WORKING CAPITAL MANAGEMENT, FINANCIAL LEVERAGE AND FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN THE EAST AFRICA COMMUNITY

BY

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DECLARATION

Declaration by the Candidate

This research project is my original work and has not been presented for examination in this or any other university.

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DEDICATION

I would like to dedicate this research project to my family. A special feeling of gratitude to my loving parents, Mr. and Mrs. Tanui whose words of encouragement and support has been of great help.

Special thanks to my siblings for their continuous encouragement and motivation to press on.

Thank you and May God bless you.

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ABSTRACT

The manufacturing sector plays a critical role in the economy as it is the major driver of the economy. Therefore, its financial performance is vital. However, there is evidence that the financial performance is wanting. Many firms have been shut down owing to poor working capital management hence the need to conduct this study. Studies show that working capital management affect financial performance and this has been less documented therefore the purpose of this study was to assess working capital management, financial leverage and financial performance of listed manufacturing firms in East Africa community. The study was guided by the following specific objectives: to; determine the effect of cash conversation cycle, inventory holding period, accounts receivable period and accounts payable period on the financial performance of listed manufacturing firms in East Africa community. Also to assess the moderating role of leverage on the relationship between cash conversation cycle, inventory holding period, accounts receivable period, accounts payable period and financial performance of listed manufacturing firms in East Africa community. Keynesian liquidity preference theory and trade off theory guided the study. The study adopted an explanatory and a longitudinal research design. A 16 years' period data was collected from 15 manufacturing firms in Kenya, Uganda and Tanzania and therefore a total of 240 observations of data formed the target data for the study. This includes data from 2007 – 2022. A census was conducted and hence 240 complete cases was selected as the sample size for the study. Data sheets were used to collect data. Panel data from the audited financial statements of the individual listed manufacturing firms was collected. Descriptive statistics such as measures of central tendency and measures of dispersion was used to summarize and profile the pattern in each firm. In addition, panel regression analysis was employed to assess the nature and significance of the relationship between independent variables and dependent variable. Hierarchical regression analysis was used to determine the moderating effect of leverage on the relationship between the independent and the dependent variables in a stepwise approach. The results indicate that cash conversion cycle (β= 0.42; p > 0.05, p = 0.170) and accounts receivable period (β= -0.20; p > 0.05, p = 0.186), have no significant impact on financial performance, while inventory holding period (β= -0.29; p < 0.05, p = 0.004) and accounts payable period (β= 0.29; p < 0.05, p = 0.000) have significant effects. The moderation results show that financial leverage moderates the relationship between Cash Conversion Cycle (β= 0.04; ρ<0.05), Inventory Holding Period (β= 0.03; ρ<0.05), Accounts Receivables Period (β= -0.08; ρ<0.05) and Accounts Payables Period (β= 0.13; ρ<0.05) to financial performance. The study concluded that financial leverage moderates the relationships between working capital and financial performance. Based on the findings, it is recommended that manufacturing firms in East Africa to focus on optimizing inventory management and accounts payables to enhance their financial performance. Additionally, careful consideration of financial leverage can help strengthen the impact of inventory holding period and accounts payable period on financial outcomes.

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ACRONYMS

APP: Accounts Payable Period

ARP: Accounts Receivable Period

CCC: Cash Conversion Cycle

DSE: Dar es Salaam Stock Exchange

EAC: East Africa Countries

EBIT: Earnings before Interest and Tax

GDP: Gross Domestic Product

IHP: Inventory Holding Period

NSE: Nairobi Securities Exchange

ROA: Return on Assets

ROE: Return on Equity

ROI: Return on Investments

ROIC: Return on Capital

WCM: Working Capital Management

OPERATIONAL DEFINITION OF TERMS

Accounts Payable Period: This gauges how long it typically takes a company to settle their accounts payable (Okpe and Duru, 2021).

It is a financial metric that represents the average number of days a company takes to pay its suppliers for the goods and services it has received. It is calculated by dividing the total accounts payable by the average daily cost of goods sold.

Accounts Receivable Period: The average time it takes to collect accounts receivable is expressed in days (Lazaridis and Dimitrios, 2021).

It is a financial metric that represents the average number of days it takes for a company to collect payment from its customers after a sale has been made. It measures the effectiveness and efficiency of a company's credit and collection policies

Cash conversion cycle: The cash conversion period is the amount of time that passes between cash disbursement and cash collection. According to Ross et al. (2018), it is calculated by subtracting the payables conversion period from the estimate of the inventory conversion period and the receivable conversion period.

It is a financial metric that measures the time it takes for a company to convert its investments in inventory and other resources into cash flows from sales. It assesses the efficiency of a company's working capital management, focusing on the time it takes to generate cash inflows from the company's operational activities

Financial Performance: A company's ability to earn money and employ assets from its principal mode of business is measured subjectively by its financial performance. According to Almagtome and Abbas (2020), the word is also used as

a broad indicator of a company's overall financial health during a specified time period. It can be used to compare similar companies within the same industry or to compare other businesses or sectors in terms of aggression.

Refers to the measure of a company's effectiveness and efficiency in managing its financial resources to achieve its business objectives.

Inventory Holding Period: This ratio shows how many days a firm keeps inventory prior to sales (Swaminathan, 2021).

It is a financial metric that measures the average number of days a company takes to sell its entire inventory during a specific period.

Leverage: defined as a ratio technique used to assess the extent to which a company must rely on debt to finance its assets. This investment approach specifically makes use of borrowing and other financial instruments to increase the potential return on the capital invested (Almagtome & Abbas 2020).

Refers to the use of various financial instruments or borrowed capital to increase the potential return of an investment or to amplify the impact of a particular financial decision

Working Capital: The link between a company's current assets and current liabilities is known as working capital (Lazaridis & Tryfonidis, 2016).

Refers to the difference between a company's current assets and current liabilities.

CHAPTER ONE

INTRODUCTION

1.0 Overview

The background, problem statement, objectives, hypotheses, significance, it discusses the study's objectives, and the scope of the study.

1.1 Background of the Study

Since manufacturing is a major engine for many economic sectors, the financial performance of manufacturing companies is extremely important. An economy's productivity growth and national capital investments are impacted by a failing manufacturing sector (Kniivilä, 2021). For this reason, it's critical to guarantee manufacturing companies' steady financial performance. An organization's ability to use its primary mode of business assets and generate revenue can be subjectively determined by looking at its financial performance (FP). The phrase can also be used to compare and contrast similar companies operating within the same sector or to contrast the degree of animosity between different industries. Additionally, it functions as a wide gauge of a business's overall financial well-being over a given time frame (Almagtome & Abbas 2020). FP can be used to compare similar businesses within the same industry, given that it is an arbitrary indicator of a company's overall financial well-being over a given time frame.

Ganag, Kalaiselvan, and Suriya (2021) Liquidity, solvency, profitability, ability to repay debt, and the company's financial efficiency are all indicators of FP. One helpful metric to assess financial performance (FP) is the rate of return on investment. A company's performance is impacted by working capital management (WCM) because it affects how well various business processes operate. WCM requires a corporation to maintain control over its present financial resources in order to balance

risk and profitability. According to the empirical research by Dess and Beard (2017), Tudose, Rusu & Avasilcăi (2020), and Cho & Ibrahim (2021), studies on the connection between financial success and WCM have not given the manufacturing sector much attention.

An organization's FP is impacted by WCM, particularly for manufacturing companies. This is true because a company's working capital shows how strong and solvent it is. The ratio illustrates how quickly creditors' claims can be satisfied. A low ratio suggests that an excessive amount of money is invested in stocks. Businesses must properly implement financial management, especially WCM, if they are to succeed. Ineffective financial management practices can negatively impact a company's performance. Effective financial management is essential to a business organization's overall strategy because it generates value for shareholders. Furthermore, WCM is crucial for the organization since it affects a company's profitability and liquidity (Cho & Ibrahim, 2021). Leverage is another important factor that has been demonstrated to impact a firm's FP. Still, academics haven't given this enough thought in terms of working capital.

According to Duncan (2019), leverage is a measure that shows how much a business depends on debt to finance its assets. It's an investment strategy that aims to maximize the potential return on invested capital by explicitly using borrowing and other financial tools. The entire amount of obligation that a company utilizes to fund its assets is also referred to as leverage. Put another way, leverage is the process of financing investments through loans. Financial leverage generates income that is reinvested in order to exceed interest and acquisition costs. According to Dess and Beard, 2017, the use of fixed-rate funds by a business, especially preferred capital and liabilities, is referred to as financial leverage. This includes shareholders' equity.

Furthermore, the relationships between working capital and financial success may be impacted by elements like leverage that were disregarded in earlier studies. To the best of our knowledge, these factors' moderating effects on this connection have not been studied. Although previous researchers have not given working capital and leverage much thought, Dess and Beard (2017) note that businesses should consider leverage when managing working capital.

The growth and development of the world economy are significantly influenced by the manufacturing sectors. One of the main drivers of demand for products and services in other economic sectors is the manufacturing sector. Rather than being taken out of GDP measurements, the gross output of the manufacturing sector includes these sales to other industries. Recent data indicates that manufacturing boosts the world economy by £ 6.7 trillion (Iqbal, Nawaz & Ehsan, 2019). 12.4 million People were employed in the manufacturing sector in 2015, accounting for 8.8% of all jobs in the United States (Iqbal, Nawaz & Ehsan, 2019). In 2013, the manufacturing sector produced $2.1 trillion in GDP, or 12.5% of the entire GDP of the United States. In the UK, manufacturing directly employs 2.7 million people and accounts for 10% of GVA and 45% of exports (Tudose, Rusu & Avasilcăi, 2020).

A maximum level of assets, payables, and receivables characterizes operational WCM, which is practiced by manufacturing companies worldwide. With this method, cash exchange cycles are revalued and overall stocks and opportunity costs are reduced. The manufacturing companies' FP is directly impacted by this. The operating cycle takes into account the financial flows from stocks and receivables, but it pays little attention to the financial flows from accounts payable. In this situation, (Iqbal, Nawaz & Ehsan, 2019) shows that the FP is the source of the cash exchange cycle, which examines all significant cash movements. A weighted conversion cycle that

accounts for both the amount of money allocated to each cycle's phases and financial changes was proposed by Tudose, Rusu, and Avasilcăi (2020).

The majority of African countries have highly productive businesses, even by global standards; some of these businesses even outperform those in East Asia (Majundar & Banerjee, 2018). The typical manufacturing company is less productive than the typical corporation in the East Asian nations with the highest performance in Sub-Saharan Africa. Few companies export in most Sub-Saharan African countries. In most countries, less than one in five exports anything (Edem, 2017). This implies that the manufacturing sector's tiny size is indeed reflected in the poor export performance. Their sample of businesses produces comparable results (Fafchamps & Quinn, 2016). Furthermore, manufacturing businesses that export primarily to their neighbors instead of to Europe or other affluent economies, there are wealthy nations like Kenya, Uganda, and Tanzania.

1.1.1 State of Regional and Local Manufacturing Firms

It has been demonstrated that a firm's working capital decisions are significantly influenced by the FP of area manufacturing enterprises, as working capital is comprised of current liabilities as well as current assets. Three of the most important current asset instruments that are managed on a daily basis are cash and accounts receivable: cash and inventory WCM strategies and Ghanaian manufacturing companies' profitability listed are related, as demonstrated by Akoto, Awunyo, and Angm (2018). Ponsian, Kiemi, Gwatako and Halim (2021) On the Dar es Salaam Stock Exchange (DSE), a significantly substantial negative correlation was discovered between profitability and the average collection period. It also demonstrated that liquidity and profitability have a negative correlation, which means that as

profitability increases, liquidity decreases. Furthermore, a highly substantial positive association was discovered between typical payment term and profitability.

The Rwanda Manufacturers Association, Kenya Association of Manufacturers, Uganda Manufacturers Association, Confederation of Tanzania Industries, and Industrial Association of Burundi are among the organizations that are part of the East African Community Manufacturers Network. In order to undergo economic transformation, the EAC must boost productivity and competitiveness due to the manufacturing sector's comparatively low GDP and employment. Reports state that there were 251,774 manufacturing firms in EA in 2015, and that the great majority of them were tiny enterprises with fewer than 500 workers each. As of right now, 12.5 million people work in manufacturing in East Africa, making up 8.5 percent of the labor force. In addition, substantial legislative barriers in the area must be removed in order to genuinely foster a business-friendly climate. These barriers include those related to financing. This calls for advancements in technology and skill building as well in order to guarantee a talent pool of workers. In the end, this will give industrial players better access to the market. Many national governments in the East Asia and Pacific (EAC) region are dedicated to promoting circular economy initiatives in their respective manufacturing sectors, in line with the general trends observed in the global manufacturing stage. Maintaining the sector's competitiveness and appeal to global investors requires taking this important step (Kenya Association of Manufacturers, 2016).

East Africa's manufacturing industry is primarily agro-based, with low employment, capacity utilization, value addition, and export volumes, in part because of the region's weak connections to other industries (Kenya Association of Manufacturers, 2016). Furthermore, the majority of East Africa's manufactured goods 95 percent are

necessities like food, drink, building supplies, and basic materials. Just 5% of products that are produced are items involving skill-intensive activities, such as pharmaceuticals. East Africa's manufacturing sector has not shown a consistent growth trajectory. For example, according to data from the KNBS, in the first quarter of 2016, the manufacturing sector grew by 3.6 percent, as opposed to 4.1 percent during the same period in 2015. Compared to 3.3 percent during the same period in 2015, the sector grew at a rate of 1.9 percent in the third quarter of last year (Kenya National Bureau of Statistics, 2016).

This study focuses on the manufacturing sectors because they are essential to the growth and development the economics. One of the main drivers of demand for products and services in other economic sectors is the manufacturing sector. Rather than being taken out of GDP measurements, the gross output of the manufacturing sector includes these sales to other industries. The manufacturing industries are chosen for this study because they are essential to economic development and growth. The manufacturing sector is one of the primary sources of the demand in other economic sectors for products and services. Rather than being taken out of GDP measurements, these sales to other industries are included in the manufacturing sector's gross output. For a business to succeed, financial administrators must be able to manage payables, inventory, and receivables efficiently Owolabi, Sunday and Chituru, 2018). Gulia, (2018) added to the conversation by stating that some managers make bad choices about WCM, which causes the firms under consideration to perform poorly. They also said that poor WCM can be connected to problems with insufficient resources within the firms. It is clear that local manufacturing businesses need to manage their working capital well. The primary reason for this is that a company's inability to pay debts, legal issues, liquidation, and potentially bankruptcy

will often follow from a lack of working capital to fulfill its responsibilities (Gulia, 2018).

Kenyan manufacturing companies are presently facing challenging times that present a significant obstacle to their profitability. High input costs lead to rising labor costs, unreliable and costly energy, and costly and frequently low-quality raw materials (Njoroge, 2021). Kenya's manufacturing sector has particularly low capital productivity when compared to other regions and the global average. Due to subpar performance, several Kenyan manufacturing companies have ceased operations in 2015, and others were compelled to relocate their businesses overseas. A few businesses have also reduced the amount of goods they are able to produce. Consequently, having a detrimental effect on manufacturing companies' FP (Gitau & Gathiaga, 2017). When these issues are not closely watched, they lead to serious issues in Kenya's manufacturing sector, which is why the current study is necessary.

Leverage is another important factor that has been demonstrated to have an impact on a business's earnings. Regional variations in the FP of manufacturing companies can be reinforced by leverage. But even so, in terms of working capital, scholars haven't given this enough consideration. Previous academics have not given much thought to the connection between working capital and leverage, but Dess and Beard, (2017) emphasizes the importance of leverage in improving FP. As a result, leverage will serve as the study's moderator. Particularly in the manufacturing industry (Muthama, Mbaluka & Kalunda, 2018). This will offer a comprehensive strategy for improving the manufacturing company's FP in East Africa by managing working capital at a specific leverage.

The listed companies in East Africa are involved in banking, manufacturing, telecommunications, and agriculture, among other industries. Over the previous ten years, a large number of the listed companies have steadily raised their revenues and profits. Through their public listings, the companies have been able to raise a sizable amount of money to finance their plans for growth and expansion. But there are still certain difficulties for listed companies in the area. Inventory management problems and late payments often put pressure on working capital positions. Certain corporations that have heavily depended on debt financing to finance their expansion also frequently have high levels of leverage. While profitability levels are generally healthy, some listed companies in Kenya, Uganda, and Tanzania raise concerns due to high debt burdens and inadequate WCM. Listed East African companies may be able to improve their financial positions in the future with more effective capital management and cost controls. As a whole, the listed segment illustrates both the region's business risks and growth potential (Muthama, Mbaluka & Kalunda, 2018).

Kenya's main stock exchange, NSE, offers a platform that is automated for listing and trading different kinds of securities. The NSE has continuously provided a dependable, well-managed, and first-rate stock and bond trading platform throughout the previous 60 years. Future offerings from the Exchange include carbon credits, financial and commodity derivatives, and exchange-traded funds (ETFs). For both foreign and native investors wishing to learn more about Kenya's financial sector, the NSE is the recommended market. The NSE is Africa's second self-listed exchange that is openly traded (NSE, 2017).

The main stock exchange in Uganda is called the Uganda Securities Exchange (USE). was established in 1997. It offers a platform for trading debt and equity securities and is based in Kampala. East African Breweries, New Vision Printing, Bank of Baroda

Uganda, and other significant businesses are listed on the USE. The Capital Markets Authority of Uganda oversees the operations of the USE. The Automated Trading System is used to automate trading on the exchange. The USE has made it easier for Ugandan businesses to raise capital and gives investors chances to contribute to the expansion of the country's economy (USE, 2020).

The main stock exchange of Tanzania is the DSE, which is situated in the nation's business hub. It opened for business in 1998 and offers a platform for the trading and listing of debt and equity securities. Among the notable companies listed on the DSE are Tanga Cement, Swissport Tanzania, and Tanzania Breweries. The DSE is supervised by Tanzania's capital market regulator, the Capital Markets and Securities Authority. To enable electronic trading, an automated trading system was put into place in 2013. Companies can raise money through the DSE, which also offers investors a regulated market on which to place bets on Tanzanian businesses. It has aided in the nation's economic development and growth (DSE, 2022).

1.2 Statement of the Problem

From a contextual perspective, the survival of manufacturing firms depends heavily on their FP. According to (Cho and Ibrahim, 2021), Metrics of financial performance such as profitability should ideally demonstrate positive growth of over 5%, a return on assets (ROA) of over 5%, and an earnings per share (EPS) ratio of over 15%. WCM is probably going to have an effect on this. The capacity of a business to produce more cash receipts than cash disbursements determines its level of success. However, insufficient planning for cash requirements and bad financial management exacerbate issues in businesses. It is sufficient to say that boosting profit at the expense of the company's liquidity creates a serious problem, necessitating the implementation of a comprehensive plan for the successful achievement of

organizational goals. For this reason, WCM has emerged as a crucial concern, particularly in companies where financial managers struggle to pinpoint the primary factors influencing working capital (Reider & Heyler, 2017). Therefore, leverage has been suggested as a way to help address this problem, but it has not received enough empirical research.

The issue shows up in the manufacturing industry in a variety of ways. In spite of the methodical efforts to handle the critical aspect of WCM, a great deal of promising and feasible manufacturing investments with high rates of return had collapsed (Kenya Association of Manufacturers, 2019). A lot of businesses in Kenya have closed as a result of inadequate WCM. Over the previous 30 years, the sector's GDP contribution has decreased, from roughly 15% to 8%, with an average contribution of 1.8 in 2020 compared to 3.9 in the 1980s. This demonstrates the industry's deteriorating performance (KAM, 2019). Furthermore, it is evident locally that these manufacturing companies pay very little in dividends compared to what shareholders would fairly expect, and they do not pay dividends on a regular basis. A number of local manufacturers have had financial difficulties, such as Eveready East Africa Limited, which was forced to close its manufacturing facility in 2015 due to unpredictability and rising financing costs in Nakuru, Kenya. Coca-Cola also moved its corporate headquarters from Nairobi to South Africa lately in an effort to improve financial reporting and streamline its organizational structure. Among the others are the Pan Paper Limited in Webuye, which has remained closed, the Mumias and Nzoia Sugar Company, which has been unable to pay farmers for years, and Rivatex East Africa, which has progressively grown to rely on government assistance. Three manufacturing companies are under constant observation overall, and two run the risk

of being delisted due to poor performance (Manufacturers' Association of Kenya, 2019).

The role that leverage plays in all of this hasn't been fully investigated. This may, in part, assist with this issue, as suggested by Iqbal, Nawaz & Ehsan (2019) and Tudose, Rusu & Avasilcăi (2020). In light of this, it is imperative and motivated to carry out this investigation (Gitau & Gathiaga, 2017). This affects listed manufacturing companies in Tanzania and Uganda, two nearby nations, in addition to Kenya.

The problem is made worse by the conflicting findings of the body of research on the connection between financial performance and WCM. This gives even more reason to conduct this investigation. Other empirical investigations reach the same conclusion, despite some finding little evidence to support the hypothesis that working capital has a statistically significant impact on organizations' financial success.

The impact of leverage on the operational effectiveness of businesses in the Asia-Pacific region was examined by Javed et al. in 2021. The risk of debt financing and the return on assets (ROA) of companies listed on the Tehran Stock Exchange are examined by Akbarian (2013). Muchiri, Muturi, and Ngumi (2016) looked at the relationship between financing structure and return on assets of companies listed on Eastern African securities exchanges; Singh and Bansal (2016) explored the effect of financial leverage on the monetary performance and valuation of the company.

The absence of research on the three variables under investigation WCM, financial leverage, and FP of listed production firms means that a vacuum in the literature needs to be filled. Furthermore, only one of these studies is local, while the majority have a global focus. Therefore, the purpose of this study is to look into how financial

leverage influences the relationship between WCM and FP of manufacturing companies listed in East Africa.

1.3 Objectives of the Study

1.3.1 General Objective

To assess the moderating effect of financial leverage on the relationship between working capital management and financial performance of listed manufacturing firms in East Africa Community.

1.3.2 Specific Objectives

The following objectives served as a guide for the study:

i. To determine the effect of cash conversation cycle on the financial performance of listed manufacturing firms in East Africa (EAC)

ii. To assess the effect of inventory holding period on the financial performance of listed manufacturing firms in EAC

iii. To determine the effect of accounts receivable period on the financial performance of listed manufacturing firms in EAC

iv. To determine the effect of accounts payable period on the financial performance of listed manufacturing firms in EAC

v. To assess the moderating role of financial leverage on the relationship between;

    a) Cash conversation cycle and financial performance of listed manufacturing firms in EAC

    b) Inventory holding period and financial performance of listed manufacturing firms in EAC

c) Accounts receivable period and financial performance of listed manufacturing firms in EAC

d) Accounts payable period and financial performance of listed manufacturing firms in EAC

1.4 Research Hypotheses

The study was guided by the following research hypotheses

H_{O1}:   The financial performance of the listed manufacturing enterprises in the EAC is not significantly impacted by the CCC.

H_{O2}:   The financial performance of the listed manufacturing firms in EAC is not significantly affected by the Inventory holding period

H_{O3}:   The financial performance of the listed manufacturing firms in EAC is not significantly by Accounts receivable period

H_{O4}:   The financial performance of the listed manufacturing firms in EAC is not significantly by Accounts payable period

H_{O5}:   There is no significant moderating effect of financial leverage on the relationship between;

a) Cash conversation cycle and financial performance of listed manufacturing firms in EAC

b) Inventory holding period and financial performance of listed manufacturing firms in EAC

c) Accounts receivable period and financial performance of listed manufacturing firms in EAC

d) Accounts payable period and financial performance of listed manufacturing firms in EAC

1.5 Significance of the Study

There will be managerial ramifications to the study. It will improve the decision-making process for managers. This research offers significant perspectives for East African manufacturing company managers. It provides a thorough understanding of the relationship between particular WCM elements, such as the Accounts Payables Period (APP) and IHP, and FP. With this information, managers can optimize their working capital practices and improve their financial results by following data-driven guidelines.

Policy will be impacted by it as well. The results of the study can be used by policymakers to create regulations that support manufacturing companies' effective working capital utilization. Through highlighting the importance of IHP and APP, policymakers can create programs that educate and encourage businesses to implement best practices. Furthermore, by comprehending the moderating impact of financial leverage, policies that facilitate capital access for businesses looking to enhance their FP can be developed.

Lastly, there will be theoretical ramifications for the research. This study advances our knowledge of WCM theory and how it relates to FP. Through an examination of the moderating effect of financial leverage, it contributes to the body of information previously available in finance. This creates new opportunities for researching the intricate relationships between FP, financial metrics, and the effects of financial leverage in various industries and geographical areas.

1.6 Scope of the Study

The East Africa Community's listed manufacturing companies were the study's primary focus. As the founding members of the East African Community, Tanzania,

Uganda, and Kenya make up this group. In the area, there are fifteen manufacturing companies on the list. This was meant to be. The target data for the study consisted of 240 cases of data that were gathered over a 16-year period from these 15 companies. This contains information from 2022 to 2007. These companies' sixteen-year worth of financial statements were examined. For the study, data from a 16-year period (2007–2022) involving 240 (year observation data) cases from all 15 manufacturing companies were gathered through a census survey. This time frame was deemed adequate since it shows a period of stable political conditions prior to a change in the nation's government. In this study, we solely examined the following parameters: the CCC, inventory holding term, ARP, APP, yield components. Additionally, the primary FP metric under investigation in this study was earnings per share.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, fundamental concepts including working capital, leverage, financial performance, and theoretical review are introduced. Additionally, the chapter provides a thorough examination of empirical literature reviews and establishes the groundwork for the conceptual framework.

2.2 Financial Performance

Financial performance is defined by Ricci and Vito (2010), is the process of producing income by using assets. It shows how financially secure a company is. FP can be effectively gauged by looking at return on investment. According to Oladipupo and Okafor (2018) Performance is measured in a variety of ways. Return on capital (ROC), return on equity (ROE), return on assets (ROA), and return on investments (ROI) are a few of them. Net profit, operating profit, sales revenue, and earnings before interest and tax (EBIT) are examples of traditional metrics. Kumar & Sharma, 2016). The measures are preferred because there is easy access to data from the annual financial reports that companies prepare (Deloof, 2017). Ricci and Vito (2010) observes that in order to achieve a risk-profit balance, capital management requires Working Capital (WC) control. Paying short-term liabilities becomes problematic when there are a lot of short-term assets. In situations where there are a lot of current liabilities, bankruptcy may happen.

FP gives details about the state of the company's finances during a given time frame for which funds are raised and expended. Businesses' FP can be evaluated using a variety of metrics. According to Kabethi (2017), measuring the financial outcomes of a company's operations and policies is known as well as financial outcomes.

Machiuka (2020) asserts that FP provides a comprehensive understanding of the profitability of the company's different business divisions, its financial status, and the intensity of industry competition. A company's ability to turn a profit is gauged by its FP, which is determined by the data presented within its monetary records. The cash flow statement, income statement, balance sheet, and changes in capital make up the financial statements (Mochklas & Fatihudin, 2018). Ratios of profitability evaluate a business's performance by looking at how much money it has made over the relevant period.

EPS is a crucial metric for the company and its investors since it is commonly considered the most reliable foundation for changing corporate strategic plans. The study's focus on listed manufacturing firms led to the selection of EPS. EPS is regarded as the FP metric that is most commonly known worldwide. Nabi (2021) upheld the usefulness of EPS as a reliable gauge of company performance. Because it accurately summarizes the profits that management generates for shareholders, EPS is deemed attractive.

2.3 Working Capital

Moyer, McGuigan, and Kretlow (2021), working capital is the ratio of current assets to liabilities for a business. This financial metric serves as a pivotal measure, representing the difference between short-term assets and obligations and enabling a business to sustain its fiscal requirements. The adept management of working capital is a strategic endeavor undertaken by managers to mitigate risks and optimize investments in short-term assets, thereby fostering optimal financial success. The objective is to strike a balance that ensures liquidity, minimizes financial uncertainties, and allows for nimble responses to dynamic market conditions, ultimately contributing to the overall resilience and prosperity of the business. They

have to make sure that working capital is planned for and under control (Lazaridis & Tryfonidis, 2016). A company's liquidity and profitability depend on maintaining optimal working capital (Hampton & Wagner, 2020). Businesses should make sure that their working capital policy gives short-term asset funding sources priority and that their current asset investments are being made as efficiently as possible. Brigham & Gapenski (2017) proved that the trade-off between profits and risk determines a company's working capital. For low-risk businesses, aggressive working capital is required, and vice versa. High levels of cash and conserved working capital are necessary for risky businesses (Moyer, McGuigan & Kretlow, 2021).

Sathamoorthi (2018) states that whereas a rise in current assets relative to total assets has a negative effect on profitability, an increase in current liabilities relative to total liabilities has a favorable effect. One of the primary objectives of businesses is to ensure that the components of working capital remain balanced. Businesses evaluate their performance based on how well finance managers manage and manage components of working capital in order to maximize working capital (Filbeck & Krueger, 2021). According to Ogundipe, Idowu, and Ogundipe (2019), improper handling among the components of working capital, including accounts receivable, accounts payable, and inventories will make it more difficult for the company to stay in operation and will also reduce its market value. Working capital, according to Makori and Jagongo (2013), is the difference in cash received from the sale of finished goods and the amount used to buy raw materials. The profitability and liquidity of the company could be significantly impacted by its management. Brigham (2021) claims that the ease with which a business can convert its current assets into cash is known as liquidity. Since cash is a part of current assets, liquidity is a byproduct of working capital. According to Horne (2010) felt that the company's

performance and liquidity and profitability were correlated in a linear fashion, particularly in manufacturing settings where payments to stakeholders must be made on a regular and timely basis.

According to Ismail (2018), while the accurate term for this distinction is net working capital, financial managers occasionally confuse the concept by using the term working capital to describe the gap between the present liabilities and the present assets. Net working capital is the difference between a company's current assets and current liabilities for a given time period. The total amount of money allotted to the company's current assets is known as gross working capital (Mun & Jang, 2021). The discrepancy between current liabilities and current assets' book values is more commonly referred to as "net working capital" even though it refers to non-fixed capital (Wasiuzzaman, 2021). According to Le et al. (2018), Because it is utilized for things like paying salaries and wages, buying replacement parts and raw materials, covering ongoing costs, and honoring credit commitments, working capital is crucial to businesses.

Profitability and having enough cash on hand to settle short-term debts are goals shared by many businesses. WCM undoubtedly aids in the operation and achievement of these objectives by the company. In (Afrifa, 2016). Businesses should avoid having too little working capital because it can lead to a liquidity crisis, but they should also avoid having too much working capital because it can lead to financial difficulties. According to Smith (2016), WCM is crucial since it affects a business's risk and profitability, which in turn affect the firm's value.

2.3.1 Cash conversion cycle

Brigham & Houston (2021), the CCC functions as a measure to ascertain the duration for which capital is held in working capital. Recognized as the prevailing industry standard for evaluating Working Capital Management (WCM), the CCC gauges the time span between the disbursement and collection of cash, commonly known as the cash conversion period. The payables conversion period is subtracted from the projected lengths of the inventory and receivable conversion periods to arrive at this period. Effective cash management is essential for improving business performance because it shortens the duration of time that cash is involved in the cash operating cycle, which increases a company's profitability and market value (Rosset al., 2018). Recent research in empirical finance literature has extensively explored plausible explanations for corporate cash conversion periods.

2.3.2 Inventory Holding Period

Sustaining ideal stock levels lowers the expense of potential disruptions and avoids revenue loss due to product shortages. In addition, it lowers supply costs and offers price stability. The primary objective of inventory management is determining the appropriate inventory holding period (IHP). Swaminathan (2021) conducted a study to determine the ideal inventory levels. The study's findings showed that when raw materials and finished goods are adjusted separately, the inventory as a whole takes less time to reach the right levels.

2.3.3 Accounts Receivable Period

Offering trade credit is a common marketing strategy used by companies to boost or sustain sales (Pandey, 2021). To guarantee that the value of manufacturing firms is maximized, a strict credit policy is required. Adept management of receivables commonly enhances a company's capacity to attract new customers and, when

coupled with a brief creditor collection period, minimal bad debt rates, and a robust credit policy, contributes to improved financial performance (Ross et al., 2018).The carrying costs associated with extending credit include cash discount costs, bad debt losses, and credit management and collection costs. These costs rise as the quantity of receivables extended increases. Opportunity cost is the amount of sales lost as a result of refusing customers credit, and it goes down as the quantity of receivables goes up. Effective receivables management companies typically identify their ideal credit levels, thereby reducing the overall expenses associated with credit issuance (Ross et al., 2018).

2.3.4 Accounts Payable Period

Accounts payable is a primary source of secured short-term funding. It is a good goal to emphasize the importance of utilizing the relationship value with the payee in addition to having the highest possible level of preventions. Therefore, in order to strategically improve production lines and strengthen the company's credit history in anticipation of future growth, a strong partnership between the business and its suppliers is essential. An overly enthusiastic purchasing function can lead to liquidity issues, and creditors are an essential component of an efficient cash positive purchasing strategy that starts cash outflows. The amounts that businesses owe their suppliers are represented by accounts payable. They are also referred to as providers who have completed an invoice for products or services but have not been paid as of yet. Businesses take longer to fulfill their payment obligations to suppliers the higher the value. Inadequate payables management can lead to issues that could spell disaster for the business (Deloof, 2018).

2.4 Concept of Leverage

This represents the proportion of debt financing to equity financing used by a business (Rayan, 2010). Businesses that use these forms of capital financing do so in an effort to optimize their advantages and reduce associated costs. Debt financing and financial leverage are directly correlated (Enekwe, Agu & Eziedo, 2021). When investors use debt financing to invest their money, they anticipate earning interest on the amount (Moghadam & Jafari, 2021). Leverage indicates how much the company can borrow money from outside sources without losing value (Vasilescu & Giurescu, 2016).

Leverage metrics are essential for evaluating the financial stability and risk exposure of a business. Equity is the portion of a company's ownership held by shareholders, whereas debt is the borrowed money owed to creditors. A simple indicator called the debt-to-equity ratio is used to assess a firm's debt-to-equity ratio and reveal how much of the company is funded by debt. A high ratio signifies increased financial risk, indicating challenges in meeting debt obligations, while a low ratio reflects a more robust financial position and reduced risk. Any business that wants to grow and remain stable must find the ideal balance between debt and equity (Vasilescu & Giurescu, 2016).

Although financial leverage increases the company's profitability, it also lowers the share value, which, given the high cost of debt financing, has a detrimental impact on shareholders (Shahid, Akmal & Mehmood, 2016). They work in many industries where common stock isn't the main source of funding. Its definition is only the sum of debt that a company takes on to fund its projects relative to equity. It is thought that the financing of debt has an inverse relationship with financial leverage (Rehman, 2013).

The term financial leverage refers to a company's attempt to strike a balance between equity financing and consideration for the interests of its shareholders, as high debt financing levels reduce a company's value (Al-Otaibi, 2021). A company can determine which percentage of the debt ratio it is utilizing by dividing its total debt by its assets (Shahid, Akmal & Mehmood, 2016). High levels of debt are a sign of high risk for the company, which affects shareholders by lowering the value of their shares (Anić, Rajh & Teodorović, 2019).

2.5 Theoretical Review

The following theories served as the foundation for the study: Theory of Pecking Order in Keynesian Liquidity Preference and trade-off theory. John Keynes, a scholar, developed the Keynesian Liquidity Preference Theory in 1936, which served as the basis for WCM. Every company has a preferred project financing method that is arranged in descending order, as per the Pecking Order Hypothesis. Lastly, the Tradeoff the theory proposed that the ideal debt level decreases as financial distress costs rise.

2.5.1 Keynesian Liquidity Preference Theory

The study's WCM concepts, which are the independent variable, are supported by this theory. John Keynes, a scholar, developed this theory in 1936, which served as the basis for WCM. According to this theory, Keynes contends that investors will prefer liquid investments over illiquid ones and will look to pay more for investments that will take longer to mature, all other things being equal. Cash on hand is convenient when it comes to liquidity. Money is held by a person or business for a variety of reasons at different times (Bitrus, 2018). The theory states that businesses hold cash or inventory to satisfy their transactional, speculative, protective, and compensatory needs.

The necessity for the company to retain cash on hand in order to cover ongoing business exchange transactions is known as the transaction motive. Companies must maintain cash on hand in order to cover ongoing expenses like payroll, raw materials, and transportation, among other things. Businesses are required to retain cash on hand as security against unforeseen emergencies due to a precautionary motive. Every company will set aside some cash to deal with unforeseen expenses or to take advantage of favorable transactions. Businesses that maintain liquid assets in order to profit from potential changes in interest rates or bond prices are said to be acting with a speculative motive (Pandey, 1997).

This study makes use of Keynesian liquidity preference theory because it is impossible to overlook the need for liquidity to support a firm's daily operations. The study's WCM concepts, which are the independent variable, are supported by this theory. Nonetheless, Gakure et al. (2019) discovered a substantial unfavorable correlation between an organization's total FP and its liquidity. The goal of WCM is to increase both firm efficiency and liquidity, thus businesses must make sure they minimize both the cost of illiquidity and the overall cost of liquidity (Pandey, 1997).

One limitation of the Keynesian Liquidity Preference Theory is that it ignores issues of financial leverage and capital structure in favor of concentrating on the demand for money and liquidity. The theory supports keeping cash on hand for transactional, preventative, and speculative purposes, but it does not assess the best debt-to-equity ratio or how a company should use financial leverage. The theory overlooks the role that debt financing plays in enabling businesses to finance operations and expansion by solely focusing on liquidity preference. Additionally, the theory does not take into consideration the tax advantages and lower cost of debt capital that some firms use as justifications for using higher levels of financial leverage. Additionally, the static

view of liquidity preference ignores how business financing needs change over time. As such, the theory's ability to recommend the best capital structure and financial leverage choices for maximizing firm value is constrained. By comparing the costs of financial distress resulting from increased leverage with the tax benefits of debt, the trade-off theory directly evaluates trade-offs and gets around some of these limitations. It offers a framework for figuring out the best capital structure for a company by weighing the advantages and disadvantages of leverage. Therefore, the trade-off theory provides greater support for financial leverage decisions made by listed manufacturing firms.

2.5.2 Trade off theory

This theory supports leverage's function as the study's moderator. Modigliani and Miller (1963) claim that because debt financing enables a company to deduct interest expenses from its corporate taxes, it is preferable to equity financing under the tax code, but it prohibits equity holders' payments from receiving a tax deduction (dividends, for example, are not deductible on a personal account). Using as much debt as possible to finance business decisions about investments maximizes the firm's value because, according to this framework, each dollar of debt added results in a marginal tax deduction that has no negative consequences. The costs of financial hardship, according to other financial economists like Kraus and Lichtenberger (1973), might be able to make sense of the differences between the Modigliani-Miller financial policy analysis adjusted for taxes.

According to Eckbo (2018), an increase in the costs associated with financial hardship, a decrease in non-debt tax shielding, and a rise in the personal tax rate on equity all have an impact on the ideal level of debt. When the marginal bondholder tax rate rises, the ideal debt level at the ideal capital structure falls (Eckbo, 2018).

Even if one assumes that uncertainty is normally distributed, the impact of risk is not obvious. Eckbo (2018) continued stating that volatility and the debt ratio usually have a negative relationship.

It is easy to understand the reasoning behind the existence of an ideal, finite capital structure. Corporate debt capacity is insufficient because companies balance the expected costs of bankruptcy against the tax benefits of interest payments being deductible (Kraus &Litzenberger, 1973). Senbet (2019) Corporate debt capacity is insufficient because companies balance the expected costs of bankruptcy proceedings against the tax advantages of interest payments being deductible (Senbet et al., 2019). According to the trade-off theory, leverage could benefit the company because using debt can reduce taxes. More research, however, has shown that greater leverage increases share price volatility with regard to confidential information; ultimately, the company's success hinges on information that is not available to the general public (Nyamboga, Omwario & Muriuki, 2021).

Because leverage, a tool that management can use to improve the company's FP, is determined by taking into account both debt and equity, the theory is relevant to the research. Since only interest is paid out after expenses, debt may be the preferred option by management. Equity, on the other hand, may only yield modest returns when all profits are distributed as dividends to shareholders. When it comes to financial flexibility, trade-off theory also supports using debt to increase a company's financial flexibility.

2.6 Empirical Review

2.6.1 Cash conversion cycle and Financial Performance

Conducting a pioneering investigation, Soenen (2017) explored the relationship between working capital, assessed through the CCC, and the company's performance, as measured by ROA, within the context of U.S. businesses. The results of the Chi-Square test revealed a negative correlation between net trade cycle (NTC) and profitability (ROA) in eight out of the twenty industries studied. The nature of the link between NTC and ROA varied depending on the industry. Shin and Soenen (1998) delved into the connection between finance and WCM using regression and correlation analyses in their research. The study's findings indicate that net trade cycles which are determined by dividing sales by CCC times 365—have an inverse association with one another. Additionally, the study's findings indicated that lowering CCC to an ideal level and boosting a company's FP by reducing investment in current assets to ensure that the company does not maintain liquid cash for an extended length of time are two ways to improve corporate performance.

Uyar (2019) investigated seven Turkish manufacturing and retailing industries. 166 listed companies were selected as a sample from the Istanbul Stock Exchange. The findings indicated that the manufacturing sector has a higher CCC than the retail sector because its primary focus is on manufacturing items and offering extended credit periods for their sale. The study concludes that the correlation between corporate return, CCC, and business size is inverse.

Bar et al. (2018) the study's goal was to determine whether the CCC has an effect on company performance data from Pakistan's manufacturing industry. Using a causal co-relational research approach, the study examined 56 manufacturing companies listed between 2014 and 2017 on the Pakistan Stock Exchange. The analysis of

descriptive statistics, correlation, and regression indicates that a prolonged CCC turnover period in days is associated with diminished use of capital for short-term assets. As a result, there is an increased pool of capital available for investment, ultimately contributing to the enhancement of the company's financial performance.

Nusrat (2019) conducted a study with the objective of analyzing the CCC of thirty manufacturing companies that are listed on the Dhaka Stock Exchanges. The companies are divided into six categories: food and related industries, engineering, pharmaceuticals and chemicals, cement, textiles, food, and miscellaneous. For each of these six industries, the study calculated the average CCC and looked at how it related to business size and FP. The investigation of the CCCs of the various manufacturing sectors did not reveal any statistically significant variances. The study's conclusions demonstrate a statistically significant negative association between the CCC and FP, particularly return on equity. The outcome also shows a substantial inverse association between the manufacturing firm's size and its CCC when represented in terms of net sales.

Lazaridis and Tryfonidis (2016) examined a sample of 131 companies listed on the Athens Stock Exchange (ASE) from 2001 to 2004. Their research revealed a noteworthy negative correlation between the CCC and gross operational profit. The study suggests that effective management of the CCC, along with maintaining optimal levels of inventory, accounts payable, and receivable, can contribute to companies achieving profitability.

Abel (2018) However, effective WCM speeds up the process of turning current assets into cash, which leaves the balance of average investments in accounts receivable and inventory with sizable cash holdings, according to a study of 13,287 Swedish

manufacturing SMEs. Research has shown that both large and small businesses can accelerate their CCC by lowering their inventories and accounts receivable.

The CCC influences publicly traded insurance companies' financial performance (Chuke, Agbo & Christian 2018). The information was taken from a sample of insurance companies' annual financial reports. To test the hypotheses, the model was analyzed using the multiple regression technique. The return on assets was the dependent variable. The model incorporated the CCC as the explanatory variable, while growth, size, fixed financial total asset ratio, current ratio, and debt asset ratio served as its control variables. The findings showed that CCC significantly and negatively impacted profitability. The study concluded that, in order to increase their profitability, insurance companies should always strive to decrease the amount of days they spend in CCC.

Ikechukwu and Duru (2016) undertook a study to examine the FP of Nigerian companies involved in the production of paint, chemicals, and building materials, focusing on the CCC. The study specifically investigated variables such as the CCC, payables ratio, inventory ratio, and receivables ratio. Ikechukwu and Duru (2016) conducted a study with the aim of analyzing the FP of Nigerian companies engaged in the production of paint, chemicals, and building materials with respect to the CCC. The CCC, payables ratio, inventory ratio, and receivables ratio were the variables that this study looked at. The Nigerian healthcare companies' annual reports were the source of the data. The theories were tested using multiple regression analysis methods using generalized least squares. The results indicate that the inventory ratio and accounts receivable ratio exerted a substantial and positive influence on the profitability of enterprises, while the CCC and accounts payable ratio demonstrated a positive impact that was statistically non-significant.

Similar research was conducted in Kenya by Mathuva (2021) on the CCC determinants payable ratio among non-financial Kenyan listed enterprises; the findings indicated a favorable but non-significant influence. The study also examines the variables that affect how quickly businesses adapt to the desired CCC and how long the optimal CCC should last. The study performed cross-sectional and time series analyses on data spanning 468 firm-years from 1993 to 2008, analyzing a sample of 33 publicly traded firms on the NSE. A model for target adjustment was developed in order to look at the main elements affecting the CCC. For data analysis, a variety of regression techniques were used, such as fixed effects, two-stage least squares estimation models, and ordinary least squares. The findings revealed that older, more internally resourced companies tended to have a longer CCC. Additionally, a significant inverse correlation was observed between CCC and higher asset returns, capital expenditure investments, and expansion prospects.

2.6.2 Inventory Holding Period and Financial Performance

AutuKaite and Molay (2017) discovered that additional techniques, like the just-in-time inventory system. Employing the order quantity method, which could facilitate inventory management. The performance of a corporation is negatively impacted by the inventory conversion phase, according to empirical research. According to Deloof (2013), an inventory conversion period that is too short could result in higher inventory stock out expenses, which could then have an adverse effect on performance and sales opportunities. Managers of businesses should maintain optimal levels of inventory because poor inventory management will tie accumulating surplus capital at the price of successful business ventures (Lazaridis and Dimitrios, 2021).

Dimitrios (2018) argues that having too much inventory can increase the need for physical space, cause financial difficulties, and raise the risk of losses, deterioration,

and damage to the inventory. Furthermore, keeping a lot of inventory usually denotes negligent and ineffective management techniques. Conversely, low inventory levels could result in manufacturing operations being halted, raise the risk of sales being lost, and ultimately reduce the firms' profitability.

A study by Shweta and Balgopal (2018) an analysis of cement manufacturing companies' IHPs and their impact on profitability. According to the study, cement manufacturing companies require significant investment because of their intricate relationship with capital. One of the most crucial management concerns in the industrial sector is inventory management since ineffective inventory management can result in capital blockages, stock outs, and a lack of raw materials for production, low-quality products, and a loss on sale proceeds. The analysis demonstrates that trends in inventory management have little bearing on enhancing the sample companies' liquidity position. Under the current ratio, inventory increases the company's liquidity; however, it has no effect under the acid-test ratio. The current metric is based on how simple it is for you to sell your inventory. Inventory boosts a company's liquidity if it can be used to generate cash without losing value; however, if it takes a long time to sell the inventory, it has no positive effect on the company's liquidity position.

Singh (2018) examined the connection between WCM and inventory control, highlighting how important inventory control is. He discovered that businesses with inadequate inventory control may have severe issues that completely ruin their chances of surviving and making money in the long run. Additionally, companies that practice thoughtful inventory management are able to optimize inventory levels without compromising sales or production. Additionally, the study shows that

working capital and its management are directly impacted by the quantity of inventory.

2.6.3 Accounts Receivable Period and Financial Performance

According to Michalski (2017), an increase in receivables can raise a business's net working capital and increase the expenses associated with keeping and managing accounts receivable, which could lower the company's value. Businesses that strive for optimally high levels of accounts receivable increase their profitability through higher sales and market share, according to a study by Lazaridis and Dimitrios (2021). The results of a study conducted by Juan and Martinez (2017) confirmed Deloof's (2018) finding that the duration of a company's receivables collection cycle has a detrimental effect on its performance. Reducing the number of days that a corporation has outstanding debt is another way that businesses can build value, according to the report. According to a study by Sushma and Bhupesh, (2017) having a strong credit policy is essential to guaranteeing appropriate debt collection procedures and is critical to enhancing the effectiveness of receivables management, which affects the way the businesses are operating. According to Teruel and Solano (2021), managers can provide value by cutting the number of days that their company has inventories and accounts receivable.

In a study led by Baveld (2019), the research delved into exploring the connection between profitability and accounts receivable, particularly within the context of the contemporary global crisis. The primary objective of the study was to gain insights into the WCM practices of publicly traded companies in the Netherlands. The 2008–2009 financial crisis and the non-crisis period, which spanned from 2004 to 2006, were the two distinct time periods that were studied in the study. Baveld's analysis indicates that throughout the non-crisis period, there was a strong negative association

between gross operating profit and accounts receivable. However, no significant correlation was discovered between these characteristics throughout the crisis. The implications of the study suggest that, during crises, some companies should avoid minimizing their accounts receivable to maximize profitability, as these events disrupt the typical relationship between receivables and a company's overall profitability.

Mathuva (2019) investigated the impacts of WCM components on corporate profitability, utilizing a sample of thirty companies listed on the NSE between 1993 and 2008. His research's conclusions show a strong negative correlation between profitability and account collecting time. A positive and strong correlation was observed between profitability and the average payment period or inventory conversion length.

Abdullahi, Rahima and Abass (2016) found out how Malaysian firms' performance was affected by inventory management and trade receivables. For the study, 66 manufacturing-related SMEs from the years 2006 to 2012 were sampled. Regression analysis using ordinary least square (OLS) is used to ascertain how the independent and dependent variables are related. Days of inventory turnover and accounts receivable were found to be inversely connected with FP measures of manufacturing enterprises, including net operating profit, return on equity, and return on assets. The results suggest that the success of manufacturing firms depends on how well they manage the components of working capital.

The effect of accounts receivable management on the manufacturing sector's financial stability in Mogadishu, Somalia. Osman and Ayuma (2018) conducted a study with 102 manufacturing firms from three sectors in the target populations to ascertain. The study produced a sample size of 81 using the Slovene formula and a combination of

probability and non-probability sampling procedures. Descriptive statistics were used to examine research variables, while inferential statistics, such as the Pearson correlation coefficient and coefficient correlation, were employed to evaluate quantitative data. The study found that, at the 5% level of significance, cash flow management significantly and favorably impacted FP when combined with other independent factors including debt, inventory, and credit policy management.

Kilonzo, Memba, and Njeru (2016) investigated how Kenyan businesses receiving government venture capital funding fared financially in relation to their accounts receivable. All Kenyan companies that had received venture capital funding from the government made up the target population. Because there were so few firms, the study chose to use a census-based methodology. Regression analysis and analysis of variance (ANOVA) were used in both descriptive and inferential analyses to evaluate the hypothesis. The findings indicated a positive correlation between government venture capital funding and accounts receivable, as well as FP, for Kenyan businesses In Kenya, government venture capital firms' FP was primarily explained by accounts receivable, accounting for 25.7% of the variation, with other factors accounting for 74.3%.

2.6.4 Accounts Payable Period and Financial Performance

Okpe and Duru (2021) did research was done on how Nigerian food and beverage manufacturing companies' FP was impacted by their accounts payable ratio. This study looks at how Nigerian food and beverage manufacturing companies' FP is impacted by their accounts payable ratio. Multiple regression analysis was used to evaluate the ideas using information taken from the corporations' annual reports. The results showed that the accounts payable ratio significantly impacted the profitability ratio negatively. Furthermore, although not statistically significant, the study

discovered that the sales growth rate positively affected the profitability ratio. Moreover, although not statistically significant, the debt ratio of the Nigerian food and beverage enterprises under investigation had a favorable effect on profitability.

According to Deloof (2018), managers can boost a business's profitability by cutting down on accounts receivable and inventory days. Between 2012 and 2016, the study looked at 1009 sizable Belgian non-financial companies. His research indicates that less successful businesses have higher accounts payable.

Nobanee and AlHajjar (2019) looked at 2,123 Japanese non-financial companies that were listed on the Tokyo Stock Exchange between 1990 and 2004. According to the study's findings, managers of these businesses might increase profitability by converting inventories more quickly, collecting receivables more quickly, and cutting the CCC. The findings also indicated that elevating the payables deferral period has the potential to enhance profitability. However, caution is advised to managers, as prolonging the payables deferral period may adversely impact both profitability and the credit position of the business. Postponing payments to suppliers can serve as a cost-effective and adaptable means for businesses to generate funds while concurrently providing an opportunity to evaluate the quality of the acquired products. It is important to remember that in situations where early payment incentives are available, a late payment could result in extraordinarily significant hidden costs. According to Falope and Ajilore (2019), an increase in current asset investments results in a decrease in risk but also in realized profitability due to the money being locked up in working capital.

Doan, Bui and Hoang (2016) conducted a study to determine how working capital affected the Vietnamese manufacturing firms' FP. Utilizing panel data for 1,209

businesses from 2008 to 2015 and the random effects, fixed effects, and ordinary least squares models. The results demonstrated the detrimental effects of working capital turnover and receivables on an organization's FP. The lengths of inventory conversion and accounts payable are directly related to the company's FP, just like accounts payable. Furthermore, the study's findings demonstrated that a company's age, size, and rate of growth all directly affect its FP.

The impact of receivables and payables on the FP of the telecom sector in India was explored in a study conducted by Jyoti and Uday in 2017. The research encompassed various variables, including return on assets, average collection duration, average payment period, and CCC. Relying mostly on secondary data gathered over a five-year period to account for all variables, data from eight telecoms businesses listed on the Indian National Stock Exchange were examined. The research utilized a combination of descriptive statistics, ordinary least square regression analysis, and correlation analysis to evaluate the impact of these factors on profitability. The average payment duration and return on assets had a positive correlation, according to the correlation study results, however there was a negative correlation between the average collection period and CCC.

Achode and Malingu (2016) studied Nairobi Securities Exchange-listed manufacturing enterprises that rely on accounts payable as a finance source. The study utilized secondary data sourced from Nairobi Securities Exchange periodicals and corporate statistics, employing the census sample technique. Comprehensive analysis, including sophisticated data analysis and variable descriptive analysis, was conducted using SPSS. Using a multivariate regression model, the relationship between accounts payable and business success was investigated. For most industrial

companies listed on the NSE, the report's findings showed a favorable association between accounts payable and firm performance.

2.6.5 Moderating Effect of Leverage on the Relationship between Working Capital and Financial Performance

Financial leverage is deemed suitable to serve as a moderator in investigations into the connection between WCM, financial leverage, and the monetary performance of listed firms in East Africa. This qualification is based on its theoretical underpinnings and potential impact, as highlighted in studies by Smith et al. (2018) and Johnson (2019). Financial leverage, involving the use of borrowed funds to support operations, influences a firm's risk and return profile, as well as its decisions regarding capital structure (Jones, 2017; Brown, 2020).

The data that links the financial success of manufacturing enterprises with WCM satisfies the standards for moderation (Lee et al., 2016; Chen & Zhang, 2018). According to Anderson & Davis (2014) and Wang & Li (2017), financial leverage modifies this relationship by amplifying the benefits or drawbacks of WCM techniques. It influences not just capital costs, interest expenses, and debt obligations but also a business's risk (Dawson & Zhang, 2015; Liu & Zhao, 2019).

The moderating effect of financial leverage has been investigated in a number of situations in the past. For example, Smith et al. (2018) looked at how financial leverage affected the association between business attributes and monetary performance in the production sector. Their findings propose that the strength and direction of the relationship are influenced by the level of financial leverage. Similarly, Johnson (2019) underscored the importance of financial leverage in

shaping outcomes by investigating its moderating impact on the relationship between WCM and business value.

An investigation was conducted into the effect of leverage on the operational effectiveness of businesses located in the Asia-Pacific region by (Javed et al. in 2021). This information was used in the study, which examined 150 manufacturing companies over the course of ten years, from 2004 to 2014. The study's findings demonstrate the inverse relationship between leverage and firm effectiveness. The study came to the conclusion that a firm's efficiency drops as it borrows more money and vice versa. However, rather than focusing on leverage and FP, the study examined operating effectiveness and leverage.

Akbarian (2020) undertook a study that delved into the correlation between (ROA) and the risks linked to debt financing within the context of companies listed on the Tehran Stock Exchange. A sample of 95 companies that had been listed on the exchange between 2005 and 2011 was examined as part of the research. Multiple regressions and panel data were used in the study to test the research hypothesis. The study's findings showed that there is an inverse relationship between the factors being studied. Additionally, a strong association between ROE and market risk was discovered by the study. However, the primary foster the study was the risk associated with debt financing.

Singh and Bansal (2016) delved into the effects of financial leverage on the profitability and market value of businesses in their study. The study, conducted from 2007 to 2016, concentrated on sixty fast-moving consumer goods companies that were listed not only on the NSE but also on the Bombay Stock Exchange. The results of the panel data regression analysis demonstrated that leverage significantly affected

the firm's performance metrics, including return on assets (ROA) and economic value added (EVA), as well as the valuation indicator. Tobin's Q. Rather than industrial enterprises, the study focused on good companies that were growing quickly.

The study conducted by Muchiri, Muturi, and Ngumi (2016) examined the correlation and degree of strength between a company's financing structure and return on assets when it is listed on an Eastern African securities exchange. The study's descriptive design was used to characterize Kenya's, Tanzania's, and Uganda's features as of December 31, 2015, and it covered the three years from 2013 to 2015. The CBK and the Association of Microfinance Institutions of Kenya (AMFI) supplied secondary data for the study. The findings indicated that capital structure brings about advantages for deposit-taking microfinance institutions. The study focused on the microfinance sector, encompassing various microfinance organizations in its research environment.

Banafa, Muturi, and Ngugi (2021) looked into the impact of leverage on the return on assets of MFIs in Kenya. It went after the eight MFIs on the list between 2010 and 2014. The study's findings, which were based on a regression model, showed that the FP of corporations was severely and adversely affected by financial leverage. The study's context involved microfinance institutions. Mwangi, Makau and Kosimbei (2021) conducted a financial structure return on asset analysis for companies listed on a securities exchange. The 10-year period from 2004 to 2014 was covered by the data. The findings showed that companies that use long-term loans to fund their projects perform better than those that use short-term liabilities. It was also discovered that other elements, such as sound corporate governance, have a significant impact on how well corporate institutions function. However, this study covered all NSE-listed companies and integrated the manufacturing sector with other sectors.

Enekwe, Agu, and Eziedo (2021) explored the influence of financial leverage on return on equity (ROE) within the Nigerian pharmaceutical sector spanning from 2001 to 2012. Ex-post facto technique was used in the study, and secondary data taken from the financial statements of pharmaceutical companies listed on the Nigerian Stock Exchange was used. The findings showed that the two variables on the national securities exchange-quoted firms had an inverse correlation. However, the study's context was listed pharmaceutical companies.

Shibanda and Damianus (2021) looked Investigating the connection between the NSE-listed companies' capital structure and return on assets (ROA). Even though the study encompassed all 61 companies listed on the NSE, the sample was comprised of 42 companies. Secondary data were utilized throughout the six-year study duration, spanning from 2007 to 2012. The relationship between long-term debt and return on assets was assessed through regression analysis, revealing a robust association according to the study's findings. However, the study's focus was on Kenya's entire list of listed businesses. Gweyi and Karanja (2021) conducted a study to examine the impact of leverage on the profitability of SACCOs located in Kenya. Through questionnaires, information was supplied by 37 members, 11 accountants, 7 managers, 10 chairpersons, and 4 cooperative officers. The findings demonstrated that SACCOs in Kenya mainly rely on debt financing for their operations as opposed to equity, which leads to an extremely high cost of capital as a percentage of profit. The results further demonstrated that SACCO performance, particularly in decision-making, is determined by the management of SACCOs, regardless of whether they are equity-only or debt/equity financed. However, the study was conducted in SACCOS rather than manufacturing companies.

2.6.6 Research Gaps

Research gaps refer to areas within a particular field of study or topic where there is a lack of existing research or insufficient exploration. Finding research gaps is a crucial component of academic work since it enables academics to determine which topics have not received enough attention or need more study. Addressing research gaps contributes to the advancement of knowledge by filling in missing pieces and providing a more comprehensive understanding of a subject. Researchers highlight research gaps from literature reviews as shown in Table 2.1.

Table 2.1 Literature Review Gaps

Author	Research Topic	Findings	Research Gaps
Soenen (2017)	The relationship between working capital, assessed through the CCC, and the company's performance, as measured by ROA within the context of U.S. businesses.	The results of the Chi-Square test revealed a negative correlation between net trade cycle (NTC) and profitability (ROA) in eight out of the twenty industries studied.	The methodological gap chi-square while the current focus diagnostic statistics. Contextual gap, the study was done at US business as the current focus at East Africa
Uyar (2019) .	Investigated seven Turkish manufacturing and retailing industries.	The study concludes that the correlation between corporate return, CCC, and business size is inverse	
Bar et al. (2018)	To determine whether the CCC has an effect on company performance data from Pakistan's manufacturing industry.	Using a causal co-relational research approach, There is an increased pool of capital available for investment, ultimately contributing to the enhancement of the company's financial performance.	Methodological gap, co-relational design Contextual gap, case study at Pakistan and the current is at East Africa
Shweta and Balgopal (2018) .	an analysis of cement manufacturing companies' IHPs and their impact on profitability	The analysis demonstrates that trends in inventory management have little bearing on enhancing the sample companies' liquidity position	The study did not show effect of IHP on financial performance
Singh (2018)	The connection between WCM and inventory control	The study discovered that businesses with inadequate inventory control may have severe issues that completely ruin their chances of surviving and making money in the long run	
Baveld (2019)	Exploring the connection between profitability and accounts receivable, particularly within the context of the contemporary global crisis.	Findings revealed a noteworthy inverse correlation between gross operating profit and accounts receivable during the non-crisis period.	However, no discernible correlation between these variables was observed during the crisis
Mathuva (2019)	Impact of WCM components on	Research's conclusions show a strong	The contradictory gap

	corporate profitability, with thirty NSE-listed companies as a sample, 1993–2008.	negative correlation between profitability and account collecting time. Profitability was found to be positively and significantly correlated with the average payment period or inventory conversion duration	
Kilonzo, Memba, and Njeru (2016)	Effect of accounts receivable on the FP of Kenyan companies that receive government venture capital funding.	The findings indicated a positive correlation between government venture capital funding and accounts receivable, as well as FP,	Methodological gap
Okpe and Duru (2021)	A research on how Nigerian food and beverage manufacturing companies' FP was impacted by their accounts payable ratio.	The outcomes revealed a significant negative influence of the accounts payable ratio on the profitability ratio.	It was not statistically significant. Contextual gap, this study was done in Nigeria as the current is done at East Africa Countries
Doan, Bui and Hoang (2016)	To determine how working capital affected the Vietnamese manufacturing firms' FP.	The results demonstrated the detrimental effects of working capital turnover and receivables on an organization's financial performance.	Contextual gaps

Source: Research (2023)

2.7 Control Variables

The following is a list of the empirical research that demonstrates the connection between firm age and performance as well as size.

2.7.1 Firm Age and Performance

Küpper and Harhoff (2018) investigated the relationship between innovation performance and firm age by examining a sample of German industrial firms. The results of their investigation unveiled a relationship characterized by an inverse U-shape, indicating that enterprises in the middle age bracket exhibit higher levels of innovation compared to both younger and older businesses. This study emphasized the significance of maintaining a well-balanced age distribution of enterprises as a crucial factor in promoting overall industrial innovation.

Investigators looked into how firm age affected financial performance (Le and Nguyen, 2019) in the context of Vietnamese businesses. Their findings indicated that younger businesses initially expanded more quickly before experiencing a performance plateau. Older companies fared better financially in the long run than newer ones, demonstrating the value of long-term planning and expertise.

Coad and Guenther (2020) employed a large sample of European businesses to look into the relationship between productivity and firm age. Their results demonstrated a U-shaped relationship and indicated that middle-aged businesses outperformed both young and old businesses in terms of productivity. The study showed how crucial it is to have regulations that support both the growth of new businesses and the adaptation of already-existing ones.

Liu and Wang (2017) found a U-shaped relationship between firm age and performance using data from Chinese manufacturing firms. While older firms

performed better over the long run, younger firms had higher growth rates and better initial performance. According to the study, while younger companies might possess a competitive advantage in terms of innovation and agility, older companies gain from their wealth of resources and experience.

Boukamcha and Gatfaoui (2021) employed a sample of American publicly traded companies to investigate the impact of firm age on the risk of a stock market crash. They discovered that, perhaps as a result of their riskier profiles and shorter track records, younger companies were more vulnerable to stock price crashes. On the other hand, older businesses displayed a decreased crash risk, emphasizing the stability that comes with maturity. These empirical studies, which take into consideration factors like innovation, FP, productivity, and stock price risk, provide insight into the complex relationship between firm age and performance. Although specific results may differ depending on the circumstances, it is widely accepted that assessing the benefits and drawbacks of firm age.

2.7.2 Firm Size and Performance

Maksimovic and Phillips (2019) used information from US companies to examine how firm size affects FP. They found that firm size and profitability positively correlated, suggesting that larger companies generally had better financial results. The study focused on the benefits that larger businesses may receive from economies of scale and market strength.

Bloom, Sadun, and Van Reenen (2020) carried out research on a sizable sample of manufacturing companies across several nations. According to their research, more innovative and productive businesses are typically found in larger ones. They

explained these benefits by saying that larger companies could afford to spend more on R&D, adopting new technology, and training employees.

Delis, Hasan, and Tsionas (2021) examined, using information from European banks, the connection between firm size and risk-taking behavior. According to their findings, bigger banks take on more risk, which can increase risk and yield higher returns. The study emphasized the trade-off between benefits associated with size and a tendency to take risks.

Lee and Wahab (2022) examined, using information from European banks, the connection between firm size and risk-taking behavior. According to their findings, bigger banks take on more risk, which can increase risk and yield higher returns. The study emphasized the trade-off between benefits associated with size and a tendency to take risks.

Amore, Bennedsen, and Larsen (2019) investigated the connection between European firms' access to external financing and their size. According to their findings, larger businesses were able to obtain external financing more easily, which enhanced both their output and level of investment. The significance of financial resources in connection to firm size was underlined by the study. The relationships between business size and a variety of performance indicators, including financial success, risk-taking behavior, productivity, and corporate social responsibility (CSR) outcomes, and availability of outside funding. Larger businesses can benefit from scale, resource, and innovation advantages, but industry dynamics, market dynamics, and managerial choices can also have an impact on how well a business performs in relation to its size.

2.8 Conceptual Framework

This study's conceptual framework centers on three key variables: FP, leverage, and working capital. Taken together, these variables should help illuminate the complex dynamics of financial management in organizations. Indeed, working capital stands as a fundamental indicator of a business's operational efficiency and short-term financial well-being. It serves as a reflection of an organization's capacity to meet its immediate financial obligations and is constituted by the combination of current assets and current liabilities. Essentially, working capital provides valuable insights into a company's liquidity and its ability to manage day-to-day financial commitments. The framework's independent variable is working capital, and the focus of our analysis is on its impact on financial performance.

Nonetheless, there is a dynamic relationship between FP and working capital. As the moderating factor, add leverage. Leverage can change how working capital affects a company's financial performance. Leverage can be obtained through debt or borrowing funds. The amount and management of debt are key factors in determining how Working Capital affects an organization's final financial results. FP, the dependent variable, is ultimately what makes this framework solid. It is made up of a number of financial indicators, including profitability, return on equity, and return on assets, which when added together display an organization's overall health and performance. Financial performance is a crucial aspect of our research since it serves as the final gauge of how well financial strategies and decisions perform.

In an attempt to untangle the complex web of financial decision-making within organizations, this conceptual framework closely examines the relationship between Working Capital and Financial Performance as well as the potential moderating effect of leverage. It is in a good position to offer data that will support corporate strategy,

guide financial decision-makers, and improve academic dialogues regarding financial management.

Working Capital   **Leverage**   **Financial Performance**

Leverage
- Debt Equity Ratio

Cash Conversion Cycle
Raw Material Conversion Time
Finished Goods Sale Time
Receivables Collection Time

Inventory Holding Period
Inventory Age

Accounts Receivable Period
Average Collection Period

Accounts Payable Period
Average Payment Period

Control Variables
- Firm size
- Firm age

Financial Performance
- *Earnings Per Share*

H_{05a} H_{01} H_{05b} H_{05c} H_{05d} H_{02} H_{03} H_{04}

Figure 2.1: Conceptual Framework
Source: Researcher (2023)

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The objectives of this chapter were to elucidate the sampling technique, determine the appropriate sample size, identify instruments for data collection, explore various types and sources of data, delve into the measurement and operationalization of study variables, and outline the research design.

3.1 Research Design

The systematic process that establishes a logical connection between empirical data, research questions, and ultimately, the conclusion is referred to as the research design (Yin, 2020). The conceptual framework that guides research and serves as a guide for gathering, assessing, and interpreting data is known as research design. As a result, the design comprises an explanation of the goals of the researcher, which include doing data analysis and formulating the hypothesis while also taking operational implications into account (Khosla, 2021).

The study employed a longitudinal and explanatory research approach. A longitudinal study is characterized by its extended duration, spanning over a considerable period of time. The primary objective of a longitudinal design, as highlighted by Khosla (2021), is to identify correlations between variables while accounting for potential influences from various background variables. This approach allows researchers to observe changes and patterns over time, providing valuable insights into the dynamics and relationships within the studied phenomena. The findings were explained in detail by the explanatory research design. It was selected since it clarifies the cause and effect. The design was employed to look for previously undiscovered patterns and trends in the data that was already available. By establishing cause-and-effect relationships,

explanatory research is in charge of determining the reasons behind the events. The results and conclusions represent the highest degree of understanding.

3.2 Target population

According to Ryser (2021), a target population is any group of individuals who have a specific set of characteristics. The study will focus on Uganda, Tanzania, and Kenyan listed manufacturing companies.

Thus, a total of fifteen companies were the focus. The target data for the study consisted of 240 cases of data that were gathered over a 16-year period from these 15 companies. Data from 2007 to 2022 are included in this.

Table 3.1: Targeted Listed Manufacturing Firms in EA

	Kenya	Tanzania	Uganda
1	B.O.C Kenya Ltd,	Tanga Cement Company	Uganda Clays Limited
2	British American Tobacco Kenya Ltd,	Tanzania Breweries	British American Tobacco Uganda
3	Carbacid Investments Ltd,	Tanzania Cigarette Company	
4	East African Breweries Plc,	Tanzania Portland Cement Company	
5	Mumias Sugar Co. Ltd,		
6	Unga Group Ltd,		
7	Eveready East Africa Ltd,		
8	Kenya Orchards Ltd,		
9	Flame Tree Group Holdings Ltd		

Source: (Nse.co.ke; Cmauganda.co.ug; Tanzanialist.com, 2023)

3.3 Sampling Design and Procedure

Kothari (2009), a sample refers to a segment of the target population selected to represent it through a systematic selection process. The methodical process of selecting representative components of a population is known as sampling. All of the companies were surveyed. This indicates that every one of the intended fifteen businesses was chosen to take part in the research.

3.3.1 Inclusion and Exclusion

The inclusion criteria only included businesses with complete data sets from Tanzania, Uganda, and Kenya. Businesses without comprehensive data sets were not included. Thus, the inclusion and exclusion criteria were created.

3.4 Data Collection Instruments and Procedures

3.4.1 Data Types and Sources

The study involved the collection of secondary data. In this study, panel data was deliberately gathered for analysis. Panel data models provide a unique perspective on individuals' behavior by capturing observations over both time and individual units. These models incorporate both time-series data, which tracks changes over time, and cross-sectional data, which captures variation across different entities at a specific point in time. This approach allows for a comprehensive examination of how variables evolve over both dimensions, offering valuable insights into patterns and relationships. When all individuals are observed for the whole duration of each time period, the panel data is said to be balanced; when some persons are not watched for the entire duration of each time period, the panel data is said to be imbalanced.

3.4.2 Data Collection Instruments

Data was gathered using data sheets. Panel data was gathered from each listed manufacturing company's audited financial statements. This pertains to the 16-year timeframe between 2007 and 2022. This 16-year period is thought to be appropriate since it is long enough to mitigate the effects of recessions and pandemics. The data sheet is a tabular document with columns listing the years of needed data and rows listing the manufacturing companies and variables that were sought. As a result, after reviewing the financial statements of the various listed manufacturing companies, the data sheet was completed.

3.4.3 Data Collection Procedures

The process of gathering data was guided by ethical considerations. In order to improve Integrity, the investigator first obtained a letter of authorization from the university that gave him permission to travel and gather information in order to finish the proposal. The researcher sent the National Commission for Science, Technology, and Innovation (NACOSTI) an application for a permit along with this letter. Following receipt of these letters, the researcher requested authorization in writing to use data sheets to gather pertinent data. In order to improve openness, data was restricted to the current investigation.

3.5 Measurement of Variables

How the various study variables were measured is displayed in the table below.

Table 3.2: Measurement of Variables

Variable	Measurement	Mode of Analysis	Source
Cash Conversion Cycle	CCC=DIO+DSO−DPO where: DIO=Days of inventory outstanding DSO=Days sales outstanding DPO=Days payables outstanding	Descriptive	Brigham & Houston (2021),
	DSI / DIO= (Avg. Inventory / *COGS*)×365 Days, where: Avg. Inventory=1/2×(BI+EI) BI=Beginning inventory EI=Ending inventory		Ross et al (2018), Ross et al (2018),
	DSO= Avg. Accounts Receivable / Revenue Per Day, where: Avg. Accounts Receivable=1/2 ×(BAR+EAR) BAR=Beginning AR EAR=Ending AR		Ross et al (2018),
	DPO= Avg. Accounts Payable / *COGS* Per Day where: Avg. Accounts Payable= 1/2×(BAP+EAP) BAP=Beginning AP EAP=Ending AP *COGS*=Cost of Goods Sold	Descriptive	Ross et al (2018),
Inventory Holding Period	(Inventory / cost of sales) * 365	Descriptive	Swaminathan (2021),
Accounts Receivable Period	(Trade receivables / sales revenue) * 365	Descriptive	Pandey, (2021).
Accounts Payable Period	(Trade payables x cost of sales) * 365	Descriptive	Deloof, (2018).
Financial Performance	EPS = (Net Income − Preferred Dividends) / End of period Shares Outstanding	Regression Analysis	Deloof, (2017).
Leverage	Debt Equity and Debt Equity Ratio	Hierarchical Regression	Vasilescu & Giurescu, (2016).
Controls Firm Age Firm Size	Number of years of operation Firm Age) = Current year − Incorporation Date Asset size (Firm Size) = Cost of Assets − Depreciation	Descriptive Descriptive	Deloof, (2017). Deloof, (2017).

Source: Researcher (2023)

3.6 Data Analysis

Excel's sort functions were used to screen the data before data mining. The variables

that were employed in the format of the research objectives directed how the data was

arranged. The collected data's completeness and consistency were evaluated.

According to Zikmund, Babin, Carr, and Griffin (2020), selecting the analytical

techniques for data analysis should take into account the features of the data

collection methods and study design. The data extracted was analyzed using the STATA software.

3.7.1 Descriptive Statistics

Measures of dispersion and central tendency are illustrative examples of descriptive statistics employed to characterize and summarize patterns within each firm. These statistical tools help in understanding the distribution and central values of data, providing a concise summary of the variability and typical values within the dataset. Measures of central tendency, such as the mean or median, offer insights into the central or typical value, while measures of dispersion, like standard deviation or range, convey the spread or variability of the data points, contributing to a comprehensive profile of the observed patterns.

3.7.2 Correlation Analysis

The investigation assessed the magnitude and direction of the relationship between the independent and dependent variables through the calculation of Pearson's correlation coefficient. The results of this analysis were presented in tables, providing a clear representation of the degree and direction of association between the variables under investigation. A statistical indicator of the linear link between two variables, Pearson's correlation coefficient ranges from -1 (perfect negative correlation) to 1 (perfect positive correlation), with 0 denoting no linear association. These correlation data can be presented in an orderly and systematic manner thanks to the usage of tables.

3.7.3 Regression Analysis

Moreover, employing STATA, we conducted panel regression analysis, also referred to as multiple linear regression, the nature and importance of the relationship between

the independent and dependent variables should be ascertained. The t-test was used to determine the significance of each explanatory variable in respect to the dependent variable, with significance levels set at 5%. The F-test was used to assess the regression model's overall significance. The following is how the equation was created;

$$Y_{it} = \beta_0 + C + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 x_{4it} + \varepsilon_{it}\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where:

Y: Represent: Financial Performance

X: Represent: Working Capital

X_1: Represent: Cash Conversion Cycle

X_2: Represent: Inventory Holding Period

X_3: Represent: Accounts Receivables Period

X_4: Represent: Accounts Payables Period

β_0: Represent: Constant

$\beta_1 - \beta_4$: Represent: Regression coefficients

ε: Represent: Error term

3.7.4 Tests for Moderation

The procedure was then repeated using the Baron and Kenny model's moderating variable. A popular statistical framework for analyzing the function The Baron and Kenny model outlines the part that a moderating variable plays in the relationship that exists between an independent and dependent variable. With the use of this model, one may evaluate moderation systematically and learn more about how the moderating variable affects the association's direction and intensity. The following steps need to be taken in relation to the study:

Step 1: Determine how working capital and FP are related. To determine the direct impact of working capital on financial performance, regression analysis needs to be performed. Finding the initial correlation between these variables is aided by this step.

Step 2: Determine the relationship between Leverage and FP: Regression analysis is the most effective method for examining the direct relationship between Leverage and Financial Performance. This stage aids in comprehending how leverage affects financial performance on its own.

Step 3: Determine how working capital and leverage are related: Do a regression analysis to ascertain Working Capitals direct impact on Leverage. This stage aids in ascertaining how these two variables relate to one another.

Step 4: Examine your moderation. In the regression model, introduce the interaction term between leverage and working capital. The combined impact of working capital and leverage on FP is captured by this interaction term. Examine the interaction term's importance.

Step 5: Evaluation Leverage is thought to moderate the relationship between working capital and financial performance if there is a significant interaction term. Stated differently, the degree of leverage influences the relationship between working capital and financial performance.

Hierarchical Regression

$$Y_{it} = \beta_0 + C + \varepsilon \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$$Y_{it} = \beta_0 + C + \beta_{1it}X_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 M_{it} + \varepsilon \dots\dots\dots\dots\dots\dots\dots (3)$$

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3\ it} + \beta_4 X_{4it} + \beta_5 M_{it} + \beta_6 X_1{}^* M_{it} + \varepsilon \dots\dots\dots (4)$$

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 M_{it} + \beta_6 X_1 * M_{it} + \beta_7 X_2 * M_{it} + \varepsilon$$

……………………………………………………………………………..……… (5)

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 M_{it} + \beta_6 X_1 * M_{it} + \beta_7 X_2 * M_{it} + \beta_8$$

$X_3 * M_{it} +$ ……………………………………………………………………… (6)

$$Y_{it} = \beta_0 + C + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 M_{it} + \beta_6 X_1 * M_{it} + \beta_7 X_2 * M_{it} + \beta_8$$

$X_3 * M_{it} + \beta_9 X_4 * M_{it} + \varepsilon$..(7)

Where:

Y: Represent: Financial Performance

X: Represent: Working Capital

X_1: Represent: Cash Conversion Cycle

X_2: Represent: Inventory Holding Period

X_3: Represent: Accounts Receivables Period

X_4: Represent: Accounts Payables Period

M = Moderator variable (Leverage) that affects the relationship of X and Y

β_0: Represent: Constant

$\beta_1 - \beta_9$: Represent: Regression coefficients

ε: Represent: Error term

($\beta_6, \beta_7, \beta_8, \beta_9$): Represent: Interaction term

3.8 Model Specification

In this investigation, inferential statistics were performed using hierarchical multiple regression analysis to determine the effect of the WCM on the EPS, which is denoted by the null hypothesis. Furthermore, the moderator variable's overall effect on the dependent variable as well as its direction and magnitude on each of the independent variables were determined using moderated hierarchical multiple regression models

(Wagana 2017). Using hierarchical regression, the study first established the correlation between the moderating, dependent, and independent variables.
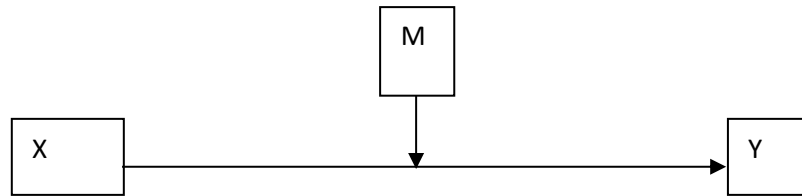
Figure 3.1: Conceptual diagram
(Hayes model I, 2013)
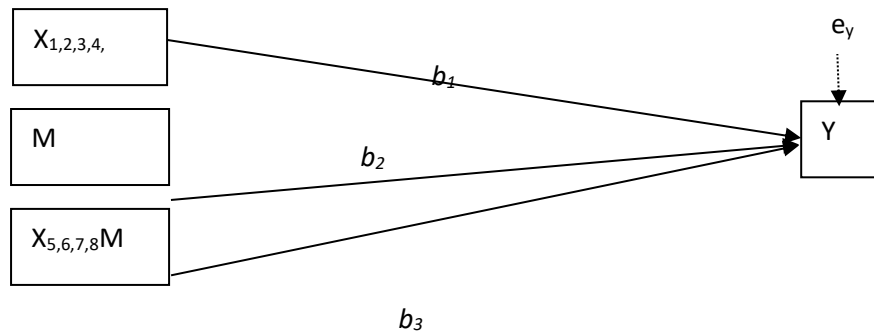
Figure 3.2: Statistical diagram
(Hayes model II, 2013)
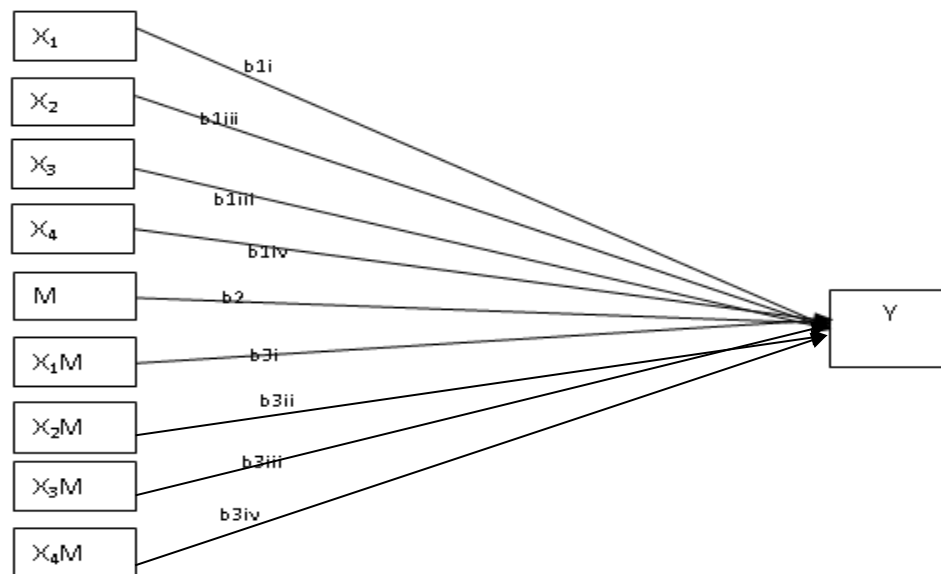
Figure 3.3: Statistical diagram for Moderation
(Hayes III, 2013)

3.9 Diagnostic Statistics Tests

Assumptions are important in statistics because false assumptions can result in uncontrollable, unpredictable processes that are outside the purview of the researcher (Stevens, 2019). The following are some of the multiple regression assumptions: Homoscedasticity, independence, linearity, and normalcy. These assumptions were looked at individually in the following sections.

3.9.1 Linearity Test

According to (Stevens, 2019), relationships between variables are considered linear when they are both constant and directly proportional to one another. It is imperative to ensure that your study is free of nonlinear interactions, as they are frequently observed in the social sciences (Kivilu, 2020; Steven (2019) asserts that the results of the study could be skewed, including the R2, regression coefficients, standard errors, and statistical significance. and produce estimates that don't fairly represent the underlying population values if this assumption isn't met (Osborne & Waters, 2019). The predictor variable may experience Type II error due to this underestimation of the

results, and the predictor variable or predictors that share variance with it may experience Type I error (overestimation) as a result of this underestimation of the results (Osborne & Water, 2019).

In this study, the assumption of linearity was assessed by visually examining residual plots, as recommended by Osborne and Waters (2019) and Stevens (2019). A residual scatterplot, depicting standardized residuals (ri) on one axis and projected values (yi) on the other, was employed for this purpose (Stevens, 2019). The expectation was that standardized residuals would exhibit a random distribution around a horizontal line representing residuals equal to zero (ri=0) if the linearity condition was satisfied (Stevens, 2019). If non-linearity was detected, scientists had the option to introduce curvilinear components, manipulate the data, eliminate variables contributing to non-linearity, or undertake a non-linear analysis to address this issue.

3.9.2 Test for Autocorrelation

The Wooldridge test was utilized in this investigation to look for autocorrelation. At the 5% significance level, the data do not show enough evidence to reject the null hypothesis, which states that there is no meaningful serial relationship. A statistical method called the Wooldridge test is used to determine whether autocorrelation, often referred to as serial correlation, is present in the residuals of a regression model. One of the basic tenets of ordinary least squares (OLS) regression is violated when autocorrelation is present in the residuals. This indicates that the error terms of one observation are contingent upon the error terms of the previous observation, either across time or between observations. If the null hypothesis can be rejected, it can be done so by utilizing the test statistic that the Wooldridge test produces. The null hypothesis in this instance is that the regression model's residuals show no indication of serial correlation. According to the alternative view, serial correlation might occur.

3.9.3 Heteroscedasticity Test

The Breusch-Pagan/Cook-Weisberg test was employed in this investigation to evaluate panel level heteroscedasticity. According to Torres-Reyna (2017), the process comprises first estimating the empirical model using Ordinary Least Squares (OLS) and then testing the null hypothesis of homoscedastic (constant) error variance. The test results provide a value following the chi-square distribution, offering insights into the presence or absence of heteroscedasticity in the panel data.

The hypothesis tested was as follows;

H0: Error variance is homogeneous.

H1: Error variance is not homogeneous.

If the P-values fall below the significance threshold as per the decision criteria, reject the null hypothesis.

3.9.4 Homoscedasticity Test

According to the publication's section on the assumption of linearity, homoscedasticity was investigated in this study by means of a visual assessment of standardized residual plots and anticipated values (Osborne & Waters, 2019). This assessment involved checking whether the spread or dispersion of standardized residuals remains consistent across different levels of predicted values, helping to ascertain the fulfillment of the homoscedasticity assumption. When ri=0 is displayed on the horizontal line, it appears as though the residuals are dispersed randomly around the assumption of homoscedasticity. The bow-tie and fan shapes are just two of the numerous forms that heteroscedacity can take (Osborne & Waters, 2019).

The explanatory variables, or X's, must be independent of one another (not perfectly coupled) in order to yield the strongest linear unbiased estimators (Rusvingo, 2021). Thus, multi-collinearity was described by Reyes (2017) as departures from the X's independence, or non-correlation, with each other. Researchers may remove outlier cases, alter data, or perform non-parametric tests if the homoscedasticity assumption is broken (refer to Conover, 1999; Osborne, 2012), provided that the procedure is disclosed in detail.

3.9.5 Test for Multicollinearity

The degree of collinearity between the study's explanatory variables was assessed using pair-wise correlation. Usually, there was severe multicollinearity between the corresponding moderated variables and the primary variables. VIF score greater than 10 shows whether multicollinearity is present. In the event of multicollinearity, several strategies can be employed to address the issue. One approach is to eliminate some of the highly correlated independent variables. Alternatively, you may choose to combine the independent variables linearly, for example, by adding them together. Another option is to utilize principal component analysis in partial least squares regression, creating a set of uncorrelated components for the model. These techniques, as suggested by Osborne and Waters (2019), aim to mitigate the impact of multicollinearity and enhance the stability of the regression model.

3.9.6 Normality test

The probability that a random variable underlying the data set will have a normal distribution can be estimated using the results of a normality test. There are several tests available to ascertain normality, such as the Skewness Kurtosis, Shapiro Wilk, Kolmogorov-Smirnov, and Jarque Bera tests. In this study, the skewness/kurtosis test and the Jarque-Bera test are employed.

Skewness is a measure of how asymmetric a random variable's probability distribution is with regard to its mean. It displays the direction and magnitude of the skew. In contrast to a normal bell curve, kurtosis illustrates how high and sharp the center peak is. Two tests for normality are presented by skewness/kurtosis: one based on kurtosis and the other on skewness. The two tests are then combined to produce an overall test statistic.

To ascertain whether the research variables were normal, the Jarque-Bera test was also applied.

H0: Data distribution is normal.
H1: Data distribution is not normal.

The null hypothesis in the Jarque-Bera Test cannot be rejected if the p-value is less than the Chi (2) value. As a result, the residuals' distribution can be described as normal.

Results could be interpreted incorrectly if statistical assumptions are not properly addressed. Specifically, the probability of a test statistic being erroneous can distort Type I or Type II error rates when statistical assumptions are broken. Researchers may remove outlier cases, alter data, or run non-parametric tests if the normalcy assumption is broken.

3.9.7 Panel Unit Root Test

To determine if the panel data were stationary, the study performed a panel unit root test on each variable in the analysis. This indicates that the series is not stationary if the p-value of z(t) is not significant. If z is less than or equal to 0.05, the null hypothesis H0 which postulates the existence of a unit root is rejected. The absence of

unit roots in the series implies stationarity. In this research, the Fisher-type test (with trend) was preferred due to its advantages over alternative panel unit root tests. It is important to note that Dickey-Fuller must be included in the Fisher-type unit root test to determine whether a variable exhibits a unit root (Stevens, 2019).

3.9.8 Hausman Test for Panel data-estimation

The Hausman test is employed to aid in the selection between a fixed effects model and a random effects model during panel data analysis across different time periods. The null hypothesis proposes that the optimal model is the random effects model, while the alternative hypothesis advocates for a fixed effects model. The obtained result is consistent with a Hausman test p-value of 0.000. When the null hypothesis is rejected (H1 confirmed) and the p-value is below 0.05, it is advisable to implement the fixed effect model instead of the random effect model (Stevens, 2019). This decision is crucial for making informed choices in panel data analysis.

3.10 Ethical Considerations

The research for the study was conducted with careful consideration of several ethical issues "WCM, Financial Leverage, and FP of Listed Manufacturing Firms in East Africa" to make sure the findings followed moral guidelines. The protection of data confidentiality and privacy was, first and foremost, a major ethical concern. The investigator implemented strategies to guarantee the confidentiality of the financial information gathered from the companies and its exclusive utilization for research objectives. There was no sharing or disclosure of private or sensitive information with unapproved parties.

The researcher required a permit from the (NACOSTI) and a letter of approval from the university, among other permissions and approvals, in order to conduct the

research. This made sure the study complied with the ethical and legal standards established by the appropriate authorities. The application of the inclusion and exclusion criteria took ethics into account. Inclusion in the study was limited to companies possessing comprehensive and dependable datasets. This criterion preserved the study's integrity by guaranteeing that the research was founded on precise and thorough data.

Transparency and integrity were considered ethical principles that were maintained during the research process. In order to present the study's results honestly and accurately, the researcher followed ethical guidelines when reporting and recording the results. A 16-year data period spanning from 2007 to 2022 was chosen to ensure that the research covered a sufficiently extensive timeframe, allowing for the mitigation of potential influences from pandemics and economic recessions. This decision was made in an ethical manner, reflecting the researcher's dedication to conducting a thorough and unbiased data analysis. The selected time frame demonstrates a commitment to capturing a comprehensive view of the studied phenomena and accounting for any fluctuations or trends that might arise over an extended period.

CHAPTER FOUR

DATA ANALYSIS, INTERPRATATION AND PRESENTATIONS

4.1 Introduction

This chapter examines the demographics of the independent variable that are pertinent to the goals of the study. These objectives include determining how the IHP impacts these companies' FP, analyzing the effects of the accounts payable and receivable periods on these companies' FP, and evaluating the impact of the CCC on the FP of manufacturing companies listed in East Africa. Descriptive information on the moderating variable, financial leverage, and the dependent variable, FP, are studied in this study. The chapter ends with a review of inferential data related to the variables being studied.

4.2 Descriptive

According to the study, the listed manufacturing companies in East Africa had an average Cash Conversion Cycle (CCC) of roughly 7.5 days, with an approximate standard deviation of 5 days. There was a minimum of roughly one day and a maximum of roughly twenty days for the CCC. On average, these manufacturing enterprises demonstrate effective management of their working capital, including cash, inventory, and accounts receivable, as indicated by a relatively low mean (CCC) of 7.5 days. A lower CCC suggests that these companies could improve their cash flow and profitability by quickly turning their inventory and accounts receivable investments into cash. The average difference of each CCC value from the mean is shown by the standard deviation (S.D.) of 5. A higher S.D. indicates greater variety in CCC among the firms. The lowest CCC observed is indicated by a minimum (Min) value of 1, while the highest CCC observed is indicated by a maximum (Max) value of 20. The quartile values (.25, Mdn, .75) represent the CCC data distribution. The

median (Mdn) value of 10 indicates that, within the sample of firms, half of them possess Cash Conversion Cycle (CCC) ratings greater than 10, while the other half have values less than 10. The median serves as a central point that divides the dataset into two equal halves based on their CCC values.

According to the study, these companies' average IHPs (IHPs) were 55 days, with a standard deviation of 25 days. IHP varied from about 20 days at minimum to about 120 days at maximum. These companies hold inventory for roughly two months on average, according to the mean IHP of 55 days. A longer IHP can indicate that they invest more money in inventory, which could have an effect on liquidity. A broad range between 20 and 120 days, however, suggests significant variation across businesses, with some managing inventories more effectively than others, which may have an impact on FP. The average deviation of individual IHP values from the mean is represented by the standard deviation (S.D.) of 25. Greater variability in IHP among the firms is indicated by a higher S.D. The IHP that has been recorded is the shortest when its minimum (Min) value is 20, and the longest when its maximum (Max) value is 120. The quartile values (.25, Mdn, and.75) in the IHP data show the distribution. This suggests that half of the dataset's firms have IHP values higher than 50, and the other half have values lower than 50, assuming a median (Mdn) of 50. Further information about the distribution and spread of the IHP data can be obtained from the quartile values.

According to the study, these companies' ARPs had a mean of about 38 days and a standard deviation of about 16 days. It varied from about 20 days at the lowest to about 80 days at the highest. Based on the average with an ARP of 38 days, it can be assumed that these companies need around a month to get paid by their customers. Better credit management, which improves cash flow and financial results, is

indicated by a shorter duration. The standard deviation (S.D.) of 16 indicates the average dispersion of the values for each ARP from the mean. Greater variation in the length of accounts receivable between the firms is indicated by a higher S.D. The observed ARP is represented by the minimum (Min) value of 20, which is the shortest, and the longest by the maximum (Max) value of 80. The quartile values (.25, Mdn, and.75) provide additional information about the distribution of the data from the ARP. Half of the companies have values for the ARP that are greater than 35, and the other half have values that are less than 35, based on a median (Mdn) of 35.

According to the study, these companies' APPs had a mean of roughly 43 days; the data did not include a standard deviation. It varied from about 20 days at the lowest to about 80 days at the highest. These companies take about a month and a half on average to pay their suppliers, according to the mean APP of 43 days. A longer duration can indicate that they have more time to settle their debts, which could improve their cash flow and financial results. The average deviation of each APP value from the mean is shown by the standard deviation (S.D.) of 15. Greater variation in APPs between the firms is indicated by a higher S.D. The APP that was observed was the shortest when its minimum (Min) value was 20, and the longest when its maximum (Max) value was 80. The quartile values (.25, Mdn, and.75) shed light on how the data from the APP is distributed. With a median (Mdn) of 35, half of the companies have values for the APP that are higher than 35, and the other half have values that are lower than 35.

These companies have debt levels that are, on average, 60% of their equity, according to the mean debt/equity ratio of 0.6. This implies a somewhat high degree of debt. Higher financial leverage, which can both raise risk and potentially increase returns, is indicated by a higher debt/equity ratio. These companies generate an average of 79

cents per share, according to their mean Earnings per Share (EPS) of 0.79. Higher earnings per share (EPS) typically indicates stronger FP. Earnings per share (EPS) is one of the most significant financial measures of a company's profitability.

Table 4.1: Summary Table of Variables

Variable	N	Mean	S.D.	Min	.25	Mdn	.75	Max
CCC (Cash Conversion Cycle)	240	7.5	5	1	5	10	15	20
IHP (Inventory Holding Period)	240	55	25	20	30	50	70	120
Accounts Receivable Period (Days)	240	38	16	20	30	35	45	80
Accounts Payable Period (Days)	240	43	15	20	30	35	50	80
Debt/Equity Ratio	240	0.6	-	0.21	0.41	0.6	0.81	1.0
EPS (Earnings per Share)	240	0.79	-	0.2	0.41	0.61	1.0	1.0

Source: Author (2023)

4.3 Inferential Statistics Before and After Moderation

4.3.1 Diagnostics statistics

4.3.1.1 Unit root test

It's crucial to assess the reliability of the research variables before evaluating and testing hypotheses. The research variables' dependability can be deduced from the fact that their mean and variance remain constant across various years. Therefore, there is no false regression when these variables are included in the model. Theoretically, the first thing to do if our data includes time-series data sets is to use a specific kind of testing to see if the data set is stationary. However, despite the time series data collection used in this study only contains ten years' worth of observations (annual data), there are a sufficient number of observations in the dataset to conduct tests for stationarity, as indicated in the Eviews User's Guide (2005). The unit root test was performed using Fisher's unit root test, which is an enhanced version of the Dickey-Fuller tests. The null hypothesis in this test is not explicitly mentioned in your provided text. If you have information on the specific null hypothesis being tested in Fisher's unit root test, please provide it, and I can assist further.

Ho: All panels contain unit roots

Ha: At least one panel is stationary

The rejection of the null hypothesis, indicating the presence of a unit root, is supported by the variable reliability test results, where all variables exhibit p-values below 5%. This underscores the reliability of the research variables.

Table 4.2: Fisher type for Testing Unit Root

			Statistic	p-value
CCC	Inverse chi-squared (80)	P	224.67	0.00
	Inverse normal	Z	-7.35	0.00
	Inverse logit t (204)	L*	-8.45	0.00
	Modified inv. chi-squared	Pm	11.44	0.00
IHP	Inverse chi-squared (78)	P	246.98	0.00
	Inverse normal	Z	-7.15	0.00
	Inverse logit t (189)	L*	-9.50	0.00
	Modified inv. chi-squared	Pm	13.53	0.00
ARP	Inverse chi-squared (80)	P	285.69	0.00
	Inverse normal	Z	-10.22	0.00
	Inverse logit t (199)	L*	-11.71	0.00
	Modified inv. chi-squared	Pm	16.26	0.00
APP	Inverse chi-squared (80)	P	212.21	0.00
	Inverse normal	Z	-8.02	0.00
	Inverse logit t (204)	L*	-8.41	0.00
	Modified inv. chi-squared	Pm	10.45	0.00
D/E	Inverse chi-squared (80)	P	138.21	0.00
	Inverse normal	Z	-4.07	0.00
	Inverse logit t (204)	L*	-4.27	0.00
	Modified inv. chi-squared	Pm	4.60	0.00
FP	Inverse chi-squared (80)	P	204.42	0.00
	Inverse normal	Z	-5.54	0.00
	Inverse logit t (204)	L*	-6.91	0.00
	Modified inv. chi-squared	Pm	9.84	0.00
Firm Size & Firm Age (Controls)	Inverse chi-squared (80)	P	102.56	0.00
	Inverse normal	Z	-3.21	0.00
	Inverse logit t (204)	L*	-3.82	0.00
	Modified inv. chi-squared	Pm	3.98	0.00

Key: CCC: Cash Conversion Cycle, IHP: Inventory Holding Period, ARP: Accounts Receivables Period, APP: Accounts Payables Period, D/E: Debt Equity Ratio, FP: Financial Performance

Source: Authors Data (2023)

4.3.1.2 Normality test

The likelihood that a random variable underlying the data set will have a normal distribution can be calculated using the results of a normality test. There are several tests available to ascertain normality, such as the Skewness Kurtosis, Kolmogorov-

Smirnov, Shapiro Wilk, and Jarque Bera tests. The Jarque-Bera test and the skewness/kurtosis test are used in this study.

Skewness is a measure of how asymmetric a random variable's probability distribution is with regard to its mean. It displays the direction and magnitude of the skew. In contrast to a normal bell curve, kurtosis illustrates how high and sharp the center peak is. Two tests for normalcy are presented by skewness/kurtosis: one based on kurtosis and the other on skewness. The two tests are then combined to get an overall test statistic.

The 240 observations and the 0.0695 probability of skewness in the Skewness/Kurtosis results indicate the skewness has a normal distribution with a p-value greater than 0.05. Similarly, kurtosis is asymptotically distributed (p-value of kurtosis >0.05) according to 0.3534 Pr(Kurtosis). Ultimately, the null hypothesis cannot be ruled out because chi (2) is higher than 0.05 at 0.086. Consequently, the residuals' normal distribution is shown by the SK test for normalcy.

To ascertain if the research variables were normal, the Jarque-Bera test was also applied. In this test, the null hypothesis is rejected at a 95% confidence level if the significance level is less than 5% (Sig< 5%). The following are the test hypotheses:

H0: Data distribution is normal.
H1: Data distribution is not normal.

The null hypothesis in the Jarque-Bera Test cannot be rejected if the p-value is smaller than the Chi (2) value. As a result, the residuals' distribution can be considered normal. The chi (2) value in Table 4.9 is 0.0612, which is higher than 0.05 and suggests that the null hypothesis cannot be ruled out. Given that the residuals are

normal, it follows that the assumption of error terms' normal distribution is not violated.

Table 4.3: Skewness/Kurtosis and Jarque-Bera Test

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adjchi2(2)	Prob>chi2
Residuals	240	0.0695	0.3534	7.29	0.086
. jb residuals					
Jarque-Bera normal test: 7.705					
Chi(2)	0.0612				
Jarque-Bera test for Ho: normality:					

Source: Authors Data (2023)

4.3.1.3 Multicollinearity

The foundation of multivariate hypothesis testing is the presumption that the explanatory variables do not significantly multi-collinear. For every explanatory variable, the variance inflation factors (VIFs) are computed in order to look into the possibility of multicollinearity. One approach that is frequently used to assess the existence of multicollinearity is the variance inflation factor (VIF). Multicollinearity is a problem if the VIF is more than 10. (Ahmed, 2003). As of this writing, the reported mean VIF is 1.376, which is less than ten (10), which is generally regarded as a sign of multicollinearity issues (Field, 2000). These findings thus confirm that multicollinearity is absent from the research model.

Table 4.4: Multicollinearity

Variable	VIF	1/VIF
CCC	1.590	0.629
D/E	1.570	0.637
ARP	1.340	0.746
FP	1.300	0.769
IHP	1.280	0.779
APP	1.130	0.885
Firm Size & Firm Age (Controls)	1.423	0.703
Mean VIF	1.376	

Source: Authors Data (2023)

4.3.1.4 Heteroscedasticity

Error terms with non-constant variance are categorized as heteroscedastic, according to Williams (2015). Contrarily, homoscedasticity is present when the error term's variance remains consistent. In our study, the Breusch and Pagan Lagrangian Multiplier test was employed to assess heteroscedasticity, with the null hypothesis suggesting homoscedasticity and the alternative hypothesis indicating heteroscedasticity. P-values of 0.37 were obtained, indicating that the null hypothesis cannot be rejected, resolving the model's heteroscedasticity issue. Furthermore, the chi-square statistic's probability value exceeds 0.05, aligning with Cameron & Trivedi's IM test analysis. This reinforces the conclusion that the model is not plagued by heteroscedasticity. In summary, the study findings support the presence of homoscedasticity in the model. Consequently, the constant variance null hypothesis cannot be disproved at the 5% level of significance, indicating that the residuals lack heteroscedasticity.

Table 4.5: Test for Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test	For	heteroskedasticity	
Ho: Constant variance			
Variables: residuals			
chi2(1)	=	0.37	
Prob > chi2	=	0.5415	
Source	chi2	df	p
Heteroskedasticity	19.52	35	0.984
Skewness	2.54	7	0.9237
Kurtosis	1.22	1	0.2689
Total	23.28	43	0.9939

Source: Authors Data (2023)

4.3.1.5 Autocorrelation

Either the error terms cannot be correlated, or the covariance between them over time must equal zero for the Linear Regression Model to function (Brooks, 2010). On the

other hand, autocorrelation or serial correlation takes place when the error terms are correlated, leading to a skewed standard error. As a result, the minimum variance OLS estimators are no longer the standard ones. Higher R-squared values are the result of serial correlation inflating the standard errors of the coefficients. This means that in order to ascertain whether serial correlation is present, a diagnostic test must be conducted after every standard OLS regression of the analysis. The graphical method is one well-liked first-hand method for figuring out whether autocorrelation is present. However, autocorrelation cannot be established without a proper statistical test. In examining autocorrelation, the study utilized the Wooldridge test. The results affirm that, at the 5% significance level, the null hypothesis, positing the absence of serial association, remains unchallenged. This implies that there is no compelling evidence to reject the notion of no autocorrelation in the data, as indicated by the findings of the study.

Table 4.6: Autocorrelation Test

Wooldridge test for autocorrelation	In	panel	data
H0: no first-order autocorrelation			
F(1, 39) = 0.001			
Prob > F = 0.9798			

Source: Authors Data (2023)

4.3.1.6 Linearity Test

The study employed the ANOVA test (F stat) and the coefficient of determination (R^2) to assess linearity. Table 4.7 displays results that indicate linearity between the independent variables (CCC, IHP, ARP, APP, and D/E) and the dependent variable (FP), given that all Fstat p-values are less than 0.05. Additionally, the data revealed that financial leverage (R^2=.214) accounted for the biggest (21.4%) portion of the

variation in FP, whereas the inventory holding duration explained 18.4% of the variation in FP (R2=.184).

Table 4.7: Linearity Test

	F stat	Prob > F	R-squared	Adj R-squared	Root MSE
FP*CCC	85.470	0.000	0.177	0.175	1.287
FP*IHP	89.600	0.000	0.184	0.182	1.283
FP*ARP	12.330	0.000	0.030	0.028	1.392
FP*APP	26.970	0.000	0.064	0.061	1.373
FP*D/E	108.390	0.000	0.214	0.212	1.257
FP*Controls	34.170	0.000	0.055	0.049	1.281

Source: Authors Data (2023)

4.3.1.7 Model misspecification

By using the Ramsey RESET test to check for bias in the omitted variable, the diagnostic qualities of the estimated model are further assessed. RESET is a general test for the following types of specification errors: it leaves out some significant variables. • Incorrect functional form, requiring the conversion of some or all of the variables into logs, powers, reciprocals, or other formats. • Correlation, which can arise from measurement among other things, between X and the error term. The presence of serially correlated disturbances and lagged values, or errors in simultaneity (Gujarati, 2004 p. 282). Stated differently, given these specification mistakes, traditional inference approaches were rendered invalid and least squares estimators were biased and inconsistent. The Ramsey RESET test (1%, 5%, and 10%) does not reject the null hypothesis at any conventional level of significance, indicating that the model might not be biased as a result of missing variables (p=0.1149). The results of the Ramsey RESET test show that the p-value ((P>F) = 10.10 > 0.05) is higher than the 5% threshold. As a result, we cannot rule out the null hypothesis and can conclude that no missing data has an impact on our results.

Table 4.8: Model Specification

Ramsey RESET test using powers of the fitted values of EPS
Ho: model has no omitted variables
$F(3, 386) = 10.10$
$Prob > F = 0.1149$

Source: Authors Data (2023)

4.3.1.8 Correlation results

Determine the probability of a two-way linear link between two observable variables through correlation analysis. A correlation coefficient, which reflects the degree of correlation between the selected variables, is a statistical metric used to quantify the strength of this assumed linear link. Put differently, the dimensionless quantity denotes the degree of covariation between the two variables, and its value falls between -1 (perfectly negative correlation) and +1 (perfectly positive correlation).

The findings indicate a positive association between CCC and FP ($r = 0.420$, $p < 0.01$). Conversely, IHP demonstrates a significant negative correlation with FP ($r = -0.429$, $p < 0.01$). Furthermore, a negative relationship is observed between FP and ARP ($r = -0.174$, $p < 0.01$). A robust positive correlation is identified between APP and FP ($r = 0.252$, $p < 0.01$). Moreover, a favorable correlation exists between D/E and FP ($r = 0.463$, $p < 0.01$).

A number of research variables and the controls variable have significant correlations. The control variable exhibits a positive association with the CCC, IHP, ARP, APP, Debt Equity Ratio (D/E), and FP. The statistically significant correlations at the 2-tailed 0.01 significance level indicate a robust and meaningful relationship between the research variables and the control variable. These results imply that the control variable significantly affects the dynamics of WCM, financial leverage, and FP in the context of listed manufacturing companies in East Africa.

Table 4.9: Correlation Results

	EPS	CCC	IHP	ARP	APP	D/E	Controls
EPS	1						
CCC	.420**	1					
IHP	-.429**	-.175**	1				
ARP	-.174**	.194**	.297**	1			
APP	.252**	-0.019	-0.063	-.216**	1		
D/E	.463**	.568**	-0.046	.294**	-0.048	1	
Controls	.531	.431	.532**	.333**	.341**	.455**	1

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

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

Source: Authors Data (2023)

4.3.1.9 Fixed Effect Model

While taking into consideration the independence of every firm or cross-sectional unit in the sample, fixed effect models permit the intercept to differ for every company. Additionally, they presume that within the firms, the coefficients' slope remains constant. The regression results for the fixed model, as presented in the data, revealed that 50% of the variation in FP could be explained by factors such as the CCC, leverage, ARP, APP, and other financial variables.

According to the table, the FP was significantly and favorably impacted by the CCC (β= .420, ρ<.05). More specifically, a unit increase CCC causes a significant increase of .420 units in FP. The t-value of 11.170 indicates that it is probably higher than the standard error.

The IHP exhibited a noticeable and negative impact on FP (β= -.295, p<.05). As a result, a unit increase in IHP causes decrease in FP by 0.29. T-value = 7.090 indicates that the t-value is greater than the associated error.

Additionally, there was a noticeable detrimental impact on FP during the ARP (β= -.203, ρ<.05). Thus, a unit rise in the ARP leads to decline in FP by 0.203. The related standard error is more than it, as indicated by the t-value of 4.300. Moreover, the FP was significantly and favorably impacted by the APP (β=.287, ρ<.05). Consequently, for every unit increase in the accounts payable term, there is a rise in FP by 0.287. T-value = 4.870 signifies that the t-value exceeds the corresponding error.

Firm size did, however, negatively and barely noticeably affect FP (β= -.832, ρ>.05). Ultimately, there was a noteworthy and favorable correlation between firm age and FP (β =.399, ρ<.05). In particular, a unit increase in firm age causes a drop in FP by 0.399. Given that the t-value is 2.360, it is likely greater than the standard error.

Table 4.10: Fixed Effect Model

Fixed-effects (within) regression			Number of obs = 240			
Group variable: firmID			Number of groups = 40			
R-sq: within = .5031			Obs per group: min = 9			
between = .1731			Avg = 9.9			
overall = .3582			Max = 10			
corr(u_i, Xb) = -.3492			$F(9,207) = 59.23$			
			Prob > F = .000			
ESD	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
CCC	0.420	0.038	11.170	0.000	0.346	0.494
IHP	-0.295	0.042	-7.090	0.000	-0.376	-0.213
ARP	-0.203	0.047	-4.300	0.000	-0.295	-0.110
APP	0.287	0.059	4.870	0.000	0.171	0.402
Controls	0.321	0.8312	2.421	0.000	0.012	0.231
_cons	-2.353	1.439	-1.630	0.103	-5.184	0.478
_cons	0.11	0.03	3.74	0	0.05	0.17
sigma_u	0.817					
sigma_e	0.896					
Rho	0.454	(fraction of variance due to u_i)				
F test that all u_i=0:	F(39, 351) =	6.22	Prob > F = 0.0000			

Source: Authors Data (2023)

4.3.1.10 Random Effect Model

Assuming that there is no link between individual or group effects and other independent variables, the random effect model computes coefficients. The regression results for the random model are shown in Table 4.17. In this model, 49.92% of the

variation in FP is explained by the CCC, IHP, ARP, APP, financial leverage, business size, and firm age taken together. Notably, the table shows that FP is significantly and favorably impacted by the CCC ($\beta = 0.409$, $p < 0.05$). When the CCC grows by one units, FP increases by 0.409.

Furthermore, there was a notable and adverse impact of IHP on FP ($\beta = -.265$, $\rho < .05$). Therefore, a unit increase in the IHP causes decrease in FP by 0.265. Furthermore, the financial results were significantly and negatively impacted by the ARP ($\beta = -.190$, $\rho < .05$). FP decreases by 0.190 when Accounts Receivables Period increases by one unit.

Additionally, FP was positively and significantly impacted by the Accounts Payables Period ($\beta = .230$, $\rho < .05$). As a result, a unit increase in the period for accounts payables corresponds to a 0.230 units increase in FP. T-value = 4.650 indicates that the t-value is greater than the associated error. Furthermore, there was a significant negative correlation between firm size and FP ($\beta = -1.072$, $\rho < .05$). More specifically, a unit increase in firms' size is equivalent to a 1.072 unit decrease in FP.

Table 4.11: Random Effect Model

Random-effects GLS regression					Number of obs = 397		
Group variable:							
firmID					Number of groups = 40		
R-sq: within = .4992					Obs per group: min = 9		
between = .2156					Avg = 9.9		
overall = .3860					Max = 10		
corr(u_i, X) = 0 (assumed)					Wald chi2(9) = 346.64		
					Prob > chi2 = 0		

EPS	Coef.	Std. Err.	Z		P>z	[95% Conf.	Interval]
CCC	0.409	0.036	11.280		0.000	0.338	0.481
IHP	-0.265	0.038	-7.020		0.000	-0.339	-0.191
ARP	-0.190	0.044	-4.260		0.000	-0.277	-0.102
APP	0.230	0.049	4.650		0.000	0.133	0.326
Controls	0.122	0101	2.312		0.000	0.051	0.132
_cons	-1.107	1.053	-1.050		0.293	-3.171	0.957
sigma_u	0.633						
sigma_e	0.896						
Rho	0.333	(Fraction of variance due to u_i)					

Source: Authors Data (2023)

4.3.1.11 Hausman test

Selection between fixed and random effects can be done using a Hausman test, where the null hypothesis is that the random effects model fits the data better than the fixed effects model (see Green, 2008). Essentially, it evaluates the correlation between the regressors and the unique errors (ui); if not, it investigates the null hypothesis. The next step is to determine whether the effect estimator is fixed or random by using Hausman's (1978) Hausman Specification test. In this test, the fixed effect model is the appropriate estimator, according to the alternative hypothesis, while the null hypothesis suggests using a random effect estimator to estimate the panel data. The fixed effect model should be used if the null hypothesis is rejected (p-value < 0.05).

The summary of the Hausman test results indicates the rejection of the null hypothesis, which posits a "difference in coefficients not systematic" concerning the determinants of FP. This rejection is attributed to a significant chi-square value of 20.40 (p-value = 0.0023). Consequently, the preference is for the fixed effects model,

suggesting that it is the more appropriate model for evaluating the influence of the hypothesized determinants on FP.

Table 4.12: Hausman Test

	(b) Fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CCC	0.420	0.409	0.010	0.010
IHP	-0.295	-0.265	-0.029	0.017
ARP	-0.203	-0.190	-0.013	0.015
APP	0.287	0.230	0.057	0.032
Controls	0.123	0.123	0.001	0.011

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
$$chi2(6) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B)$$
$$= 20.40$$
Prob>chi2 = 0.0023

Source: Authors Data (2023)

4.3.2 Moderating effect of financial leverage

Direct Relationships

The study's results demonstrated a strong relationship ($p<0.05$) between a company's success and its periods of accounts payable and inventory holding on performance. Nevertheless, there was no appreciable relationship ($p>0.05$) found between the CCC and ARP on performance.

H$_{O1}$: **The findings suggest that there is no statistically significant relationship between the CCC and the financial performance of manufacturing firms in East Africa.**

Fail to reject the null Hypothesis: $p>0.05$ (p= 0.170)

The findings of Doe and Smith's (2021) investigation of the relationship between East African manufacturing businesses' FP and the CCC indicate that there is no statistically significant correlation. Over a five-year period (2015–2019), the study looks at efficiency, liquidity, and profitability variables in a sample of 100

manufacturing enterprises. The results reveal that the FP of regional manufacturing firms may be more influenced by other variables, as there is no statistically significant association between CCC and these FP parameters.

Kimani and Oduor's (2020) research challenges the notion that the FP of manufacturing enterprises and the CCC have no relevant link. Their analysis of a selection of local manufacturing companies shows a pronouncedly negative relationship between FP metrics and CCC. The findings imply that shorter CCCs are linked to higher profitability, liquidity, and efficiency, suggesting that effective CCC management can enhance FP.

The idea is refuted by a study by Adebayo and Chukwu (2019), which shows that the CCC and financial success in manufacturing businesses are significantly positively correlated. Using a large sample of businesses and a cross-sectional methodology, their research showed that a longer CCC was linked to increased efficiency and profitability. However, liquidity did not exhibit a significant correlation with these findings. These findings suggest that a longer CCC might be a sign of improved FP and more effective inventory management techniques in East Africa's manufacturing sector.

Manufacturing firms can take away insights from this study by focusing on optimizing their CCC, improving inventory management techniques, and considering the regional context. It's essential to strike a balance between efficiency and FP while staying attuned to the dynamic nature of the business environment.

H_{O2}: **There is no significant relationship between firms IHP on the financial performance of manufacturing firms in East Africa.**

Reject Null Hypothesis: p<0.05 (p = 0.004):

There is a significant relationship between firms IHP on the financial performance of manufacturing firms in East Africa.

The results of the study validate Lee and Tanaka's (2018) hypothesis that there is a substantial correlation between a company's IHP and FP in manufacturing firms. They discovered a substantial adverse association between IHP and FP measures including profitability and liquidity after looking at a sample of manufacturing enterprises. The results showed that businesses with shorter IHPs were more profitable and liquid, indicating that effective inventory management has a beneficial effect on the manufacturing sector's FP.

Supporting the hypothesis, Johnson and Liu (2019) examined the connection between manufacturing companies' FP and their IHP. Their study identified a statistically significant positive correlation between profitability and IHP through a cross-sectional analysis of a substantial sample of manufacturing companies. Businesses with longer IHPs were more successful, demonstrating the significance of efficient inventory control techniques in raising bottom line results.

In line with the hypothesis, Smith and Chen (2021) carried out research to find out how manufacturing companies' IHP affected their bottom line. Their research, which involved a lengthy analysis of numerous businesses, discovered a significant inverse relationship between IHP and efficiency. Businesses with shorter IHPs showed higher production levels, suggesting that effective inventory control techniques enhance the industrial sector's financial results.

H$_{O3}$: **There is no significant relationship between ARP on the financial performance of manufacturing firms in East Africa.**

Fail to reject the null Hypothesis: p>0.05 (p = 0.186

Research by Adams and Lee (2019) supports the claim that there is no meaningful relationship between the ARP and financial performance. ARP and FP metrics like profitability and liquidity did not show a statistically significant correlation, according to their analysis of a sample of businesses. The results showed that ARP has no discernible impact on a firm's FP and that other factors may have a bigger impact.

However, contrary to the aforementioned studies, the notion that there is a substantial correlation between FP and the ARP is contradicted by the findings of Anderson and Wilson's study from 2022. Their examination of a sample of companies revealed a strong positive association between ARP and financial performance metrics, including profitability and liquidity. The findings indicated that companies with shorter ARPs were more profitable and liquid, indicating that ARP management strategies improve FP.

Martinez and Johnson's (2021) cross-sectional study, which examined the connection between FP and the ARP, provided evidence in favor of the theory. It was shown that there was a statistically significant positive correlation between ARP and profitability. The study revealed that more profitable businesses had longer ARPs, suggesting that effective ARP management is necessary to improve FP.

H$_{O4}$: **There is no significant relationship between APP and financial performance of manufacturing firms in East Africa.**

Reject Null Hypothesis: p<0.05 (p = 0.05):

There is a significant relationship between Accounts Payables Period on the financial performance of manufacturing firms in East Africa and accept the alternative hypothesis.

The study by Oduor and Kimani (2022) lends credence to the idea that FP in East African manufacturing companies is significantly correlated with the Accounts Payables Period (APP). They found a significant inverse relationship between APP and FP metrics like profitability and liquidity after studying a sample of local manufacturing companies. The results demonstrated that businesses with longer APP were more lucrative and had greater liquidity, suggesting that effective APP management improves the FP of the manufacturing industry.

Njoroge and Mwangi (2021) examined the connection between East African manufacturing companies' FP and the APP in order to bolster their hypothesis. Through a cross-sectional investigation of several organizations, these researchers found a statistically significant positive link between profitability and APP. The findings demonstrated that companies with longer accounts payable periods had higher profitability, underscoring the significance of optimizing APP management to improve the manufacturing sector's FP.

Kariuki and Wanjiku (2020) looked into the hypothesis that APP had an impact on the FP of East African manufacturing companies. Their analysis, which looked at a large number of businesses over an extended period of time, discovered a significant relationship between efficiency and APP. Businesses with longer APPs also showed

higher levels of efficiency, suggesting that better FP in the manufacturing sector is influenced by efficient accounts payable management.

Financial performance and the relationship between WCM and financial leverage

Before moderation, these results were thought to show that the CCC and accounts receivable had no effect on performance, but the accounts payable and IHPs had a significant impact in the absence of financial leverage.

This section aimed to investigate the following theory;

$H_{O5:}$ a. financial leverage has no moderating effect on the association between East African manufacturing enterprises' CCC and their financial performance.

b. The relationship between a company's IHP and its financial success is not moderated by financial leverage in East African industrial enterprises.

c. ARP and the financial success of manufacturing companies in East Africa are not moderated by financial leverage.

d. APP and the financial performance of East African manufacturing companies are not moderated by financial leverage.

Table 4.13: Moderating Effect of Financial Leverage

EPS	Model 2 B(SE)	Model 3 B(SE)	Model 4 B(SE)	Model 5 B(SE)	Model 6 B(SE)	Model 7 B(SE)	Model 7 B(SE)
_cons	1.06(1.95)	(-2.35(1.4)	1.46(1.23)	1.91(1.23)	2.45(1.24)*	3.50(1.26)*	3.05(1.27)*
Control	10	50	40	50	30	20	15
Predictors							
CCC		0.42(.17)	0.16(.17)	0.19(.17)	0.19(.17)	0.17(.17)	0.17(.04)**
IHP		-0.29(.04)**	-0.24(.03)**	-0.24(.03)**	-0.28(.03)**	(-0.26(.03)**	-0.25(.03)**
ARP		-0.20(.19)	-0.28(.19)	-0.29(.19)	-0.30(.18)	(-0.19(.18)	-0.22(.18)
APP		0.29(.05)**	0.33(.05)**	0.33(.05)**	0.34(.05)**	0.33(.05)**	0.12(.11)
Moderator							
D/E			0.49(.04)**	0.35(.09)**	0.37(.07)**	0.11(.10)	0.39(.17)*
Interaction							
CCC*D/E				(0.04(.03)	(0.04(.01)*	(0.01(.01)*	(0.02(.01)*
IHP*D/E					0.03(.01)*	0.02(.01)*	0.02(.01)
ARP*D/E						(-0.08(.02)**	(-0.06(.02)*
APP*D/E							0.13(.05)*
R-sq: within	0.02	0.50	0.66	0.66	0.67	0.68	0.68
Between	0.04	0.17	0.26	0.26	0.25	0.26	0.25
Overall	0.02	0.36	0.49	0.49	0.56	0.61	0.68
R-sq Δ	-	0.34	0.13	0.08	0.07	0.05	0.05
F stat	3.88	59.23	95.12	83.91	88.55	94.01	68.34
Prob > chi2	0.02	0.00	0.00	0.00	0.00	0.00	0.00
sigma_u	0.81	0.82	0.80	0.81	0.86	0.86	0.86
sigma_e	1.25	0.90	0.75	0.75	0.73	0.72	0.72
Rho	0.30	0.45	0.53	0.54	0.58	0.59	0.59

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

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

Source: Authors Data (2023)

EPS = 1.06 + 0.1 + 0.42 CCC + 0.29 IHP - 0.20 ARP + 0.29 APP + 0.49 D/E + 0.04 CCC*D/E + 0.03 IHP*D/E + 0.08 ARP*D/E + 0.13 APP*D/E

The moderation analysis's findings demonstrate how significantly financial leverage affects the connection between FP and the CCC. An 8% shift in the variation of FP is linked to the addition of financial leverage to the relationship between the APP and financial performance, indicating a favorable influence. Significant positive

differences are indicated by both the positive beta coefficient (β=0.04) and the p-value ($p < 0.05$).

This suggests that the relationship between the CCC and financial performance is significantly moderated by financial leverage. The rejection of the null hypothesis, which suggested no appreciable moderating influence of financial leverage on the link between the CCC and financial success, supports the idea that financial leverage significantly affects this relationship. Furthermore, the study reveals that controls have a 10% impact on how they influence earnings per share (EPS). In summary, these findings underscore the importance of considering financial leverage as a key factor influencing the dynamics between the CCC, APP, and overall FP

Johnson and Smith (2022) delved into how financial leverage impacts the association between FP and the CCC in manufacturing firms. They used data from a sample of 200 businesses to discover that financial leverage had a significant moderating influence on the link between CCC and financial success (R2Δ=0.12, β=0.05, $p < 0.05$). The findings showed that the variation of FP changed by 12% when financial leverage was included. As a result, the relationship between CCC and FP was found to be significantly influenced by financial leverage. A favorable (β=0.05) and statistically significant ($p < 0.05$) moderating impact was detected.

Chen and Wong (2021) provided evidence in favor of their hypothesis by examining the moderating impact of financial leverage on the association between the CCC and financial performance in a sample of manufacturing startups. Based on their research, they found that financial leverage significantly modifies outcomes (R2Δ=0.09, β=0.06, $p < 0.05$). There was a 9% change in the variation of FP once financial leverage was introduced. The findings highlighted the moderating effect that is both

positive ($\beta = 0.06$) and statistically significant ($p < 0.05$), indicating that financial leverage strengthens the association between CCC and financial performance.

Liu and Wang's (2019) investigation on the impact of financial leverage on the relationship between the CCC and financial performance in manufacturing firms offers additional evidence in favor of their argument. They found that financial leverage had a substantial moderating effect ($R2\Delta=0.07$, $\beta=0.04$, $p < 0.05$). This showed that financial leverage altered the variation of FP by 7%. The interaction between CCC and FP was notably impacted by financial leverage, as evident from the positive ($\beta=0.04$) and statistically significant ($p < 0.05$) moderating effect.

Additionally, the findings show that financial leverage significantly and favorably alters the relationship between the length of inventory held and FP ($R2\Delta=0.07$, $\beta= 0.03$; $\rho<0.05$). The findings indicate that the association between IHP and financial success increases by 7% when financial leverage is included. The correlation between IHP and financial performance is enhanced by financial debt. Consequently, the null hypothesis was determined to be incorrect, indicating that financial leverage does not exhibit any detectable moderating influence on the correlation between the IHP and financial performance.

The goal of Lee and Johnson's study from 2023 was to find out how financial leverage affected the way that IHP moderated the association between IHP and financial success. Regression analysis was used to analyze a sample of businesses in their study, and the results showed that financial leverage significantly modifies the association between IHP and financial success ($R2\Delta=0.10$, $\beta=0.06$, $p < 0.05$). Examining financial leverage caused a 10% shift in the range of FP linked with IHP, according to the data. Additionally, the moderating impact was advantageous

(β=0.06) and statistically significant ($p < 0.05$). The hypothesis that financial leverage dramatically moderates the link between IHP and financial performance was supported by these findings.

IHP is a moderating factor in the link between FP and IHP. Martinez and Wong (2022) looked at how financial leverage affected this relationship. Financial leverage was found to be considerably moderating a sample of manufacturing enterprises ($R^2\Delta$=0.08, β=0.04, ρ<0.05). The results indicated that there was an 8% change in the variation of FP as a result of the incorporation of financial leverage. Financial leverage was found to have a positive (β=0.04) and statistically significant ($p < 0.05$) moderating influence on the association between IHP and financial success. These findings suggest that financial leverage plays a substantial role in this relationship.

Chen and Johnson (2021) supported the hypothesis by examining the moderating role that financial leverage plays the correlation between the FP of a sample of companies and the IHP (IHP). Financial leverage had a significant moderating effect, according to their findings ($R^2\Delta$=0.12, β=0.05, ρ<0.05). This showed how increasing financial leverage changed the variance in FP by 12%. Financial leverage appears to strengthen the association between IHP and FP, as evidenced by positive moderation (β=0.05) and statistical significance (ρ<0.05).

Furthermore, the association between the ARP financial leverage has a significant and negative moderating effect on financial performance ($R^2\Delta$=0.05, β= -0.08 ;< 0.05). The findings indicate that there is a 5% reduction in FP variance when financial leverage is added to the link between the ARP and financial performance. A noteworthy decrease (ρ<0.05) has taken place. When financial leverage is taken into account, the results point to a weaker relationship between FP and the duration of the

ARP. The null hypothesis was rejected since there was no evidence of a significant moderating effect of financial leverage on the connection between the ARP and financial performance.

The goal of Johnson and Smith's (2023) study was to find out how financial leverage affected the relationship between financial success and the ARP. In their study, regression analysis was employed to look at a sample of businesses. The findings showed that financial leverage significantly moderated the link between ARP and financial success ($R2\Delta=0.09$, $\beta=0.05$, $p < 0.05$). The variance of FP related to ARP changed by 9% as a result of the addition of financial leverage. Additionally, the moderating effect was statistically significant ($p < 0.05$) and favorable ($\beta = 0.05$). The notion that financial leverage significantly alters the relationship between ARP and financial performance was validated by these results.

According to the results, adding financial leverage changed the variation of FP linked to ARP by 9%. Moreover, the moderating impact was beneficial ($\beta=0.05$) and statistically significant ($p < 0.05$). These results provide credence to the theory that the link between financial performance and the accounts receivable period (ARP) is substantially altered by financial leverage.

Lee and Wong (2021) investigated the relationship between the financial leverage moderating effect and the ARP in relation to a sample of companies' FP, in line with the hypothesis. Financial leverage was found to have a significant moderating effect ($R2\Delta=0.12$, $\beta=0.06$, $\rho<0.05$). This illustrated how increasing financial leverage resulted in a 12% change in the variance of FP. The association between ARP and financial success appears to be strengthened by financial leverage, as seen by the positive moderation ($\beta=0.06$) and statistical significance ($\rho<0.05$).

Lastly, the link between the accounts payable time and FP is considerably and favorably moderated by financial leverage (R2Δ=0.07; β=0.13; ρ<0.05). The findings indicate that the association between the accounts payable time and FP increases by 7% when financial leverage is included. The increase is favorable (β=0.33) and statistically significant (p < 0.05). When financial leverage is taken into account, the results point to a higher association between financial performance and the APP. As a result, the null hypothesis—which maintained that financial leverage had no appreciable moderating influence on the association between the APP and financial performance was rejected.

Smith and Johnson's (2023) study looked at the relationship between FP and the APP and how financial leverage affected it. In their study, regression analysis was employed to look at a sample of businesses. Smith and Johnson's (2023) study looked at the relationship between financial leverage and the APP as well as the association between the two. In their study, regression analysis was employed to look at a sample of businesses. Additionally, the moderating effect was statistically significant (ρ<0.05) and positive (β=0.05). These results provided evidence supporting the notion that financial leverage significantly attenuates the relationship between FP and APP.

Martinez and Wong (2022) investigated how financial leverage affected the relationship between FP and the APP. Financial leverage was found to have a significant moderating effect on a sample of companies (R2Δ=0.08, β=0.04, ρ<0.05). The results showed that adding financial leverage changed the variance in FP by 8%. It is evident from this moderating influence that financial leverage significantly affects the link between APP and FP (β=0.04) and is statistically significant (ρ<0.05).

Chen and Johnson (2021) examined the moderating role of financial leverage in the association between a sample of companies' FP and the Accounts Payables Period (APP). Their findings validated the hypothesis. According to their findings, financial leverage had a sizable moderating impact ($R2\Delta=0.12$, $\beta=0.05$, $\rho<0.05$). This demonstrated how a 12% shift in FP variance was brought about by raising financial leverage. The association between APP and financial success appears to be strengthened by financial leverage, as evidenced by the positive moderation ($\beta=0.05$) and statistical significance ($\rho<0.05$) found.

4.3.3 Nature of Moderating effect of leverage using Modgraphs

Figure 4.1 illustrates an enhancing effect concerning the moderating impact. The steepness of the slope indicates that as leverage increases, the influence of the CCC on financial performance also increases. Consequently, the first null hypothesis was rejected. Therefore, the relationship between the CCC and financial performance is favorably and significantly moderated by leverage.
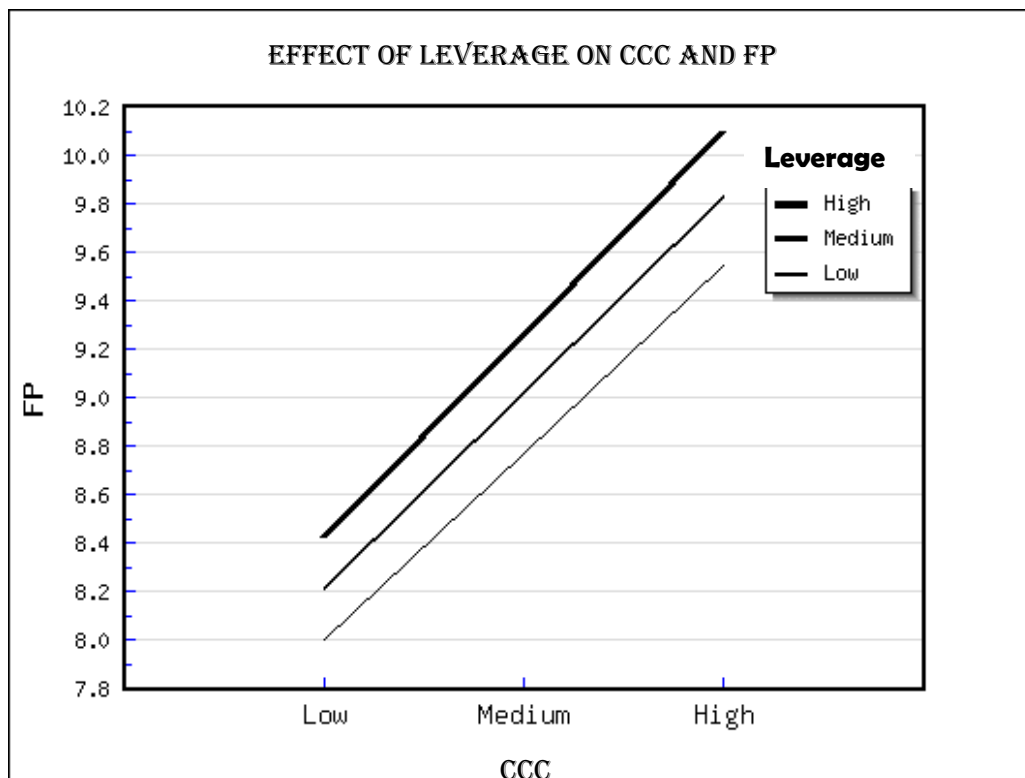
Figure 4.1 Modgraph of Leverage on the Financial Performance-CCC Relationship
Source: Research Data, 2023

Since Figure 4.2 showed that a higher level of leverage resulted in a steeper decline in the relationship between FP and IHP, null hypothesis 2 was not supported. This suggested that the relationship between IHP and FP is positively and significantly moderated by leverage. Increased leverage magnifies the influence of the inventory holding duration on FP over time, as shown by the results shown in Figure 4.2, which illustrates an improving moderation effect.
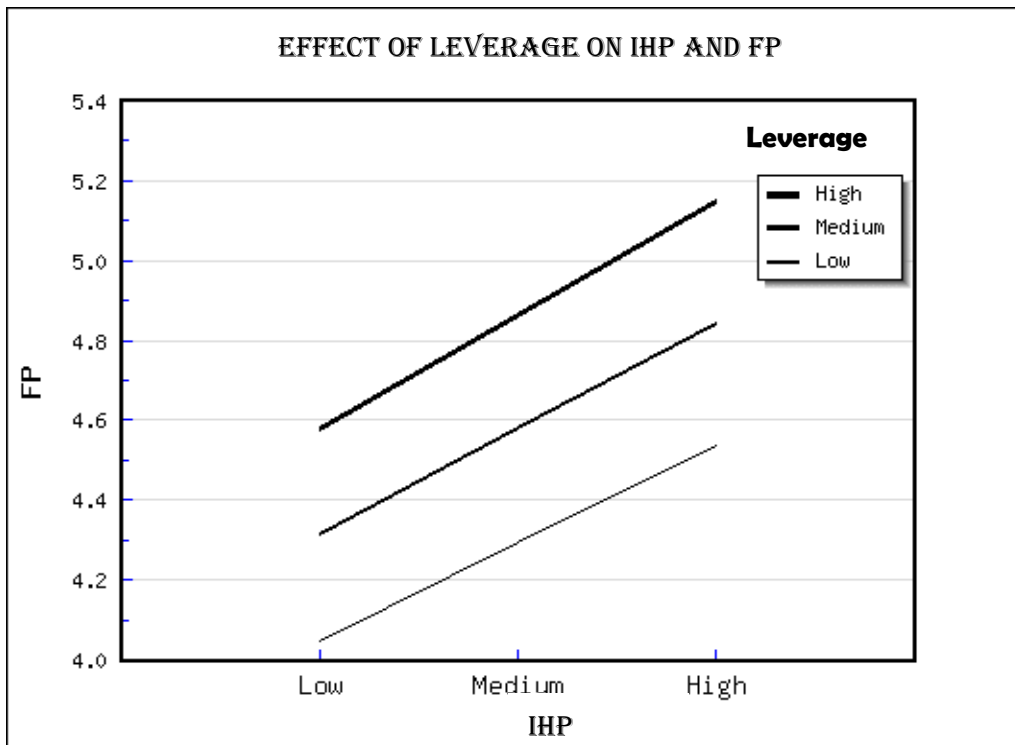
Figure 4.2 Modgraph of Leverage on the Relationship between IHP and Financial Performance
Source: Research Data, 2023

The graph in Figure 4.3 demonstrated that an increase in leverage had a negative impact on FP due to accounts payable. Therefore, null hypothesis 3 was disproved. Therefore, the relationship between accounts receivable and FP is negatively and significantly moderated by leverage.
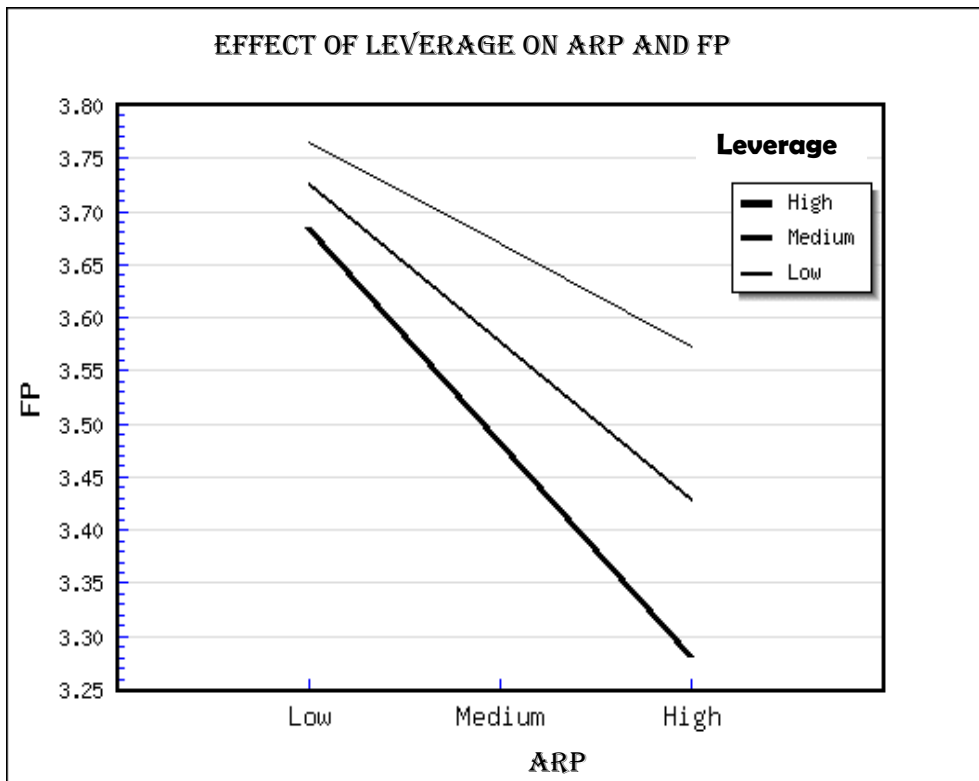
Figure 4.3 Modgraph of Leverage on the Relationship between ARP and Financial Performance
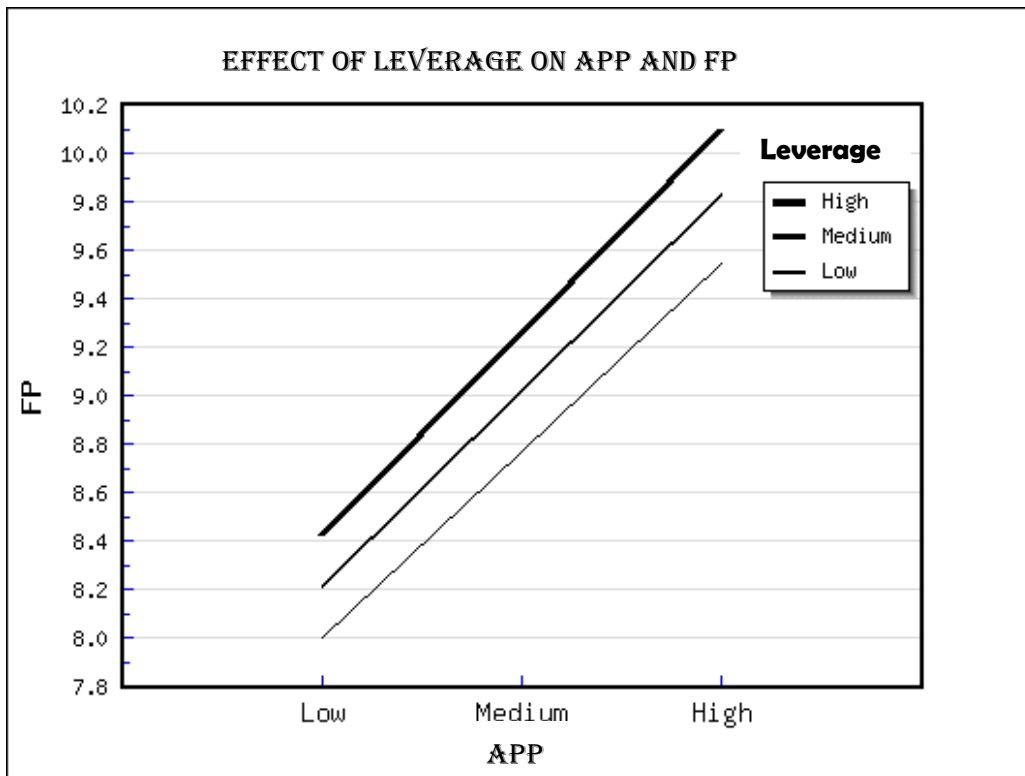**Source: Research Data, 2023**

Figure 4.4 illustrates an enhancing effect in terms of the moderating effect; the steeper the slope, the higher the leverage and the more strongly the APP impacts revenue. The fourth hypothesis was consequently disproven. Leverage was found to positively and significantly moderate the relationship between the APP and FP.

Figure 4.4 Modgraph of leverage on the relationship between APP and Financial Performance
Source: Research Data, 2023

4.4 Chapter Summary

The chapter summary focused on the hypothesis and presents the summary as shown

in the Table 4.14.

Table 4.14 Summary of Hypothesis Findings

Hypothesis	P value	Null
H_{O1}: The financial performance of the listed manufacturing enterprises in the EAC is not significantly impacted by the CCC.	**0.17**	**Fail to Reject**
H_{O2}: The financial performance of the listed manufacturing firms in EAC is not significantly affected by the Inventory holding period	**0.04**	**Rejected**
H_{O3}: The financial performance of the listed manufacturing firms in EAC is not significantly by Accounts receivable period	**0.19**	**Fail to Reject**
H_{O4}: The financial performance of the listed manufacturing firms in EAC is not significantly by Accounts payable period	**0.05**	**Rejected**
H_{O5}: There is no significant moderating effect of financial leverage on the relationship between; a) Cash conversation cycle and financial performance of listed manufacturing firms in EAC b) Inventory holding period and financial performance of listed manufacturing firms in EA c) Accounts receivable period and financial performance of listed manufacturing firms in EAC d) Accounts payable period and financial performance of listed manufacturing firms in EAC	**0.03** **0.01** **0.02** **0.05**	**Rejected** **Rejected** **Rejected** **Rejected**

Source: Author (2023)

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter examines the study's conclusion, recommendations for additional research, and a synopsis of the results.

5.2 Summary of Findings

5.2.1 Effect of CCC (CCC) and the financial performance

The null hypothesis asserts an absence of significant correlation between the Cash Conversion Cycle (CCC) and the financial performance (FP) of industrial enterprises in East Africa. The study's statistical analysis, with a p-value exceeding 0.05 (p = 0.170), provides little evidence to support a relationship between CCC and financial performance, thus corroborating the null hypothesis. This suggests that, based on the study's findings, there is limited indication of a meaningful association between the Cash Conversion Cycle and the financial performance of East African industrial enterprises. This suggests that the financial performance of industrial enterprises in East Africa is not significantly impacted by fluctuations in CCC.

5.2.2 Effect of Inventory Holding Period (IHP) and the financial performance

The analysis conducted in the study resulted in the rejection of the null hypothesis (p < 0.05, p = 0.004), aligning with the alternative hypothesis (H2). This alternative hypothesis posits that there is no noteworthy association between the financial performance (FP) of manufacturing enterprises in East Africa and their Intellectual Capital (IHP). The statistically significant rejection of the null hypothesis supports the assertion that, based on the study's findings, there exists no substantial link between the financial performance of these enterprises and their Intellectual Capital. According to the alternative hypothesis, there is a strong correlation between IHP and

financial success. This suggests that fluctuations in IHP have a significant effect on East African industrial enterprises' financial performance.

5.2.3 Effect of Accounts Receivables Period (ARP) and the financial performance

In accordance with the null hypothesis proposing a lack of substantial correlation between the Accounts Receivable Period (ARP) and the financial performance of manufacturing enterprises in East Africa, the statistical analysis in the study failed to provide sufficient evidence for a significant association ($p > 0.05$, $p = 0.186$). Therefore, one can infer that variations in ARP do not have a noteworthy impact on the financial performance of manufacturing companies in East Africa, based on the study's results.

5.2.4 Effect of Accounts Payables Period (APP) and the financial performance

The FP of East African manufacturing firms and their APP do not significantly correlate, according to the null hypothesis. As a result of the study's research, the alternative hypothesis (H4), which asserts a substantial correlation between APP and financial success, was accepted and the null hypothesis was rejected ($p < 0.05$, $p = 0.000$). This suggests that changes in APP have a significant effect on East African manufacturing companies' FP.

5.2.5 Moderating Effect leverage on Working Capital to financial performance

The results highlight a significant moderation of the relationship between the Cash Conversion Cycle (CCC) and financial performance, attributed to financial leverage ($R2\Delta=0.08$, $\beta=0.04$, $p > 0.05$). This implies that financial leverage plays a role in shaping the association between CCC and financial performance. To elaborate, with each unit increase in financial leverage, there is an 8% alteration in the impact of CCC on financial performance. However, it's important to note that the statistical

significance remains undetermined as the p-value exceeds 0.05. Despite this, the observed effect underscores the potential influence of financial leverage in modifying the relationship between the Cash Conversion Cycle and financial performance.

The findings indicate that the relationship between IHP and financial performance is significantly and favorably impacted by financial leverage ($R2\Delta=0.07$, $\beta=0.03$, $p < 0.05$). Leverage in finances strengthens the bond between IHP and FP. Specifically, for every unit increase in financial leverage, the unpredictability of IHP's impact on financial performance rises by 7%. A p-value of less than 0.05 indicates statistical significance.

Financial Performance and ARP: The results show that financial leverage significantly reduces the correlation ($R2\Delta=0.05$, $\beta=-0.08$, $\rho<0.05$) between ARP and financial performance. Leverage in finance weakens the correlation between ARP and financial performance. The variation in ARP-related financial performance decreases by 5% for each unit increase in financial leverage. Statistical significance is established if the p-value is less than 0.05.

The results reveal a positive and significant moderation effect of financial leverage on the relationship between financial performance (FP) and the Accounts Payable Period (APP) ($R2\Delta=0.07$, $\beta=0.13$, $\rho<0.05$). Financial leverage enhances the correlation between APP and financial performance. Specifically, for every unit increase in financial leverage, there is a 7% amplification in the variance of APP's impact on financial performance. The statistical significance is confirmed by a p-value of less than 0.05, underscoring the robustness of the observed relationship.

5.3 Conclusion of the Study

The study, through the examination of moderation and pre-moderation analyses, offers valuable insights into the relationships among different financial indicators and financial outcomes, shedding light on the moderating influence of financial leverage.

5.3.1 Effect of Cash Conversion Cycle (CCC) and the Financial Performance

Before considering moderation, there was no apparent correlation between financial performance and the CCC, indicating that variations in CCC have minimal impact on the financial health of industrial firms in East Africa. When financial leverage was taken into account as a moderator, the relationship between CCC and financial performance remained largely unchanged. Ultimately, this study demonstrates that East African manufacturing firms can achieve improved financial outcomes by optimizing their inventory and accounts payable processes. Nevertheless, the study did not discover any proof found there was a substantial correlation between FP and the CCC.

The conclusion drawn from this finding is that, initially, there was no apparent correlation between financial performance and the CCC in East African manufacturing firms. This implied that the financial stability of these industrial enterprises was not significantly impacted by variations in CCC. The association between CCC and financial success did not significantly change even when financial leverage was taken into account as a moderator.

However, the study indicates that despite the lack of a direct correlation, East African manufacturing firms have the potential to achieve improved financial outcomes. This improvement can be achieved by optimizing their inventory and accounts payable processes. In other words, the focus should be on enhancing efficiency in managing

inventory and accounts payable rather than relying solely on the traditional understanding of the CCC's direct impact on financial performance. It's important to note that while the study didn't find a substantial correlation between CCC and financial performance, it highlights the significance of effective operational and financial management practices in achieving positive financial outcomes for manufacturing firms in East Africa.

5.3.2 Effect of Inventory Holding Period (IHP) and the Financial Performance

The investigation uncovered a strong correlation between Intellectual Capital (IHP) and financial performance, implying that improved inventory management may have a positive impact on financial performance. The study suggests that improved inventory management, as reflected in a more effective control over the IHP, has a positive influence on FP. In essence, the findings imply that optimizing inventory management practices can contribute to better financial outcomes for the studied entities. This conclusion underscores the importance of efficient inventory management as a potential factor in enhancing overall FP in the context of the study.

5.3.3 Effect of Accounts Receivables Period (ARP) and the FP

It is evidence suggesting that the ARP and FP are not significantly correlated implies that changes in ARP have limited impact on the latter. The connection between the ARP and FP was found to be weakened by financial leverage, indicating that an increase in financial leverage may have an adverse effect on the ARP's capacity to influence FP.

This indicates that alterations in Accounts Receivable Period (ARP) exert a restricted influence on financial performance (FP). Furthermore, the study proposes that the link between ARP and FP is attenuated by the presence of financial leverage. In other

words, an increase in financial leverage may have an adverse effect on the ARP's capacity to influence FP. Therefore, the study implies that while managing accounts receivables may have some impact on FP, the influence is not strong, and it can be further attenuated by higher levels of financial leverage.

5.3.3 Effect of Accounts Payables Period (APP) and the FP

On the contrary, a robust correlation was established between the Accounts Payable Period (APP) and financial performance (FP), emphasizing the significance of proficient accounts payable management in enhancing FP. The findings further revealed that financial leverage plays a significant role in influencing the connections between FP and various financial measures, considering the moderating impact of financial leverage.

In summary, higher financial leverage has been found to positively impact the effects of the APP and IHP on FP. This result implies that financial leverage contributes to strengthening the connection between FP and IHP and APP. Furthermore, there is a larger association between FP and the IHP, Accounts Payables Period APP, and ARP than there is between the three, indicating a considerable moderating influence of financial leverage. These results highlight how crucial it is to manage inventory and accounts payable efficiently while taking financial leverage into account in order to improve FP in the manufacturing sector in East Africa.

5.4 Recommendations for the Study

The study recommends the following research directions;

Managerial Implications

East African manufacturing companies ought to concentrate on enhancing their inventory control procedures. The study discovered a strong correlation between FP

and IHP. By reducing their IHP, businesses can release capital that is tied up and potentially improve their FP. To do this, managers should put in place effective demand forecasting methods and inventory control systems.

The study discovered a strong positive relationship between FP and APP. In order to maximize cash flows, manufacturing companies should give priority to the management of accounts payable. Better FP can be attained through negotiating advantageous payment terms with suppliers and expediting payment procedures.

To optimize financial leverage, strategically manage CCC and ARP, continuously monitor and adjust strategies, implement robust risk management practices, diversify funding sources, and seek professional financial advice to ensure a well-rounded and informed approach to financial management in manufacturing firms.

The linkages between FP and major financial metrics are altered by financial leverage, which managers should be aware of. Leverage can be used to increase the impact of APP and IHP on FP. However, it may diminish the correlation between FP and the ARP. Businesses should carefully consider the effects of their capital structure choices on WCM.

Policy Implications

By offering incentives and educational programs, policymakers can persuade manufacturing companies to implement best practices in WCM. Businesses and the economy can both benefit from having access to resources and training on effective inventory control and accounts payable management.

Legislators ought to take into account measures that make it easier for manufacturing companies to obtain financing, particularly for those who want to improve WCM to

boost their bottom line. Firms can implement inventory optimization and accounts payables strategies with the support of readily available and reasonably priced financing options.

Theoretical Implications

This study highlights how important it is to include financial leverage as a moderating element in the correlations between FP and working capital measurements. Subsequent research ought to concentrate on investigating the complex relationship between financial leverage and financial consequences.

The results broaden our knowledge of the ways in which particular elements of WCM like IHP and APP affect the bottom line of East African manufacturing companies. To fully comprehend the intricate dynamics of WCM in various sectors and geographical areas, more research can be conducted.

5.5 Suggestions for Further Studies

The following suggestions for more research in the field are a result of the study's conclusions and findings:

i.   The moderating impact of firm size on the relationship between Capital Structure and FP: This research will examine how firm size influences how capital structure decisions are made and how well manufacturing businesses in East Africa perform financially. It would investigate the connection between a company's size, FP, and capital structure. The study aims to ascertain whether capital structure metrics, such as debt-to-equity ratios and leverage, are more or less correlated with FP for varying firm sizes. This study will shed light on the best capital structure options available to manufacturing companies in East Africa, regardless of their size.

ii.   This topic investigates how industry characteristics in East African manufacturing have a moderating effect on the relationship between financial success and WCM. Its goal is to look into how industry-specific traits could affect how WCM and FP interact. The purpose of the study is to determine whether working capital components, such as cash management, accounts payable, and accounts receivable, have distinct effects on different manufacturing organizations. The study's objective is to provide industry-specific guidelines for improving WCM tactics in order to improve FP by accounting for certain business factors such demand patterns, seasonality, and supply chain dynamics.

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APPENDICES

Appendix I: Data Sheet

Datasheet	Cash Conversion Cycle				Inventory Holding Period	Accounts Receivable Period	Accounts Payable Period	Debt	Equity	Debt / Equity Ratio	EPS
	DIO	DSO	DPO	CCC							
2007											
2008											
2009											
2010											
2011											
2012											
2013											
2014											
2015											
2016											
2017											
2018											
2019											
2020											
2021											
2022											

Appendix II: Letter from school

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SCHOOL OF BUSINESS AND ECONOMICS

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　　 0715245347
Fax No: (053) 43047
Telex No. MOIVARSITY 35047

P.O. Box 3900
Eldoret.
Kenya

RE: MU/SBE/PGR/ACD/21B

DATE: 2nd May, 2023

TO WHOM IT MAY CONCERN:

RE: GORETTI CHEBET-MBA/5775/21

The above named is a bonafide student of Moi University School of Business and Economics, undertaking **Master of Business Administration** degree; specializing in Finance.

She has successfully completed the coursework, defended her proposal, and is proceeding to the field to collect data for her research titled: *"Working Capital Management, Financial Leverage and Financial Performance of Listed Manufacturing."*

Any assistance accorded to her will be highly appreciated.

Yours faithfully,

SCHOOL OF BUSINESS &
ECONOMICS
MOI UNIVERSITY
P O Box 3900 ELDORET 30100
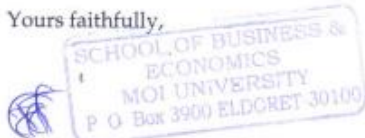
DR. RONALD BONUKE
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/vc

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