Shittu and Abdulkadir (2023) conducted a study in Nigeria and found a noteworthy positive moderating interrelationship between the NPLR and CAR. Additionally, they observed that LLPR and AQR posted inverse but arithmetically significant effects. In Ghana, Amponsah-Kwatiah and Asiamah (2021) investigated various factors such as inventory management, accounts

receivables, accounts payables, CCC, current assets, current ratio, in addition to the firm size. Their findings indicated that these factors register positive impacts on ROA and ROE, while leverage had a negative influence. Conversely, Yusuf and Sani (2018) focused on receivable collection time in the food and beverage sector in Nigeria but did not find any significant associations. It is imperative to opine that the current study specifically examined indexed manufacturing entities, addressing a contextual gap.

In Kenya, examining manufacturing entities in Nakuru Town, Muya and Gathogo (2016) employed a Stratified random sampling technique to scrutinize the correlation between WCM and profitability. Evidences demonstrated that both the APP and CCC registered a significant impact on business profitability. Specifically, the cash conversion cycle exhibited a detrimental ramification on profitability, whereas the APP showcased a positive influence. Overall, study underscored the substantial and positive role of efficient WCM in enhancing firm profitability. Subsequently, Nizigiyimana (2014) investigated the effects of WCM in cement manufacturing companies listed on the NSE, utilizing a Purposive sampling method. The results indicated that the current and quick ratios were positively interconnected with ROCE. However, it is paramount to encapsulate that the study solely focused on cement manufacturing entities, indicating a contextual gap in the existing research. From the empirical review, it is evidence there are methodological, contextual and conceptual gaps which need to be addressing by answering the question on; What is the effect of borrowing and working capital management on profitability of manufacturing entities listed at Nairobi Security Exchange?

### **1.3 Objective of the Study**

To determine the effect of borrowing and working capital management on profitability of manufacturing entities listed at Nairobi Security Exchange.

### **1.4 Value of the Study**

The study offers substantial value to multiple stakeholders, encompassing financial theories, manufacturing firms, management, policy makers, and researchers. It enriches financial theories such as Agency Theory, Resource Dependency Theory, and Pecking Order Theory by providing empirical evidence and valuable insights that further validate and enhance these theoretical

frameworks. The policy implications of the study carry paramount importance, benefiting not only the manufacturing firms themselves but also regulatory bodies and policymakers in Kenya. The primary beneficiaries are the manufacturing listed entities in Kenya, as the implementation of the recommendations regarding liquidity management, debt regulation, and inventory turnover can significantly elevate their financial performance and bolster their overall stability. This can translate into heightened profitability, mitigated financial risk, and a more streamlined management of working capital.

Shareholders and investors within these manufacturing listed entities also stand to gain from these recommendations. The enhanced financial performance engendered by the suggested measures may result in superior returns on investments and a heightened value of their shareholdings.

In parallel, regulatory authorities in Kenya can harness the insights gleaned from this study to craft policies conducive to promoting sound financial practices within the manufacturing sector. For instance, these authorities may consider the formulation of guidelines pertaining to liquidity ratios, debt-to-equity thresholds, or expectations pertaining to inventory turnover. These measures can play an instrumental role in ensuring the stability and overall health of the manufacturing sector within the nation.

In closing, the study ushers in a rich array of recommendations poised to enhance our comprehension of financial theories such as Agency Theory, Resource Dependency Theory, and Pecking Order Theory. Additionally, it carries policy implications that stand to significantly benefit not only the manufacturing entities but also the stakeholders and regulatory authorities in Kenya. Ultimately, these recommendations, be they in the form of liquidity management, debt regulation, or the improvement of inventory turnover, can pave the way for a more stable, prosperous, and sustainable manufacturing sector.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This section is of utmost prominence as it backs the fundamental theoretical framework for the assessment, serving as its cornerstone. It explores the diverse range of variables that impact profitability, leading to a comprehensive cognizance of the factors involved. Moreover, it critically contemplates prior empirical studies expedited by scholars, assessing their contributions and identifying gaps within the existing research. Moreover, the chapter incorporates a graphical representation of the predictor and predicted variables, facilitating the comprehension of their interconnectedness. Finally, it culminates by providing a concise overview of the main findings and underscoring the existing research voids that were examined in the present study. By integrating theoretical underpinnings, empirical examinations, and areas for further investigation, this chapter establishes the foundation for the ensuing research, guaranteeing a sturdy and knowledge-driven approach.

### **2.2 Theoretical Framework**

The evaluation of working capital, borrowing, and profitability is guided by various theories that provide a framework for understanding the dynamics at play. One such theory is the Agency Theory, crafted extensively by Jensen and Meckling (1976), which highlights the presence of conflicts of interest within the management of entities. Another relevant hypothesis is the Resource Dependency Theory, initiated and perfected by Pfeffer and Salancik (1978), which emphasizes the extent to which entities rely on external resources for their functioning, influenced by Penrose's (1959) work. Additionally, Pecking Order Theory, introduced by Stewart and Majluf (1984), holds significant preeminence in this research. This theory elucidates why companies prioritize financing their own investments and determining their capital structure rather than relying on external investors. By incorporating these theories, the study gains a comprehensive understanding of the interplay amidst working capital and borrowing in comparison to degree of profitability, shedding light on the decision-making processes of entities.

### **2.2.1 Agency Theory**

Agency theory, proposed by Jensen and Meckling (1976), forms a foundational framework for evaluating the relationship between WCM, profitability, and borrowing. According to this theory, the administration of entities is inherently characterized by conflicts of interest between the business owners and the management. These conflicts emerge as a result of contrasting objectives and motivations between the two entities involved. The theory operates on a set of premises that can vary depending on the specific circumstances and application of the study. One crucial premise is that individuals act based on their own self-interest and strive to optimize their personal well-being Naz, Ali, Rehman and Ntim (2022). Furthermore, agency theory acknowledges the existence of information asymmetry, whereby managers possess greater knowledge and information relative to the shareholders. These assumptions offer valuable perspectives on the complexities of decision-making, control, and oversight within organizations, establishing a framework for analyzing the impact of agency conflicts on WCM, profitability, and borrowing decisions.

Agency theory faces criticism due to its reliance on unrealistic assumptions concerning human behavior. Critics argue that the theory fails to account for the complexity of rational and social forces that shape decision-making and actions. By focusing solely on the principal-agent relationship within a firm, the theory overlooks the broader societal influences that can significantly impact behavior and outcomes (Irdawati, Laba, & Amar, 2022). Moreover, the agency theory is often criticized for its lack of prescriptive guidance, as it primarily serves as a descriptive framework rather than offering specific recommendations or solutions for addressing agency conflicts. These criticisms highlight the limitations of the theory and call for a more comprehensive and holistic approach to understanding organizational dynamics and governance.

Nevertheless, the agency theory holds relevance in the context of WCM and profitability. The theory provides a framework for understanding the principal-agent relationship and clarifies the roles and expectations of each party involved. It helps identify potential agency challenges and offers insights into strategies for mitigating them (Jaworski, & Czerwonka, 2022). By underscoring the eminence of aligning motivations within an organization, the theory simplifies the institution of effective managerial frameworks that promote responsibility and stimulate achievement. Furthermore, the agency theory shapes the determination of corporate financing by scrutinizing the association between ownership composition and capital allocation.



### **2.2.2 Resource Dependency theory**

Originating from Penrose's (1959) seminal work, resource dependency theory, perfected comprehensively by Pfeffer and Salancik (1978), elucidates the impact of external forces on entities' behavior. At its core, this theory underscores the notion of asset heterogeneity, acknowledging the diverse value and significance attached to different resources within organizations. Moreover, it posits that resources are not readily transferable, emphasizing the complexities inherent in acquiring and allocating them. Additionally, resource dependency theory recognizes the ever-changing and dynamic business environment, underscoring the imperative for firms to continually adapt and respond.

This theory, while backing viewpoint insights into the impact of external resources on WCM and profitability, is not without its limitations. One notable criticism is its failure to provide specific strategies for resource management, leaving organizations to grapple with detrimental of effectively utilizing their resources (Chen, Duran, Sauerwald, Hitt & van Essen, 2023). On top of that, the theory fails to adequately recognize the importance of internal resources, which serve as essential components alongside external resources in facilitating organizational achievement. Moreover, resource dependency theory is predominantly constructed and utilized within the context of profit-driven enterprises, thus restricting its relevance to public and non-profit organizations. Another criticism pertains to its lack of adaptability, as it does not sufficiently acknowledge the ever-evolving and fluid nature of the business landscape, characterized by continuous transformations and fluctuations.

In spite of the aforementioned shortcoming, RDT remains a valuable conceptual framework for comprehending the intricate dynamics of how organizations interact with their external environments. RDT showcase extensive knowledge into the ever-evolving and complex nature of the contemporary business landscape, underscoring the gravity of adaptability and responsiveness in organizational tactics (Jiang, Luo, Xia, Hitt, & Shen, 2023). Moreover, the theory acts as a diagnostic tool, reinforcing entities pinpoint vulnerabilities in their resource dependencies and enabling proactive risk management (Malatesta & Smith, 2014). Additionally, RDT guides longevity planning by enlightening the intricate interplay between external resources and organizational performance, simplifying informed judgements that are beckons to WCM, borrowing practices, and overall profitability. As such, resource dependency theory provides a

comprehensive lens through which the complexities and interrelationships of these vital facets of organizational functioning can be analyzed and understood.

### **2.2.3 Pecking Order Theory**

The theory holds a pivotal mandate in this research, giving insightful blueprints into the financing decisions of entities in interrelation to WCM, borrowing, and profitability. Introduced by Myers and Majluf (1984), the pecking order model elucidates why entities prioritize financing their investments and capital structure through internal resources rather than relying on external investors. According to this theory, organizations prefer to utilize their existing assets to fund investments, turning to external sources only when internal resources are insufficient. Moreover, the theory acknowledges the presence of asymmetrical information, where decision-making is influenced by the varying levels of knowledge possessed by different stakeholders within the organization.

Despite its valuable contributions, is not without its shortcoming in connection to working capital management, borrowing, and profitability. One significant criticism pertains to the theory's inability to account for the various factors that influence financing costs. As per Urhoghide, & Korolo (2022), the theory does not provide a comprehensive framework for quantitatively assessing how information flows impact the cost of financing decisions. Furthermore, the Pecking Order Theory does not readily accommodate new forms of financing that have emerged in recent years, as it has not been updated to incorporate the evolving landscape of fiscal fundraising approaches. These limitations highlight the need for further research and refinement to enhance the applicability and relevance of the POT in the context of WCM, borrowing, and profitability analysis.

In spite of the aforementioned limitations, the Pecking Order Theory remains highly pertinent and significant when examining WCM, borrowing, and profitability. A noteworthy advantage is its capacity to elucidate the influence of information asymmetry on the costs associated with financing (Korent & Orsag, 2022). This theory grants valuable knowledge into how the availability and dissemination of information can affect the expenses incurred in making financing decisions. Furthermore, the Pecking Order Theory offers valuable guidance on the various options for obtaining funds for new investments, taking into account the preference for internal financing over

external sources. Given these strengths, the Pecking Order Theory assumes a pivotal role in this study by providing a comprehensive framework for exploring the intricacies of managing working capital, making borrowing decisions, and achieving profitability in the presence of information asymmetry and financial constraints.

## **2.3 Determinants of Profitability of Manufacturing Firms Listed at Nairobi Security**

### **Exchange**

Profitability of an organization is intricately linked to the crucial indicators of working capital management and borrowing. These key metrics encompass liquidity, financial leverage, turnover of debtors, and inventory turnover. The successful functioning of the economy heavily relies on the effectiveness of these factors, as they contribute to overall prosperity. Likewise, the manufacturing sector diligently scrutinizes the behavior of these variables, as they frolic a vital function in denoting the viability of investments. By undertaking meticulous analysis of profitability determinants, businesses can ensure their sustainable growth and resilience in the ever-changing economic landscape.

### **2.3.1 Liquidity**

Liquidity is the way in which firm can sell security or assets without leading to significant price movement. Furthermore, liquidity is degree at which how fast can organization changes assets into cash without incurring a loss of transaction. This is a crucial working capital management tool. Hidayata and Dewi (2022) expedited an assessment to examine the influence of liquidity on the profitability. From their assessment, they established that liquidity does not exert any impact on the profitability of coal mining companies.

A study done by Buana, Husna and Suryani (2023) examine the repercussions of liquidity on profitability. This aimed at manufacturing entities catalogue on the Indonesia Stock Exchange market. Examination pinpointed that liquidity has positive influence on the profitability in the sampled entities. Furthermore, another exploration was spearheaded by Al-Matari (2023). The assessment was on the pointers of bank profitability and it was uncovered that liquidity has a positive moderate ramification on the profitability of the banks and performance of the banks. The assessment that has been reveals different findings, thus there is need to dig more on the liquidity.

### **2.3.2 Financial Leverage**

It is worthwhile denoting that financial leverage means the utilization of borrowed money to fund business projects or operations. this involves maximization of debt, capital together with equity capital to enhance the potential earning of firm. A study was conducted by Hidayat & Dewi (2022) on the influence of leverage on the profitability. Evidence from the extensive survey unearthed financial leverage has substantive consequences on profitability on coal mining companies.

Another assessment was done also on the same by Hakim, Kismanah, Mulyadi, Sarra & Kimsen (2023) and it was pinpointed that financial leverage moved in similar direction with profitability. Kalash (2023) examines the same determinant and checks its impacts on the Turkey emerging market and finds different findings from the above. Examination revealed that currency problems exacerbate a substantive negative connection amid leverage and performance.

### **2.3.3 Inventory Turnover**

numerical representation offers a tangible measure of the company's inventory rotation and renewal frequency. It is also called inventory turnover ratio. It stands as a pivotal financial parameter employed to evaluate the efficacy of a firm's inventory management strategies. This metric assumes the role of a numerical gauge that quantifies the company's agility in selling its inventory and subsequently replenishing it with fresh stock, all within a designated time span. Inventory turnover ratio is used to evaluates the efficiency of enterprise's inventory governance. This shows how fast an institution is able to sells its stocks and replace them with new inventory. Herison, Sahabuddin, Azis & Azis (2022) examine the influence of inventory turnover on profitability degree on Indonesian Stock Exchange from 2015-2019.

It was established that inventory turnover ratio, influence the profitability of Indonesian entities. Amponsah-Kwatiah & Asiamah (2021) also did a study on the stock management in respect to manufacturing companies in Ghana. the outcome from this assessment showed that inventory governance has positive influence on ROA as well as in ROE. These studies have positive outcome, but the current study aimed at evaluate the same determent in Kenya's context.

### **2.3.4 Debtors' Turnover**

Debtors' turnover, is also call accounts receivables turnover. it refers to monetary ratio that evaluates the efficiency of a firm when it comes to collection of payment from its clients from credit sales made at a particular day. An assessment was done by Herison, Sahabuddin, Azis & Azis on the influence of accounts receivables turnover on the profitability. The evaluation's findings showed that debtors 'turnover has significant and positive impacts on profitability.

Ngungi, Koori and Wamugo (2019) examined the working capital governance and pecuniary performance. Study's evidences showed that debtors collection period moves in dissimilar direction ROA. In addition, Amponsah-Kwatiah & Asiamah (2021) carried out a scrutiny on accounts receivables and ROA of manufacturing institutions in Ghana. The study found out that accounts receivable turnover positive repercussions on the profitability.

## **2.4 Empirical Reviews**

### **2.4.1 Global Studies**

Abdulnafea, Almasria and Alawagleh (2022) conducted assessment in the scrutinized the influence of WCM and Loan management policies. The research is in the contextual setting of Jordanian's banks fiscal performance. During assessment 16 banks enlisted at Amman Stock Exchange within timeframe of 2017 -2020. In addition, investigation engaged panel data to examines the association in the midst of variables collected from 64 financial reports. This assessment established that both working capital management and loan management policies has significant relationship with performance financially. This assessment took place in Jordan thus resulting to a gap of context which current study strive to fill in.

Roni, Djazuli and Djumahir (2018) computed the ramifications of WCM on the profitability of parastatals in processing industry field. Assessment delved deeply into all state-owned entities of Indonesia. The test used purposive sampling approach and a total of 13 entities were sampled in respect to the criteria. In addition, secondary data were collected from the entities sampled and multiple linear regression was utilized to assess. Outcomes unveiled that stock turnover and structure of asset have positive and significant influence on corporate profitability. However, liquidity, cash turnover and receivable turnover posted immaterial influence on the profitability of parastatals of Indonesia. This study took place in a foreign country whereas the current examination targeted the manufacturing entities listed in NSE.

Tahir and Anuar (2016) evaluated critically key attributes that blueprint WCM and performance of companies in textile industry in Pakistan. A total number of 127 entities catalogue in Karachi stock exchange between 2001 and 2012 were used for the evaluation. The study maximized dynamic panel generalized technique of moments to examine data. Evidences showed that ACP in days, CA to utilizing income, CA to ratio of sales, net working capital degree, CL to sum of assets have inverse effect on ROA. However, ACP in days, CCC, net trade cycle, CTR, CA to TA ratio and current ration have positive connection with profitability in a company. In the scenario of control variable, growth of sales and size of institution has positive link with the profitability, in the contrast, GDP, inflation, Interest and financial debt ratio showed negative link. The findings from this test cannot be fully engage in Kenya due to different settings of the assessment, thus the current assessment aimed at bridging this contextual gap.

Aytac, Hoang, Lahiani and Michel (2020) did a study on WCM and profitability. The study targeted win companies in France. The study period was between 2003 and 2014 and main focused of the study was to know the effect of cash conversion cycle on ROA. The study-controlled determinants like industry size, its growth and tangibility and lastly leverage, the assessment established that CCC has negative influence when it comes to profitability of French wine enterprises. Nevertheless, there was no ideal degree of cash conversion cycle granting entities to fully used their benefits. From this study the test majored on CCC whereas the current study focuses on a number of determinants and how they influence profitability of entities listed in NSE.

Kartikasary, Marsintauli, Sitingjak, laurens, Novianti and Situmorang (2021) examined the impacts of WC, financial debt ratio, fixed financial asset ratio on returns. The assessment focused on the Indonesian consumer goods industry. The study utilizes a representative of industries enlisted in Indonesian Stock Exchange catalogue between 2017 and 2019, 2-year study period. The study further uses secondary data gathered from Indonesian Stock Exchange on annually foundation and analyze the data with MLP by SPSS 20. Consequently, targeted population were 54 entities and 46 entities excel purposive sampling phase. The outcome from the evaluation showed that FA ratio, working capital management practices and profitability has important association, whereas FD has no impact on the profitability.

Setianto, Sipayung and Azman-Saini (2022) examined working capital funding and profitability of corporations. The study engaged data collected from 5 Asian countries namely; Malaysia, Philippines, Singapore, Thailand and Indonesia. A total number of 6283 enterprises were observed for the study between 2009 and 2018. Furthermore, the research utilized two-phases generalized method of moment estimator. From the assessment, it was established that entities built on developed countries have a chance to maximized a bigger rate of short-term loan without destroying their gains. The study's insights reflect the developed countries whereas the current study focuses on the developing country.

Herison, Sahabuddin, Azis and Azis (2022) examine the impacts of turnover of WC, accounts AR and inventory turnover on the gains rate on the Indonesian Stock Exchange. The study period for this research work was between 2015 and 2019. The study established that WCT and ART post positive and substantial impacts on profitability. However, the study further established that working capital turnover has partially negative and significant influence on the profitability in retail trading entities in Indonesia Stock Market. The assessment examined Indonesian market, but the current study aimed at examining the Kenya's Market.

#### **2.4.2 Regional Studies**

Ajayi, Abogun and Odediran (2017) delved into the influence of WCM on the performance financially. In addition, the study aimed at manufacturing entities in Nigeria, particularly consumer goods manufacturers. The secondary information was collected from yearly financial statement between 2005 and 2014, making an assessment period of 10 years. Through purposive sampling technique, 15 entities were sampled for the research. Furthermore, descriptive statistics were engaged to evaluate the deviations. Therefore, inferences were pull utilizing correlation and panel regression scrutiny was used on the performance and WCM. The findings were established as follows; foremost, cash conversion cycle and performance financially had negative relationship. In the other hand, the study established that performance financially with average collection time had positive association. This study took place in Nigeria, West Africa nation thus findings cannot be utilized fully in East Africa countries, more so in Kenya as a result of difference in economic, political and sociological settings and these influence the findings and degree of impact by each determinant

Yameen (2019) carried out research on the influence of liquidity on return of pharmaceutical entities. This assessment targeted institutions listed in Bombay Stock Exchange; whereby balanced panel data was maximized including 82 entities from 2008-2017 maximizing data extraction Prowess IQ database. Assessment thoroughly unveiled that current and quick ratios move in one direction substantively with ROA. This study took play in regards to entities listed in Bombay Stock Exchange whereas the present exploration focuses on manufacturing entities listed in Nairobi Securities Exchange.

Yusuf and Sani (2018) examined WCM activities and performance financially. The assessment targeted food and beverage industries situated in Nigeria. Investigation used descriptive design in scrutiny, maximizing secondary data which gathered from 10 companies sampled for the study. further, data analysis used regression analysis technique that revealed nonexistence link between receivable collection period and returns. This assessment assessed beverage and food entities in Nigeria, in contrast to the current review that aimed at manufacturing entities in Kenya, specifically entities listed on NSE.

Madugba and Ogbinnaya (2016) examined the importance of APP on the profitability. this assessment evaluates Nigerian companies utilizing regression that tested secondary data sampled from selected institutions. The outcomes of the research showed that average payment influence earning per share similar with ROCE. Further, it revealed that better average payment maintenance the companies in business. The present assessment was carried out locally not like that one conducted in foreign setting therefore filling in contextual gap.

In 2021 an investigation was expedited by Amponsah- Kwatiah and Asiamah regarding WCM practices in comparison to profitability of the catalogue manufacturing companies in Ghana. The core function of the assessment was to encapsulate the influence of WCM activities on profitability. In addition, the study uses quantitative research design under causal research approach utilizing a balance pane of a total number of 20 manufacturing entities between 2015-2019. The study shows that management of stock, AR, CCC, CA, AC, and size of the firm has positive influence on the ROA and ROE (return on equity) whereas leverage influence them negatively. This study is in the context of Ghana a foreign country, thus there is need of conducting a local study, Kenya.



Addisu, Ijara and Ijara (2023) examined the repercussions of WCM on performance financially. Study targeted the private commercial banks in republic of Ethiopia and gathers secondary data from these entities. Historical data was sourced from the audited funds statement of 5 banks between 2011 and 2020. The institutions were sampled on convenience basis. Furthermore, the assessors applied both descriptive statistics with inferential statistics during analysis phase. The evaluation findings show that size of banks and loan and total assets has important influence on the bank's performance financially. Whereas the current ratio, CA to sum asset ratio and CL has insignificant influence on performance financially of private banks. The assessment focus on the private banks in Ethiopia whereas the current evaluation aimed at manufacturing entities listed in NSE.

### **2.4.3 Local Studies**

Ngugi, Koori and Wamugo (2019) conducted a study to examine association amid WCM and performance financially. Assessment targeted entities in republic of Kenya. The investigation maximized qualitative, correlational and descriptive research designs to establish positive association between ROA and Cash Flow Ratio. In addition, a significant and positive link between creditors payment time and ROA were also found. Further, negative link between ROA and Debtors' collection time found. This study did not specify the sector of the entities that examined whereas the current assessment targets manufacturing entities catalogue on NSE.

Njoroge (2015) examined performance of construction and allied entities catalogue in NSE. furthermore, inquiry ventured into knowing the association amidst liquidity and returns on construction and allied industries catalogue in NSE in Kenya. the secondary data was used in this assessment and was examine by regression statistics. The assessment revealed that increase in accounts payable in comparison with equity affects the entity's returns. This assessment only reflects two variables of WC whereas the prevailing review seeks to know the influence of 4 variables of working capital on profitability.

Kimondo (2014) did another study on liquidity and profitability in Kenya. The assessment targeted non-financial institutions in NSE, Kenya. Appraisal utilizes descriptive research approach and involved 39 non-financial institutions, the study year 2009-2013. The assessment used correlation and regression statistical model for analysis. After assessment of the collected data, the study

established positive correlation on liquidity and return on assets. The uncovers from this assessment cannot be fully employed since data used are more outdated thus cannot reflect the current market.

Mulumba (2016) did an evaluation on stock management activities and performance financially of Agro-chemical companies. The focal center of the assessment was Kenya based Agro-chemical entities. Through utilization of descriptive technique 65 companies were sampled and data were gathered from procurement managers, operation managers and analyzed it employing statistical descriptive technique. The study revealed that ROE enhanced generally as a result of stock management. This assessment majored on the agro-chemical companies while the current study majored in a diverse manufacturing entities listed in NSE.

Onchangwa (2019) carried out investigation on WC administration and financial distress of institutions. Study aimed at non-financial entities registered in NSE market in Kenya. Assessor used quantitative research design. Furthermore, historical data was sourced for the assessment. The findings unveil that financial distress and CCC had positive association whereas average collection time and financial distress had negative relationship. Furthermore, negative association was found out between financial distress and accounts payable. This study aimed at association between attributes of WCM and financial distress not pay attention to the context of performance financially such as profitability in entities. This study focused on non-profit making organization whereas the prevailing appraisal focuses on manufacturing entities listed on NSE.

Nizigiyimana (2014) examined the WCM on cement manufacturing firm listed on NSE, Kenya. purposive sampling approach was maximized and then secondary data was sourced between 2008 and 2012 and examined by descriptive statistics based on multiple regression model. The outcomes unearthed that current ratios and quick ratio possess positive influence on the ROCE. In contrast, this assessment only scrutinized cement manufacturing companies therefore setting gap was arising. Therefore, the present study aimed at filling the contextual gap of this assessment. This assessment utilized data between 2008 and 2012, and this data cannot reflect the current manufacturing market, therefore the current strives to fill in this gap.

Riri (2019) examine influence of WCM policies on FP. The assessment majored on hotels in Kenya, particularly county government of Nyeri. The researcher employed descriptive research approach. As a result of the study, it was established that cashflow management has positive

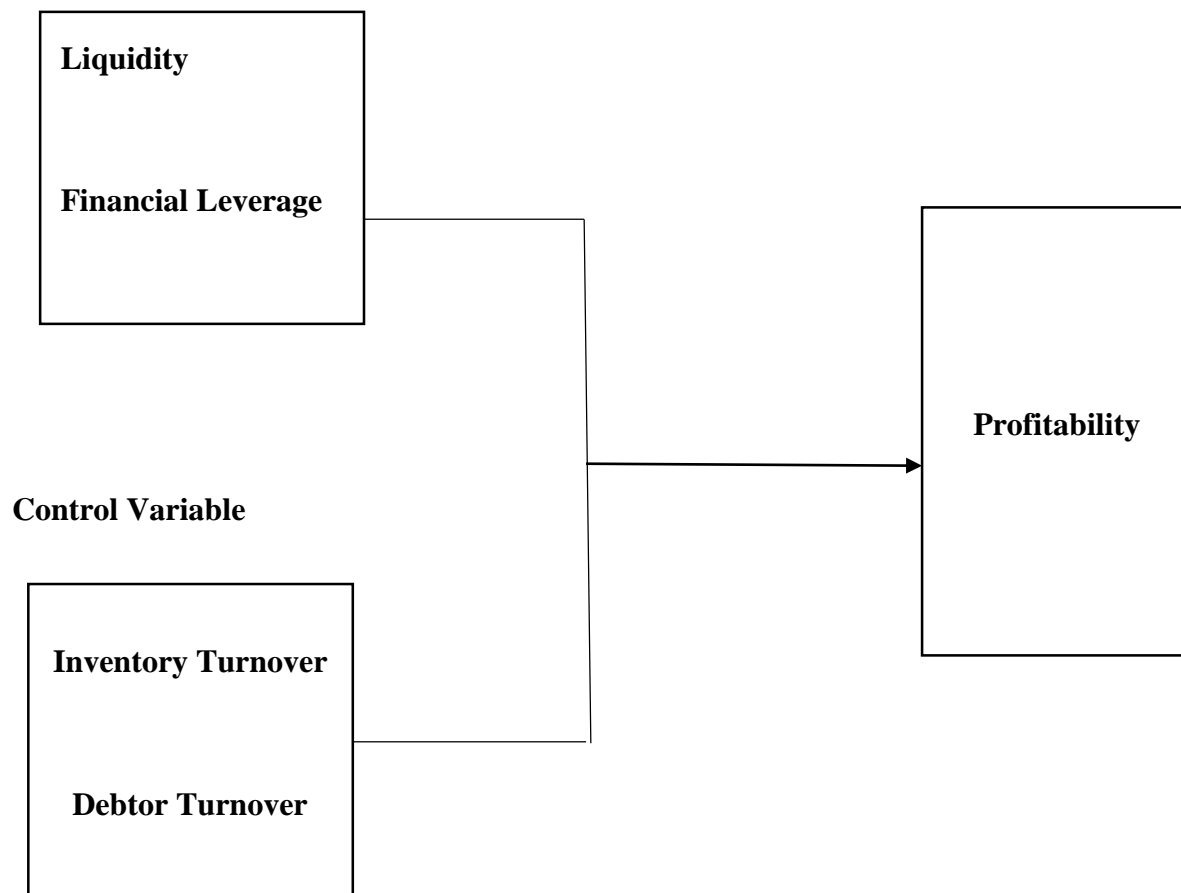
influence on profitability. Furthermore, positive but statistically insignificant association amid ARM and profitability was also established. In addition, a significant and positive link amid APM and profitability. Riri's study examined only hotels in County Government of Nyeri whereas the current assessment targets manufacturing entities registered in NSE which differs in contextual setting.

## **2.5 Conceptual Framework**

A structured representation model portrays a visual representation, in the form of a concrete schematic flowchart, that illustrates the interrelationship between the regressor and the regressed variable in a concise manner. In the context of this study, the regressed variable is the performance financially, while the explanatory variables include important metrics such as liquidity, financial leverage, turnover of debtors, and inventory turnover. These variables play a critical mandate in determining the effectiveness and success of an organization, as they contribute to overall prosperity. The comprehensive presentation of the conceptual framework can be observed in Figure 2.1 below, offering a snapshot of the interrelationships and connections between these variables.

## Independent Variable

## Dependent Variables



**Figure 2.1: Conceptual Framework**

**Source: Author 2023**

## 2.6 Summary of Literature Review, Critiques and Research Gaps

Several assessments have been expedited to examine the relationship between WCM, borrowing, and profitability in divergent nations and industries. Kartikasary et al. (2021) focused on the Indonesian consumer goods industry and found a substantial association in the midst of financial asset ratio, WCM practices, and profitability. Abdulnafea et al. (2022) investigated Jordanian banks and discovered a material interrelation in the midst of WCM, loan management policies, and performance financially. Setianto et al. (2022) analyzed data from five Asian countries and observed that developed countries had more flexibility in obtaining short-term loans without compromising their profitability. Herison et al. (2022) examined the Indonesian Stock Exchange and identified positive impacts of WC turnover and ART on profitability, but a partially negative influence of working capital turnover in retail trading entities. Madugba and Ogbinnaya (2016)

studied Nigerian companies and highlighted the importance of average payment period on profitability.

Amponsah-Kwatiah and Asiamah (2021) investigated Ghanaian manufacturing companies and found positive influences of various working capital management practices on profitability. Addisu et al. (2023) focused on private banks located in Ethiopia and identified the size of banks and loan and total assets as significant factors affecting performance financially. Kimondo (2014) examined liquidity and profitability in non-financial institutions listed on the NSE in Kenya and found a positive correlation between liquidity and ROA. Mulumba (2016) studied Agro-chemical companies in Kenya and revealed the positive impact of stock management activities on performance financially. Onchangwa (2019) explored WCM and financial distress in non-financial entities listed on the NSE, finding associations between financial distress and certain working capital attributes.

These studies show inconsistency in terms of methodologies, contextual settings, and the specific variables examined. There are conceptual gaps in understanding the interrelationship in the midst of WCM, borrowing, and profitability in manufacturing entities quoted on the NSE. The existing studies predominantly focus on performance financially and financial distress, with limited attention to profitability as the main outcome variable. Additionally, the studies conducted in different countries provide insights that may not be directly applicable to the Kenyan context due to variations in economic conditions, industry dynamics, and institutional factors. Thus, there is a need for a local study in Kenya to fill these conceptual, contextual, and methodological gaps.

Studying the interrelationship between borrowing, WCM, and profitability is of utmost importance. In addition, manufacturing entities are critical to expound the interconnections. The findings would contribute to the understanding of how these financial factors interact and impact the performance of Kenyan manufacturing entities. The knowledge acquired from this research would close the conceptual and contextual disparities, thereby assisting policymakers, investors, and managers in making well-informed choices concerning funding approaches, practices in WCM, and the overall performance of entities. Moreover, any gaps in methodology were addressed and rectified. Ultimately, this study made a valuable contribution to the advancement of efficient financial governance strategies that can enhance the profitability and long-term viability of manufacturing entities in Kenya's capital market.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter is consequential for inspection of the research design that is befitting this interrogation. It bestows extensive particulars regarding the adequate population required for this endeavor. Furthermore, it elucidates the data gathering methodologies that conform with the exploration's objective. Additionally, it accentuates the data analysis approach and diagnostic inspection to be expedited, guaranteeing that the diverse dataset undergoes thorough scrutiny. Lastly, it introduces the multivariate regression model to expound on the correlation and significance tests, evaluating whether the data satisfies the minimum threshold.

### **3.2 Research Design**

The chosen research design is critical component that steers the overall trajectory of the research endeavor. It must be in harmony with the gathered data and be well-suited to the selected subject matter. Numerous factors come into play when determining a suitable and comprehensive research design. In addition to the target population, the data assemblage approach and the intended empirical analysis shape the design. The examination of data assumes a central role in determining the most appropriate design. In this instance, examiner opts for a descriptive research design, aiming to explore and elucidate the relationships between variables. This design facilitates the provision of additional knowledge, a deeper comprehension, and the quantification of data. Saunders, Lewis & Thornhill (2012) pinpointed that the research design set out the framework for conducting the study with minimal complications and interruptions.

### **3.3 Population**

Empirically, research procedure hinges upon the exploration of the distinct population under scrutiny and the pertinent information available to shape the research design. Consequently, the collection and analysis of data presumes cardinal primacies in deriving meaningful and substantial conclusions. As highlighted by Mugenda and Mugenda (2013), the population denotes a defined set encompassing elements, objects, or individuals sharing common characteristics. It encircles the measurable entities that are the subject of investigation. In the present study, the target population comprises ten manufacturing entities that are enlisted on the NSE as of December 31, 2022. A

census study approach is adopted, signifying that all manufacturing entities listed on the NSE were included in the research.

### **3.4 Data Collection**

Problem-solving and statistical computations undoubtedly constitute indispensable components of research methodology (Kothari & Garg, 2014). Data collection, as expounded by Creswell & MacKinlay (2012), entails the deliberate acquisition, arrangement, classification, and examination of data. Its purpose is to quantify information, facilitating subsequent calculation and analysis. In this particular study, data spanning the timeframe of 2013 to 2022 was employed to ensure a comprehensive exploration and yield enduring outcomes. The data collection process encompasses a substantial duration and encompasses a broad range of factors to yield realistic, coherent, and insightful results. Specifically, the focal point of data collection revolves around variables such as profitability, liquidity, leverage, inventory turnover, and debtors' turnover.

### **3.5 Data Analysis**

Data analysis constitutes a critical stage in the research endeavor, aimed at deriving precise and significant conclusions. The gathered data underwent a meticulous process of examination, revision, categorization, and scrutiny. In this particular study, the data was analyzed utilizing the SPSS software, which enables statistical analysis and interpretation. Multiple regression analysis assumed particular significance in exploring the interrelationships among variables. The outcomes of the analysis were disclosed and deliberated upon, offering valuable insights and interpretations of the findings. To foster a comprehensive comprehension of the dataset, inferential and descriptive computation was employed, accompanied by utilization of charts, graphs, and tables to visually present the results and facilitate understanding.

#### **3.5.1 Diagnostic Tests**

The dataset underwent diagnostic tests to ensure the reliability of the analysis, including assessments for normality, autocorrelation, and multicollinearity. It is assumed that the data adhered to a normal distribution, and therefore, the Kolmogorov-Smirnov in addition to Shapiro-Wilk tests were employed to validate this assumption (Tan & Zhao, 2022). In the event that the

data deviates from normality, further analysis were conducted, and measures were taken to address any skewness and ensure data completeness.

To detect multicollinearity, the Variance Inflation Factor (VIF) was utilized, aiming to eliminate ambiguous regression outcomes. VIF superseding 10 stipulates the presence of multicollinearity (Verma, 2022). Multicollinearity not only distorts standard errors but also leads to heightened sensitivity to small changes, potentially yielding unreliable outputs, incorrect inferences, and misleading interpretations. To mitigate the adverse effects of multicollinearity, highly correlated variables were eliminated from the analysis.

Autocorrelation testing was administered to assess interrelationship in the midst of explanatory and explained variables, providing insights into direction and magnitude. The Durbin-Watson statistic was employed for autocorrelation analysis. The statistic spanned from 0 to 4, having a figure of 2 pinpointing no correlation in the residuals. Values higher than 2 pinpoints inverse correlation, while values less than 2 indicate positive correlation (Woolridge, 2002). Failure to satisfy the minimum threshold for autocorrelation warrants further tests such as the Breusch-Godfrey test. Neglecting to account for autocorrelation can introduce biases in standard errors and undermine the effectiveness of metrics (Singh & Singh, 2022).

### **3.5.2 Analytical Model**

The empirical model played a crucial role in conducting the multivariate regression analysis. It forms the foundation for understanding the mathematical and logical relationships between the regressors and the regressed variable in this scrutiny. Through the quantification and calculation of the dataset, valuable disclosure is generated, which is imperative for sophistication and demystification in the decision-making. In a nutshell, the empirical model condenses a large amount of data into concise and unequivocal details for effective exposition. According to Rensik (2023), the empirical model embraces magnificent signification in the context of linear regression, as it permits all-encompassing discernment of the interrelationships between variables as stipulated below;

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$



Whereby:

Y= Profitability (ROA)

$\alpha_0$ =y intercept of the regression (constant variable)

$X_1$ =Liquidity (CA/CL)

$X_2$ =Financial Leverage (Total Debts/Total Liability)

$X_3$ =Inventory Turnover (Cost of goods sold/Average

Inventories)

$X_4$ = Debtors Turnover (Credit sales/Average Accounts receivables \* Days in period))

$\varepsilon$ = error term

### **3.5.3 Significance Tests**

Scrutiny engrossed in painstaking statistical significance experimentation, optimizing a wide-array of robust proficiencies such as the F-Test, ANOVA, and T-Test to sanction a conclusive and unflinching evidence. These statistical computations were sufficed as powerful tools to check out the significance of association and differences in the midst of variables, granting a systematic and thoroughgoing strategy to data analysis. With the application of a 95% confidence level, the research schemes to settle a high level of certainty in the results. The logical interpretation and comprehensive presentation of the findings, derived from intensive investigation, effectively addressed the prevailing detrimental and instrumental to a well-founded and conclusive outcome.

## **CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS**

### **4.1 Introduction**

The chapter covers a thorough processing of data and interpretation of the key outcomes. The results of the data analysis are outlined in the form of graphs and tables. The chapter is essential in the presentation of a test of the relationships between the independent variables including liquidity, financial leverage, inventory and debtors' turnover on the dependent variable that was the profitability of the listed manufacturing firms. The researcher targeted all the 10 manufacturing firms thereby targeting 100 data points from 2013-2022 but managed to get 80 data points since two firms were delisted during the period.

### **4.2 Descriptive Statistics**

The descriptive statistics of the study entailed the means, standard deviations, minimum and the corresponding maximum values of the variables under study. The descriptive results of the study are outlined in Table 4.1.

**Table 4.1: Descriptive Statistics**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Profitability	80	0.0974	0.11748	0.00884	0.45044
Liquidity	80	1.45772	0.42043	1.123	2.264
Financial Leverage	80	0.85276	0.89766	-3.2953	3.70633
Inventory Turnover	80	7.32167	1.3541	3.55	9.72
Debtor Turnover	80	15.5267	2.16794	12	19

As seen from the descriptive outcomes, profitability in the review garnered the lowest values 0.00884 while the highest posted was 0.45044 being the outlier representing BAT. Its average value was 0.0974 and its SD was 0.11748. This meant that the profitability changed over the review period. In addition, the outcomes of financial leverage under review indicated that its average value was 0.85279 and its SD was 0.89766. This entailed that there were changes in the financial leverage varied under review over period. The maximum and minimum liquidity values for the societies were -3.2953 and 3.70633. The liquidity on the other hand received a maximum and minimum value of 2.264 and 1.123. The average figure for the variable was 1.45772 and its SD

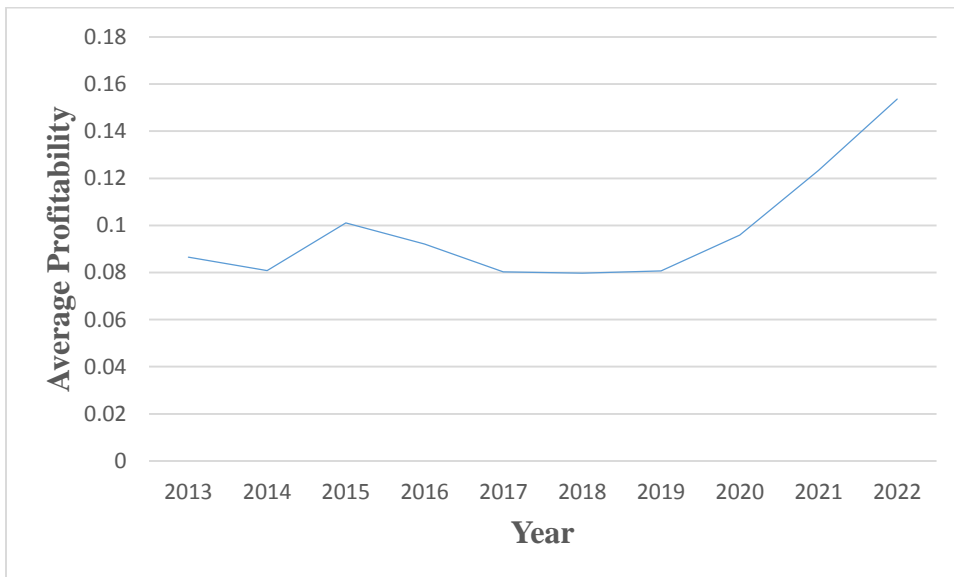
was 0.42043. On the other hand, the inventory turnover had a maximum and minimum values being 9.72 and 3.55. Its average value was 7.32167 while the SD was 1.3541. The debtor turnover received an average value of 15.5267 and an SD of 2.16794. Its lowest and highest values were 12 and 19.

### 4.3 Trend Analysis

The analysis of trend is critical for contrasting and comparing behaviour and the pattern. It outlines the behaviour of variables in particular years of analysis. From this analysis, the period was abundant for sound decisions.

#### 4.3.1 Trend Curve for Average Profitability

The trend line for profitability of the listed manufacturing firms is outlined in Figure 4.1

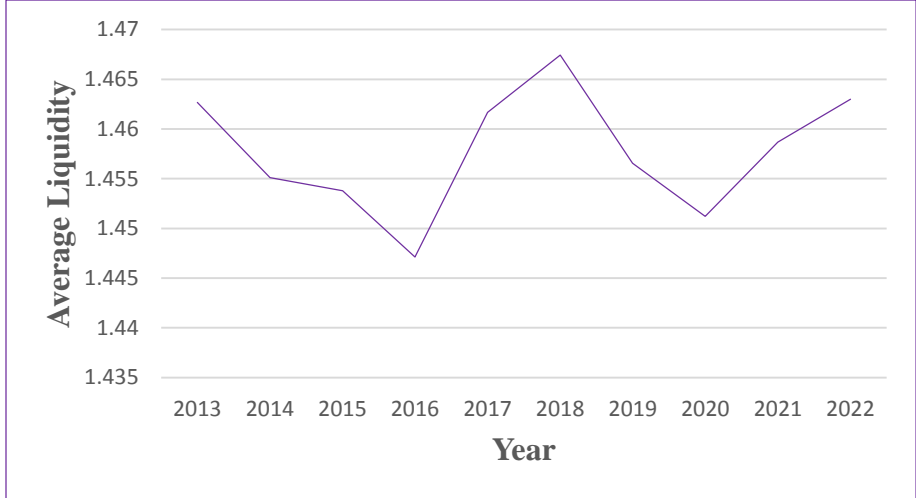


**Figure 4.1: Trend Line for Profitability**

As noted, the average profitability for the manufacturing listed firms varied throughout the study period. Between 2013 and 2019, there were no significant changes in the profitability of the listed manufacturing firms. However, between 2019 and 2022, the average profitability of the manufacturing listed firms saw a significant improvement.

#### 4.3.2 Trend Curve for Average Liquidity

The trend line for liquidity of the manufacturing entities listed is outlined in Figure 4.2

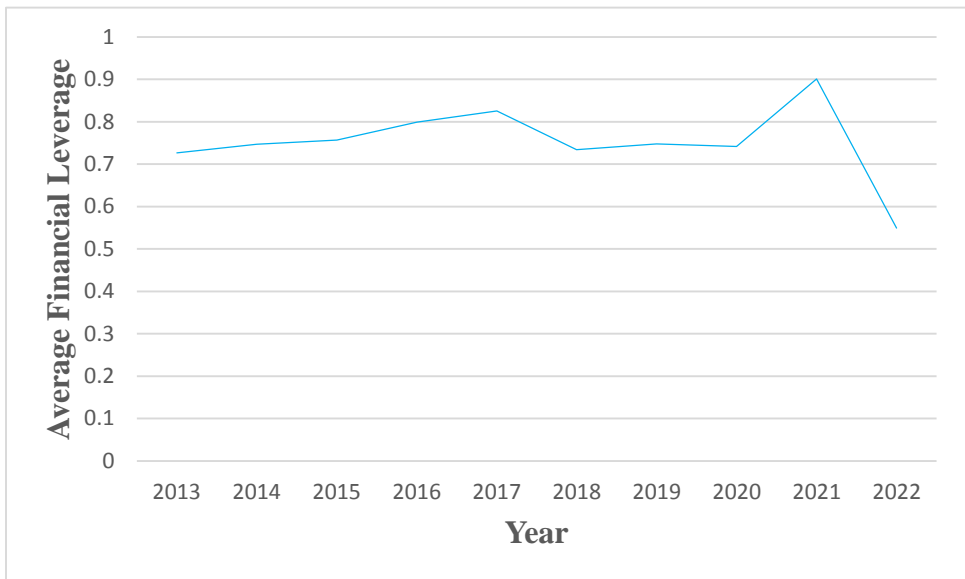


**Figure 4.2: Trend Line for Liquidity**

As seen, the average liquidity for the manufacturing listed entities varied throughout the study period. Between 2013 and 2016, the average manufacturing listed entities' liquidity saw a decline and improved between 2016 and 2018. However, between 2018 and 2020, the average liquidity of the manufacturing entities listed declined and increased between the year 2020 and 2022.

### 4.3.3 Trend Curve for Average Financial Leverage

The trend line for financial leverage of the listed manufacturing firms is outlined in Figure 4.3

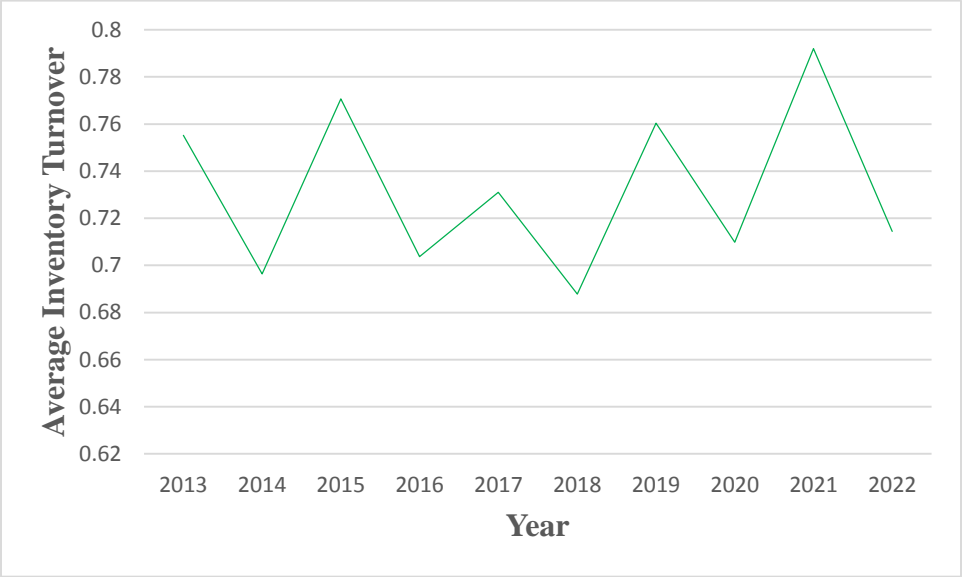


**Figure 4.3: Trend Curve for Financial Leverage**

As observed, the average financial leverage for the manufacturing listed firms varied throughout the study period. Between 2013 and 2021, there was no significant changes in the average financial leverage for the manufacturing listed firms. However, between 2021 and 2022, the average financial leverage for the manufacturing listed entities recorded a significant decline.

### 4.3.4 Trend Curve for Average Inventory Turnover

The trend line for inventory turnover of the listed manufacturing firms is outlined in Figure 4.4

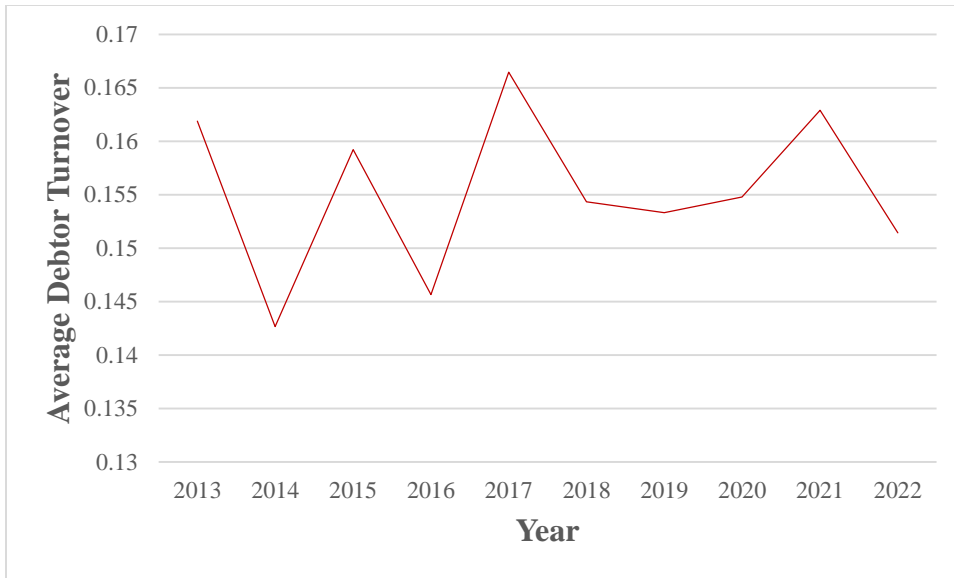


**Figure 4.4: Trend Curve for Inventory Turnover**

As noted, the average inventory turnover for the manufacturing listed firms varied throughout the study period. Between 2013 and 2014, the average inventory turnover for the manufacturing listed entities declined, improved between 2014 and 2015, declined between 2015 and 2016, improved between 2016 and 2017 and further declined between 2017 and 2018. The trend improved between 2018 and 2019, declined between 2019 and 2020, improved between 2020 and 2021 and declined between 2021 and 2022.

### 4.3.5 Trend Curve for Average Debtor Turnover

The trend line for debtor turnover of the listed manufacturing firms is outlined in Figure 4.5



**Figure 4.5: Trend Curve for Debtor Turnover**

The outcomes point out that the average debtor turnover for the manufacturing listed firms varied throughout the study period. Between 2013 and 2014, the average debtor turnover for the manufacturing listed entities declined, improved between 2014 and 2015, declined between 2015 and 2016, improved between 2016 and 2017 and further declined between 2017 and 2018. The trend improved between 2018 and 2021, declined between 2021 and 2022.

#### **4.4 Correlation Analysis**

In an establishing the direction and magnitude of the association between the factors under review, an analysis of correlation was conducted. The factors liquidity, financial leverage, inventory and debtors turnover dependent on profitability of the manufacturing entities listed. Values of correlation lie between -1 and +1 pointing out to perfect negative and perfect positive correlations respectively and a figure of 0.000 imply no association. Strong correlation is provided for by figures over 0.5 whereas weak association is implied by figures less than 0.5.

**Table 4.2: Correlation Statistics**

	<b>Profitability</b>	<b>Liquidity</b>	<b>Financial Leverage</b>	<b>Inventory Turnover</b>	<b>Debtor Turnover</b>
Profitability	1.000				
Liquidity	0.5148 0.000	1.000			
Financial Leverage	-0.5612 0.029	0.3191 0.0022	1.000		
Inventory Turnover	0.5528 0.015	0.1109 0.008	0.209 0.0481	1.000	
Debtor Turnover	-0.577 0.002	-0.091 0.038	0.1732 0.026	-0.0922 0.004	1.000

The outcomes recorded point out that the correlation between liquidity and profitability of manufacturing listed entities was both significant and positive ( $\beta = 0.5148$ ,  $p= 0.000<0.05$ ). Financial leverage and profitability significantly and negatively correlated ( $\beta = -0.5612$ ,  $p= 0.029<0.05$ ). Furthermore, the inventory turnover recorded a positive as well as significant correlation with profitability ( $\beta = 0.5528$ ,  $p= 0.015<0.05$ ). The debtor turnover was negatively and significantly associated with profitability ( $\beta = -0.577$ ,  $p= 0.002<0.05$ ).

#### **4.5 Diagnostic Tests**

The tests were carried out to determine the appropriateness of the data in the study for regression analysis and model estimation. The tests conducted included the tests for multicollinearity, normality, heteroscedasticity, autocorrelation as well the as the hausman specification tests.

##### **4.5.1 Test for Multicollinearity**

The test was conducted to establish if the factors identified in the study are correlated highly. In case of the existence of highly correlated variables, one of the variables out to be excluded from the study because both the variables are giving a similar explanation. In carrying out the test, the study adopted a Variance Inflation Factor Method. As a rule of thumb, VIF value  $> 10$  implies that there is multicollinearity in the data set. However, VIF value  $< 10$  implies that the research factors are not correlated highly and hence the data is fit for further estimations.

**Table 4.2: Test Results for Multicollinearity**

<b>Variable</b>	<b>VIF</b>	<b>1/VIF</b>
Financial Leverage	1.22	0.81999
Liquidity	1.14	0.87545
Debtor Turnover	1.07	0.93081
Inventory Turnover	1.07	0.93862
<b>Mean VIF</b>	<b>1.13</b>	

From the results, it is clear that the VIF values for all the independent variables were  $< 10$  ( $1.22 < 10$ ,  $1.14 < 10$ ,  $1.07 < 10$ ,  $1.07 < 10$ ). This therefore meant the absence of multicollinearity in the data set, that is, the variables in the study were not highly correlated. Thus, the data is fit for further analysis.

#### 4.5.2 Normality Tests

These tests entail the process of ascertaining whether the data follows a normal distribution. The process involves testing the null hypothesis and concluding from the outcomes on the kind distribution the data follows. The null hypothesis is that the data do not follow normal distribution. If the significance value estimated is greater than 0.05, the study rejects the null hypothesis and fails to reject the alternative hypothesis.

**Table 4.3: Normality test results.**

	<b>Obs</b>	<b>Pr(Skewness)</b>	<b>Pr(Kurtosis) adj</b>	<b>chi2(2)</b>	<b>Prob&gt;chi2</b>
Profitability	80	0.039	0.368	1.350	0.749
Financial Leverage	80	0.404	0.306	0.351	0.369
Liquidity	80	0.140	0.250	6.660	0.115
Debtor Turnover	80	0.242	0.171	9.920	0.093
Inventory Turnover	80	0.132	0.135	1.125	0.672

From the results, it can be noted that the estimated significance values of the variables in the study were  $> 0.05$  ( $0.749 > 0.05$ ,  $0.369 > 0.05$ ,  $0.115 > 0.05$ ,  $0.093 > 0.05$  and  $0.672 > 0.05$ ). This gives an implication that the dataset used follows a normal distribution and thus good for further estimations.

#### 4.5.3 Test for Autocorrelation

An analysis to establish the error term correlation across time periods is necessary. This is especially common in the analysis of panel data which covers a specified periods of time. In



carrying out these test, the null hypothesis, no first order autocorrelation was conducted. The outcomes are outlined herein.

**Table 4.4: Autocorrelation test results**

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**Wooldridge test for autocorrelation in panel data**

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$F(4,61) = 0.702$

Prob > F = 0.1105

---

The null hypothesis is rejected if the test results are insignificant at 95% level of significance. Thus, from the outcomes recorded, the significance value was 0.1105 whereas the F statistic was 0.702. This hence gives the implication that the assessment failed to reject the alternative hypothesis and made the conclusion that there was no autocorrelation among the error terms over the period under review.

#### **4.5.4 Test for Heteroscedasticity**

In establishing the association between the errors of regression with the dependent factor, heteroscedasticity tests are carried out. Breusch-Pagan / Cook-Weisberg test was explored in the investigation. As a decision rule, if the values of  $\chi^2$  are large, the conclusion to be made is the presence of heteroscedasticity in the data.

**Table 4.5: Heteroscedasticity Test Results**

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**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity**

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Ho: Constant variance

Variables: fitted values of Dividend Payout

$\chi^2(1) = 0.22$

Prob >  $\chi^2 = 0.5417$

---

The  $\chi^2$  recorded was 0.22. This figure is relatively small and implying that the regression errors do not related with the independent factor. Thus, the data is fit for other analysis.

#### **4.5.5 Hausman Specification Test**

The test was conducted to ascertain the type of model that is suitable for the investigation. The model could be RE model or FE model. As a decision rule, if the p value from the hausman test

results  $> 0.05$ , then the assessment concludes that the FE model is good. However, if the estimated p value is  $< 0.05$ , the investigation makes the decision that the RE model is appropriate.

**Table 4.6: Hausman Test Results**

	<b>(b) fe</b>	<b>(B) re</b>	<b>(b-B) Difference</b>	<b>sqrt(diag(V_b-V_B)) S.E.</b>
Liquidity	0.17964	0.17775	0.00188	0.00674
Financial Leverage	-0.057	-0.0545	-0.0025	0.00525
Inventory Turnover	0.11096	0.09984	0.01111	0.02289
Debtor Turnover	0.60334	0.48071	0.12263	0.2248
chi2(4)	0.38			
Prob>chi2	0.9843			

As noted, the estimated P value from the hausman test results is  $> 0.05$  ( $0.9843 > 0.05$ ). Thus, the assessment decides that the FE model is the appropriate model. Thus, the assessment proceeds to run a panel regression model.

#### 4.6 Regression Analysis

This entails the process of establish the existence of linear relationships between the research factors. The dependent variable of the study was profitability. The independent variables were liquidity, financial leverage, inventory and debtors' turnover.

**Table 4.7: Model Summary**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.557a	0.311	0.287	0.09922

As shown liquidity, financial leverage, inventory and debtors turnover explains to a tune of 31.1% of the total changes in the profitability of the manufacturing listed firms in Kenya. This decision is supported by the value of R Squared (0.311) in the model. Thus, the identified variables are significant determinants of profitability of the manufacturing listed firms.

**Table 4.8: ANOVA Results**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	0.382	3	0.127	12.924	.000b
Residual	0.847	76	0.01		
Total	1.228	79			

As can be observed, the outcomes of ANOVA analysis pointed out that the model estimated was significant statistically at 95% confidence interval. The outcomes are provided for by the F value estimated (12.924) which is greater than F critical value in the critical F tables and value of P in of  $0.000 < 0.05$ .

**Table 4.9: Regression Coefficients**

<b>Profitability</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>t</b>	<b>P&gt;t</b>	<b>[95% Conf. Interval]</b>
Liquidity	0.17473	0.02503	6.98	0.000	0.12497 0.22449
Financial Leverage	-0.0542	0.01211	-4.48	0.000	-0.0783 -0.0301
Inventory Turnover	0.01349	0.07664	1.76	0.008	-0.0017 0.02873
Debtor Turnover	0.05228	0.04741	1.1	0.027	-0.0042 0.01465
_cons	-0.291	0.10565	-2.75	0.007	-0.5011 -0.081

The regression coefficient results point out that the coefficient of liquidity was both statistically significant as well as positive ( $\beta = 0.17473$ ,  $p = 0.000 < 0.05$ ). This means a unit increase in the liquidity of the manufacturing listed entities results in 0.17473 units significant improvement in the profitability of manufacturing listed entities. Thus, liquidity is a significant determinant of profitability of the manufacturing listed entities in Kenya. Liquidity is the way in which firm can sell security or assets without leading to significant price movement. Furthermore, liquidity is degree at which how fast can organization changes assets into cash without incurring a loss of transaction. This is a crucial working capital management tool. The findings are in agreement with the outcomes of Buana, Husna and Suryani (2023) who pinpointed that liquidity has positive influence on the profitability in the sampled entities. Furthermore, Al-Matari (2023) uncovered that liquidity has a positive moderate ramification on the profitability of the banks and performance of the banks. However, Hidayata and Dewi (2022) established that liquidity does not exert any impact on the profitability of coal mining companies.

The regression coefficient results point out that the coefficient of financial leverage was both statistically significant as well as negative ( $\beta = -0.0542$ ,  $p = 0.000 < 0.05$ ). This gave the argument that a unit increase in the financial leverage of the manufacturing listed entities results in 0.17775 units significant decline in the profitability of manufacturing listed entities. Thus, financial leverage is a significant determinant of profitability of the manufacturing listed entities in Kenya. Financial leverage means the utilization of borrowed money to fund business projects or operations. This involves maximization of debt, capital together with equity capital to enhance the potential earning of firm. The findings are not in agreement with the outcomes of Hidayat & Dewi (2022) who unearthed that financial leverage has substantive consequences on profitability on coal mining companies. Hakim et al. (2023) pinpointed that financial leverage moved in similar direction with profitability. Kalash (2023) revealed that currency problems exacerbate a substantive negative connection amid leverage and performance.

The regression coefficient results point out that the coefficient of inventory turnover was both statistically significant as well as negative ( $\beta = 0.01349$ ,  $p = 0.008 < 0.05$ ). This implied that a unit increase in the inventory turnover of the manufacturing listed entities results in 0.01349 units significant decline in the profitability of manufacturing listed entities. Thus, inventory turnover is a significant determinant of profitability of the manufacturing listed entities in Kenya. Inventory turnover stands as a pivotal financial parameter employed to evaluate the efficacy of a firm's inventory management strategies. This metric assumes the role of a numerical gauge that quantifies the company's agility in selling its inventory and subsequently replenishing it with fresh stock, all within a designated time span. Inventory turnover ratio is used to evaluate the efficiency of enterprise's inventory governance. This shows how fast an institution is able to sell its stocks and replace them with new inventory. The findings are in agreement with the outcomes of Herison et al. (2022) who established that inventory turnover ratio, influence the profitability of Indonesian entities. Amponsah-Kwatiah & Asiamah (2021) showed that inventory governance has positive influence on ROA as well as in ROE.

The regression coefficient results point out that the coefficient of debtor turnover was both statistically significant as well as negative ( $\beta = 0.05228$ ,  $p = 0.027 < 0.05$ ). This gave the meaning that a unit increase in the debtor turnover of the manufacturing listed entities results in 0.05228 units significant decline in the profitability of manufacturing listed entities. Thus, debtor turnover

is a significant determinant of profitability of the manufacturing listed entities in Kenya. Debtors' turnover refers to monetary ratio that evaluates the efficiency of a firm when it comes to collection of payment from its clients from credit sales made at a particular day. The findings are in agreement with the outcomes of Herison, Sahabuddin, Azis & Azis who showed that debtors 'turnover has significant and positive impacts on profitability. Ngungi, Koori and Wamugo (2019) showed that debtors collection period moves in dissimilar direction ROA. In addition, Amponsah-Kwatiah & Asiamah (2021) found out that accounts receivable turnover positive repercussions on the profitability.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

The sections present an outline of the summary of the key findings of the study upon which conclusions are drawn. The study then presents the policy recommendations, the limitations of the study as well as suggested areas for further research.

### **5.2 Summary of Findings**

The study presents the summary of findings in accordance to the aims of the study. The objectives of the study were to determine the effects of liquidity, financial leverage, inventory and debtors' turnover on the profitability of the manufacturing listed entities in Kenya. The summary of the key findings of the study is outlined in in the subsequent sections.

#### **5.2.1 Liquidity**

The liquidity on the other hand received a maximum and minimum value of 2.264 and 1.123. The average figure for the variable was 1.45772 and its SD was 0.42043. The regression coefficient results point out that the coefficient of liquidity was both statistically significant as well as positive ( $\beta = 0.17473$ ,  $p = 0.000 < 0.05$ ). This implies that a unit increase in the liquidity of the manufacturing listed entities results in 0.17473 units significant improvement in the profitability of manufacturing listed entities. Thus, liquidity is a significant determinant of profitability of the manufacturing listed entities in Kenya. Liquidity is the way in which firm can sell security or assets without leading to significant price movement. Furthermore, liquidity is degree at which how fast can organization changes assets into cash without incurring a loss of transaction. Buana, Husna and Suryani (2023) pinpointed that liquidity has positive influence on the profitability in the sampled entities.

#### **5.2.2 Financial Leverage**

The outcomes of financial leverage under review indicated that its average value was 0.85279 and its SD was 0.89766. This entailed that there were changes in the financial leverage varied under review over period. The maximum and minimum liquidity values for the societies were -3.2953 and 3.70633. The regression coefficient results point out that the coefficient of financial leverage

was both statistically significant as well as negative ( $\beta = -0.0542$ ,  $p = 0.000 < 0.05$ ). This implies that a unit increase in the financial leverage of the manufacturing listed entities results in 0.0542 units significant decline in the profitability of manufacturing listed entities. Thus, financial leverage is a significant determinant of profitability of the manufacturing listed entities in Kenya. Financial leverage means the utilization of borrowed money to fund business projects or operations. This involves maximization of debt, capital together with equity capital to enhance the potential earning of firm. Hidayat and Dewi (2022) unearthed that financial leverage has substantive consequences on profitability on coal mining companies.

### **5.2.3 Inventory Turnover**

The inventory turnover had a maximum and minimum values being 9.72 and 3.55. Its average value was 7.32167 while the SD was 1.3541. The regression coefficient results point out that the coefficient of inventory turnover was both statistically significant as well as negative ( $\beta = 0.01349$ ,  $p = 0.008 < 0.05$ ). This implies that a unit increase in the inventory turnover of the manufacturing listed entities results in 0.01349 units significant decline in the profitability of manufacturing listed entities. Thus, inventory turnover is a significant determinant of profitability of the manufacturing listed entities in Kenya. Inventory turnover stands as a pivotal financial parameter employed to evaluate the efficacy of a firm's inventory management strategies. This metric assumes the role of a numerical gauge that quantifies the company's agility in selling its inventory and subsequently replenishing it with fresh stock, all within a designated time span. Inventory turnover ratio is used to evaluate the efficiency of enterprise's inventory governance. This shows how fast an institution is able to sell its stocks and replace them with new inventory. Herison et al. (2022) established that inventory turnover ratio, influence the profitability of Indonesian entities.

### **5.2.4 Debtor Turnover**

The debtor turnover received an average value of 15.5267 and an SD of 2.16794. Its lowest and highest values were 12 and 19. The regression coefficient results point out that the coefficient of debtor turnover was both statistically significant as well as negative ( $\beta = 0.05228$ ,  $p = 0.027 < 0.05$ ). This implies that a unit increase in the debtor turnover of the manufacturing listed entities results in 0.05228 units significant decline in the profitability of manufacturing listed entities. Thus, debtor turnover is a significant determinant of profitability of the manufacturing listed entities in

Kenya. Debtors' turnover refers to monetary ratio that evaluates the efficiency of a firm when it comes to collection of payment from its clients from credit sales made at a particular day. Ngungi et al. (2019) showed that debtors collection period moves in dissimilar direction ROA.

### **5.3 Conclusion**

The study concludes that the liquidity of manufacturing listed entities has a positive and significant relationship with the profitability of manufacturing listed entities. Thus, an improvement in the liquidity of the manufacturing listed entities yields a significant improvement in the profitability of manufacturing listed entities. Liquidity is the way in which firm can sell security or assets without leading to significant price movement. Furthermore, liquidity is degree at which how fast can organization changes assets into cash without incurring a loss of transaction.

The study concludes that the financial leverage of manufacturing listed entities has a negative and significant relationship with the profitability of manufacturing listed entities. Thus, an increase in the financial leverage of the manufacturing listed entities yields a significant decline in the profitability of manufacturing listed entities. Financial leverage means the utilization of borrowed money to fund business projects or operations. This involves maximization of debt, capital together with equity capital to enhance the potential earning of firm.

The study further concludes that the inventory turnover of manufacturing listed entities has a negative and significant relationship with the profitability of manufacturing listed entities. Thus, an increase in the inventory turnover of the manufacturing listed entities yields a significant decline in the profitability of manufacturing listed entities. Inventory turnover stands as a pivotal financial parameter employed to evaluate the efficacy of a firm's inventory management strategies. This metric assumes the role of a numerical gauge that quantifies the company's agility in selling its inventory and subsequently replenishing it with fresh stock, all within a designated time span. Inventory turnover ratio is used to evaluate the efficiency of enterprise's inventory governance. This shows how fast an institution is able to sells its stocks and replace them with new inventory.

### **5.4 Recommendations of the Study**

The study's recommendations for manufacturing listed entities in Kenya offer significant contributions to financial theory, particularly within the contexts of Agency Theory, Resource



Dependency Theory, and Pecking Order Theory. These theories provide valuable insights into the intricate dynamics of corporate finance and governance. Moreover, the study carries policy implications of great relevance for both regulatory bodies and policymakers in Kenya. Let's delve into these contributions in greater depth:

The study makes a substantial contribution to Agency Theory by underscoring the pivotal role of liquidity in the operations of manufacturing listed entities. The emphasis on maintaining a substantial proportion of liquid assets aligns harmoniously with the concept of the agency problem, a conundrum revolving around the conflicting interests of shareholders (the principals) and management (the agents). The presence of liquid assets acts as a bulwark against opportunistic conduct by the management. This recommendation deepens our comprehension of how liquidity can alleviate agency problems by eroding the management's incentive to engage in actions that promote their personal gain at the expense of shareholders.

In the context of Resource Dependency Theory, the study discerns the dual role of debt in financing the operations of manufacturing entities. While debt represents a crucial resource for fueling growth and development, the study underscores the imperative of constraining debt levels. This perspective enriches our understanding of how manufacturing companies rely on external resources, like debt, while concurrently recognizing the associated perils of an excessive dependence on such resources. By highlighting the significance of achieving equilibrium between external financing and internal resources, the study offers precious insights into the adept management of resource dependencies.

Furthermore, the study aligns with the Pecking Order Theory through its recommendation to enhance inventory turnover ratios. This theory postulates that firms exhibit a proclivity for internal financing, such as retained earnings, over external financing, encompassing debt and equity. The emphasis on ameliorating inventory turnover underscores the importance of funds generated internally for fulfilling working capital needs. This augments our comprehension of how organizations prioritize their sources of financing and underscores the role of internal funds in the efficient management of inventories.

The policy implications of the study are of paramount importance, benefiting both manufacturing entities themselves and the regulatory bodies in Kenya. Principally, the manufacturing listed entities within Kenya stand as the primary beneficiaries. The implementation of the

recommendations concerning liquidity management, debt regulation, and inventory turnover stands to significantly elevate their financial performance and bolster their overall stability. This can translate into heightened profitability, mitigated financial risk, and a more streamlined management of working capital.

Shareholders and investors within these manufacturing listed entities also stand to gain from these recommendations. The enhanced financial performance engendered by the suggested measures may result in superior returns on investments and a heightened value of their shareholdings.

In parallel, regulatory authorities in Kenya can harness the insights gleaned from this study to craft policies conducive to promoting sound financial practices within the manufacturing sector. For instance, these authorities may consider the formulation of guidelines pertaining to liquidity ratios, debt-to-equity thresholds, or expectations pertaining to inventory turnover. These measures can play an instrumental role in ensuring the stability and overall health of the manufacturing sector within the nation.

In closing, the study ushers in a rich array of recommendations, poised to enhance our comprehension of financial theories such as Agency Theory, Resource Dependency Theory, and Pecking Order Theory. Additionally, it carries policy implications that stand to significantly benefit not only the manufacturing entities but also the stakeholders and regulatory authorities in Kenya. Ultimately, these recommendations, be they in the form of liquidity management, debt regulation, or the improvement of inventory turnover, can pave the way for a more stable, prosperous, and sustainable manufacturing sector.

### **5.5 Limitations of the Study**

The study was limited to the manufacturing listed entities in Kenya. Further, the study was limited to a period of 2013 to 2022. In addition, the study considered the variables including liquidity, financial leverage, inventory and debtors' turnover that were the determinants of profitability of the manufacturing listed entities. The study was also limited to the descriptive research design that was utilized in the study.

## **5.6 Suggestions for Further Studies**

The study's findings have unveiled numerous promising avenues for further investigation to enhance our comprehension of the correlations between financial variables and profitability in manufacturing listed entities. As a consequence, a logical progression for future research involves a longitudinal scrutiny of liquidity and its ramifications on profitability. This encompasses the monitoring of alterations in liquidity levels over time and an assessment of how these alterations correspond with shifts in profitability within manufacturing listed entities.

Moreover, a sector-specific appraisal can be conducted to investigate whether the association between liquidity and profitability fluctuates across diverse manufacturing sectors. The manufacturing domain encompasses a diverse spectrum of industries, spanning from automotive to pharmaceuticals and textiles, each characterized by its distinct attributes. Bolstering the study's findings concerning financial leverage, a comparative assessment across manufacturing entities featuring diverse degrees of leverage can deliver deeper insights. Additionally, an investigation into the influence of debt structure on financial risk and profitability can represent a valuable avenue for exploration.

To attain a holistic grasp of inventory turnover and its association with profitability, a research endeavor can be undertaken to evaluate how supply chain efficiency impacts inventory turnover and financial performance. Researchers can delve into the techniques and methodologies that manufacturing entities employ to optimize their supply chains and enhance financial outcomes. Furthermore, it is advantageous to investigate and compile best practices in inventory management within the manufacturing sector. Additionally, manufacturing entities that implement Just-in-Time (JIT) inventory systems can serve as the focal point of a concentrated investigation. This research can delve into the repercussions of JIT implementation on inventory turnover and profitability, accounting for the diminished inventory holding costs and enhanced demand forecasting associated with JIT systems.

For a more global perspective, the research can be expanded to encompass a cross-country analysis. Drawing comparisons between the associations among liquidity, financial leverage, inventory turnover, and profitability in manufacturing entities across diverse nations can identify global trends and regional disparities, providing a broader context for comprehending these dynamics.

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## APPENDICES

### Appendix I: Manufacturing Firms Listed at Nairobi Securities Exchange

NUMBER	NAME
1	A.Bauman & Co Ltd
2	B.O.C Kenya Ltd
3	British American Tobacco Kenya Ltd
4	Carbacid Investments Ltd
5	East African Breweries Ltd
6	Eveready East Africa Ltd
7	Kenya Orchards Ltd
8	Flame Tree Group
9	Unga Group Ltd
10	Mumias Sugar

**SOURCE: NSE 2023**

**Appendix II: Data Collection Template**

<b>Name</b>	<b>Profitability</b>	<b>Liquidity</b>	<b>Financial Leverage</b>	<b>Inventory Turnover</b>	<b>Debtors Turnover</b>

## Appendix II: Data Collected

<b>Firm</b>	<b>Year</b>	<b>Profitability</b>	<b>Liquidity</b>	<b>Financial Leverage</b>	<b>Inventory Turnover</b>	<b>Debtor Turnover</b>
B.O.C Kenya Ltd	2013	0.017936	1.205	0.364493	5.89	17
B.O.C Kenya Ltd	2014	0.014188	1.182	0.370937	5.75	12.6
B.O.C Kenya Ltd	2015	0.029492	1.226	0.354033	8.26	16.1
B.O.C Kenya Ltd	2016	0.034702	1.164	0.311257	5.82	12.5
B.O.C Kenya Ltd	2017	0.010394	1.193	0.383172	6.49	17.1
B.O.C Kenya Ltd	2018	0.01509	1.262	0.409511	6.5	12.9
B.O.C Kenya Ltd	2019	0.010753	1.259	0.379809	5.88	12.9
B.O.C Kenya Ltd	2020	0.080497	1.242	0.294807	9.72	14.2
B.O.C Kenya Ltd	2021	0.045848	1.198	0.252119	7.25	18.3
B.O.C Kenya Ltd	2022	0.082363	1.255	0.169457	9.25	13.9
British American Tobacco Kenya Ltd	2013	0.369578	2.247	0.633149	6.68	17.5
British American Tobacco Kenya Ltd	2014	0.34076	2.247	0.50053	9.27	13.1
British American Tobacco Kenya Ltd	2015	0.3411925	2.184	0.745574	9.29	13.1
British American Tobacco Kenya Ltd	2016	0.399111	2.182	0.721395	8.06	12
British American Tobacco Kenya Ltd	2017	0.297698	2.264	0.432478	6.59	13.9
British American Tobacco Kenya Ltd	2018	0.32547	2.229	0.347716	6.21	18.2
British American Tobacco Kenya Ltd	2019	0.337132	2.184	0.653925	6.34	17.1
British American Tobacco Kenya Ltd	2020	0.3408776	2.152	0.697822	8.91	17.9
British American Tobacco Kenya Ltd	2021	0.37450438	2.227	0.481203	8.45	14.1
British American Tobacco Kenya Ltd	2022	0.374069	2.244	0.334575	6.78	14.7
Carbacid Investments Ltd	2013	0.087469	1.257	0.053283	8.18	18.8
Carbacid Investments Ltd	2014	0.071965	1.255	0.037621	6.4	12
Carbacid Investments Ltd	2015	0.153638	1.257	0.099767	8.53	14.2
Carbacid Investments Ltd	2016	0.084708	1.257	0.062685	6.67	16.1
Carbacid Investments Ltd	2017	0.11153	1.262	0.05068	7.6	12.5
Carbacid Investments Ltd	2018	0.091622	1.26	0.037121	4.97	17.8

Carbacid Investments Ltd	2019	0.079324	1.264	0.029353	3.55	17.9
Carbacid Investments Ltd	2020	0.094252	1.251	0.077387	4.88	14.3
Carbacid Investments Ltd	2021	0.204095	1.259	0.071474	5.77	16.3
Carbacid Investments Ltd	2022	0.311042	1.252	0.120759	7.7	16.4
East African Breweries Ltd	2013	0.012701	2.259	1.080205	7.4	14.3
East African Breweries Ltd	2014	0.014364	2.261	1.206777	7.29	16.6
East African Breweries Ltd	2015	0.010324	2.254	1.833096	8.72	16.7
East African Breweries Ltd	2016	0.014882	2.263	1.573736	5.53	16.1
East African Breweries Ltd	2017	0.012898	2.25	1.833784	7.84	18.5
East African Breweries Ltd	2018	0.015311	2.255	1.212812	8.11	15.5
East African Breweries Ltd	2019	0.015939	2.25	1.083559	8.27	12.5
East African Breweries Ltd	2020	0.008839	2.251	0.218538	8.75	12.7
East African Breweries Ltd	2021	0.116031	2.259	2.673119	8.31	14.1
East African Breweries Ltd	2022	0.282925	2.257	3.583961	8.99	14.5
Eveready East Africa Ltd	2013	0.169872	1.252	1.2074	6.69	16.2
Eveready East Africa Ltd	2014	0.171379	1.259	1.266783	8.52	12.5
Eveready East Africa Ltd	2015	0.177423	1.25	0.941347	7.74	17.8
Eveready East Africa Ltd	2016	0.176871	1.265	1.207167	8.64	16.3
Eveready East Africa Ltd	2017	0.164366	1.265	1.390329	8.84	15.2
Eveready East Africa Ltd	2018	0.160829	1.256	1.290755	8.46	14.8
Eveready East Africa Ltd	2019	0.183449	1.257	1.17888	9.26	15.8
Eveready East Africa Ltd	2020	0.157548	1.26	1.706326	6.03	17.7
Eveready East Africa Ltd	2021	0.181532	1.263	1.158095	8.19	18.6
Eveready East Africa Ltd	2022	0.227715	1.262	-2.29527	5.5	13.1
Kenya Orchards Ltd	2013	0.034301	1.262	1.577622	8.38	17.7

Kenya Orchards Ltd	2014	0.033112	1.254	1.674125	5.58	18.8
Kenya Orchards Ltd	2015	0.035813	1.258	1.338883	8.42	18.2
Kenya Orchards Ltd	2016	0.034541	1.25	1.781168	9.01	13.7
Kenya Orchards Ltd	2017	0.034322	1.253	1.537777	7.22	17.8
Kenya Orchards Ltd	2018	0.032529	1.265	1.652657	7.21	12.5
Kenya Orchards Ltd	2019	0.031057	1.257	1.724897	9.04	15.2
Kenya Orchards Ltd	2020	0.028848	1.252	1.81003	6.14	17.6
Kenya Orchards Ltd	2021	0.029069	1.265	1.9802	9.33	16.9
Kenya Orchards Ltd	2022	0.013064	1.259	1.565148	5.71	18.3
Flame Tree Group	2013	0.032931	1.264	0.607226	8.62	17.4
Flame Tree Group	2014	0.028564	1.259	0.615233	5.99	12
Flame Tree Group	2015	0.037491	1.261	0.591006	5.68	18.9
Flame Tree Group	2016	0.02961	1.259	0.611518	7.47	12.8
Flame Tree Group	2017	0.036908	1.265	0.62117	5.57	18.6
Flame Tree Group	2018	0.027716	1.264	0.605209	6.07	17.7
Flame Tree Group	2019	0.020021	1.252	0.623033	8.63	16.9
Flame Tree Group	2020	0.03209	1.264	0.621622	5.54	13
Flame Tree Group	2021	0.02363	1.263	0.636751	9.4	13.4
Flame Tree Group	2022	0.031281	1.251	0.617483	9.06	15.5
Unga Group Ltd	2013	0.028361	1.26	0.713972	8.65	14.1
Unga Group Ltd	2014	0.027713	1.252	0.747607	7.73	15.1
Unga Group Ltd	2015	0.029111	1.25	0.623566	6.06	15
Unga Group Ltd	2016	0.029193	1.253	0.614924	5.71	16.5
Unga Group Ltd	2017	0.026759	1.253	0.849407	8.08	19
Unga Group Ltd	2018	0.028382	1.255	0.767991	7.64	16.9
Unga Group Ltd	2019	0.026516	1.263	0.758108	9.04	12.5
Unga Group Ltd	2020	0.027667	1.258	0.978423	8.27	13.7
Unga Group Ltd	2021	0.029205	1.265	0.5726	6.94	19
Unga Group Ltd	2022	0.030266	1.259	0.535055	5.71	12.7