

**EFFECT OF WORKING CAPITAL ON FINANCIAL DISTRESS  
AMONG MANUFACTURING FIRMS LISTED AT THE NAIROBI  
SECURITIES EXCHANGE**

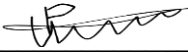
**PENG GAO**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD  
OF THE DEGREE OF MASTER OF BUSINESS  
ADMINISTRATION, FACULTY OF BUSINESS AND  
MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI**

**NOVEMBER, 2021**

## DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed:  Date: 18-11-2021

**PENG GAO**

**D61/73081/2014**

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

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## **LIST OF ABBREVIATIONS**

<b>ANOVA</b>	Analysis of Variance
<b>CBK</b>	Central Bank of Kenya
<b>CMA</b>	Capital Markets Authority
<b>FCF</b>	Free Cash Flow
<b>NSE</b>	Nairobi Securities Exchange
<b>ROA</b>	Financial distress
<b>SPSS</b>	Statistical Package for Social Sciences
<b>US</b>	United States
<b>VIF</b>	Variance Inflation Factors

## **ABSTRACT**

Working Capital Management (WCM) encompasses all elements of an organization's planning and management of current assets and current liabilities in ways that maximize the organization's ability to finance obligations as they mature and generate the highest possible returns on recurrent assets. Managers are becoming aware that poor liquidity assessment results in a greater default risk. The purpose of this research was to determine the effect of WCM judgments on the financial distress of listed manufacturing enterprises in Kenya. To accomplish the research aims, data were obtained from financial report releases over a five-year period (2016-2020) using a correlation approach. The connection between independent and dependent variables was determined using multiple regression analysis. The results indicate a positive connection between the degrees of financial hardship experienced by publicly traded manufacturing businesses throughout the research period and the return projected by the regression model, where the coefficient of multiple correlation is 0.485. The regression model accounts for roughly 23.5 percent of the variance in the financial distress score of publicly traded manufacturing businesses across the research period. The regression model is significant at the 0.05 level, as are the majority of the coefficients in the regression models. The report advises that managers of the listed industrial enterprises maintain the shortest feasible inventory turnover interval. Reducing the inventory turnover period will help the manufacturing firms incur reduced costs associated with inventory, such as the storage and warehousing expenses. With low inventory costs, there is no doubt that there will be a decrease in the overall cost of operations, which ultimately enhances a firm's bottom line performance. There has also to be effective coordination in the policies guiding the settlement of sales and the collection of cash from the receivables in order to maximize the contribution of strategic working capital management to the performance of listed manufacturing firms. Manufacturing firms will benefit if they do not settle the obligations arising from credit purchases in a short time, and if they collect cash from credit sales within a very short time. The ultimate objective should be maximizing liquidity while ensuring that the firm's profitability is not affected. Research in the future should examine how strategic decisions made by a corporation intersect with decisions made about working capital management in order to impact the performance of an organization.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

According to finance theory, a company's profitability is directly related to its working capital (Raheman & Nasr, 2007). If a company's earnings are regularly positive, but its liquidity management techniques are incorrect, it may be at risk of bankruptcy (Karger & Bluementhal, 1994). Asset returns may be negatively impacted by excessive liquidity levels, while maintaining day-to-day operations may be hindered by low liquidity levels. Small and medium-sized businesses with strong growth requirements, especially those that operate in liquid markets, use liquidity as a primary source of financing businesses' short-term access to financial markets overcomes their capital market disadvantage (Wambugu, 2013). To borrow more money with less risk of default, a corporation needs a high quantity of working capital in order to meet its short-term commitments. In consequence, this lowers the cost of capital and reduces the risk of financial crisis (Wambugu, 2013).

Theories like the free cash flow theories, the trade-off theories, and the operational cycle theories all play an important role in determining how to best manage working capital. Theories emphasize the need of maintaining a healthy amount of working capital. According to Jensen's free cash flow theories, managers are more inclined to misuse working capital if there are no potential investment projects (1986). This boosts agency costs and increases the likelihood of financial distress. Trade off theory by Myers (1984) holds that firms maintain target working capital levels by lowering the risk of shortage or excess of working capital and reduce probability of financial distress. Working capital management is relevant to this research since Weston and Brigham's (1979) operating cycle theory states, "Effective working capital management minimizes the chance of distress.

Mumias Sugar and other listed manufacturing and associated industries have encountered financial crises that have been ascribed to a lack of operating capital. Since Mumias Sugar has been supported by the government, the firm has been unable to pay its farmers' debts, which has led to a considerable decline in sugar output (CMA, 2018). Other NSE-listed companies, such as Eveready East Africa Ltd and Unga group, have had issues. Failures in publically traded companies in Kenya have

resulted from managerial opportunism and inefficient resource management, resulting in job losses, business closures and a negative impact on Kenya's economy in general (Njogu, 2016). Because of this, the current study is looking into how working capital affects the financial health of these businesses.

### **1.1.1 Working Capital**

Working capital, as defined by Adeniji (2008), is the money that businesses utilize on a daily basis to carry out their operations. Short-term assets and liabilities make up a company's working capital, which includes the raw resources required to generate commercial items for sale (Akinsulire, 2008). When it comes to optimizing a company's performance, Finkler (2010) defines working capital as the ratio of current obligations (those that have to be paid within a year) to current assets (those that may be spent or converted into cash).

It is crucial for finance managers to consider working capital when making choices concerning the usage of their company's finances. The ability to meet operational commitments is determined by decisions about what resources and liabilities an organization should have (Harris, 2005). Organizations that are able to maintain a healthy balance between income and locked-up capital are considered to be successful. Overstocking diminishes profit margins while understocking causes an organization to be unable to meet the demands of its customers. This need a sufficient quantity of cash on hand. It is clear from these remarks that effective working capital management is critical to an organization's overall performance, both in the short term and over the long run (Akoto, Awunyo & Angwor, 2013).

A company's working capital is determined by subtracting its total short-term obligations from its net liquid assets. Mahavidyalaya et al. (2010) and Devraj (2014) offer additional ratios for measuring a firm's liquidity in addition to the current ratios, the fast ratio or acid test, and the absolute liquid ratio/cash ratio, which assesses a company's liquidity in cash and cash equivalents. Despite there being similarity in the current ratio and quick ratios, there are more provisions given in capacity of precise assessment by the quick ratio on the capability of a firm to pay its current obligations. However, absolute liquid ratio is regarded more as an perfect measure of liquidity in comparison to liquid ratio and current ratio (Bhunja et al., 2011). The current study



will use quick ratio and current ratio as measures of working capital as they have been widely used in previous literature (Akoto et al., 2013; Devraj, 2014).

### **1.1.2 Financial Distress**

The company is put in a position where it is unable to fulfill existing commitments, and it must take remedial action (Ross, Westerfield & Jaffe, 2005). A troubled company may be unable to fulfill the financial commitments that come due or does so by incurring significant costs. Typically, the phenomena may be announced when the flow of money slows, the market value falls, profits are breached, and growth is limited (Andrade & Kaplan, 1998). Debt crisis occurs when a company cannot pay its obligations on schedule (Saleem, Muhammad, & Umara, 2013).

As essential as financial health is for investors and management, it's also a good indication of a company's success. As long as a company's financial health is maintained, investors prefer to invest in businesses that can cover their liabilities. A distressed business incurs numerous expenses, some of which are direct and others that are indirect, which may ultimately influence the profitability of the company and further decrease the distressed entity's worth (Kanyugi, 2016). When you are in financial distress, the direct expenses are the fees that are paid to accountants and attorneys to restructure the company and pay their fees. Financial hardship incurs indirect costs. These expenses are paid by the business when it takes action in response to the decisions made by stakeholders, including workers, suppliers, investors, and shareholders (Pandey, 2010).

For many decades, experts have debated the subject of quantifying financial hardship. Researchers and theorists have refined methods to forecast financial hardship and insolvency throughout the decades. Financial distress prediction methods are based on accounting information or market knowledge, according to Outecheva (2007). To determine financial distress in accounting-based models, data from the financial accounts is included into the model, but in market-based models, securities traded in the capital market are considered. The current study will employ the Altman's Z-score which measures volatility of emergent economies to explain the financial distress among the studied companies. Based on the model's ability to accurately anticipate financial trouble, this is the model of choice (Zouari & Abid, 2000).

### **1.1.3 Working Capital and Financial Distress**

A company's profitability depends on its working capital, according to financial theory (Raheman & Nasr, 2007). If a company's earnings are regularly positive, but its liquidity management techniques are incorrect, it may be at risk of bankruptcy (Karger & Bluementhal, 1994). Asset returns may be negatively impacted by a lack of liquidity, while day-to-day company operations may be negatively impacted by an excess of liquidity. Financial liquidity is the key source of finance for small and medium-sized firms that need to develop rapidly. Businesses' short-term access to financial markets overcomes their capital market disadvantage (Wambugu, 2013). A company's ability to meet short-term commitments is enhanced if it has a substantial quantity of working capital on hand. As a consequence, the company's borrowing capacity grows and its default risk diminishes. In consequence, this lowers the cost of capital and reduces the risk of financial crisis (Wambugu, 2013).

The FCF concept by Jensen (1986) mentions that the managers of a firm can make investments in negative NPV projects with the availability of surplus FCF. A rise in FCF may lead to an increase in administrative waste and inefficiency, which has a detrimental influence on the profitability of the organization, according to the premise. Consequently, Demsetz and Lehn (1985) demonstrated that large businesses have fewer growth chances than smaller ones, leading to an overinvestment problem that negatively impacts the profitability of the organization. Financial leverage seems to reduce agency costs since managers are legally obligated to repay interest and loans, which ultimately reduces FCF abuse and hence increases business profitability. (Gul and Tsui, 1998).

A factor causing business financial hardship in most cases is a poorly managed working capital, extreme competition, harsh economic conditions, and the structure of the capital. In their study, Parker, Peters, and Turetsky (2002) showed that a lack of robust working capital management — encapsulated in mishandling of capital — leads to financial collapse and fraud. Industry rivalry was shown to contribute to a decrease in sales turnover and a consequent reduction in profitability for the impacted companies in their research (Kapopoulos & Lazaretou, 2007). According to the authors, firms face liquidity constraints, leading to financial hardship, when these conditions persist.

#### **1.1.4 Manufacturing Firms Listed at the Nairobi Securities Exchange**

Stockbrokers and dealers use the NSE, which was established in 1954, to buy and sell stocks and other securities, both domestically and internationally. NSE's principal objectives are to supervise its members and provide a trading platform for listed securities. NSE is mostly used for secondary market transactions. A trading floor is provided, however it is seldom used since that automated trading systems have taken over. Members can trade from the comfort of their own workplaces thanks to a wide area network. There are no hidden fees and the system is very scalable, allowing it to handle a huge number of transactions at once. There are now nine NSE-listed firms in the manufacturing and associated industries (NSE, 2019).

Some publicly traded corporations in the manufacturing and adjacent industries have recently had liquidity concerns. Mumias Sugar is a notable example of a corporation that, despite the government's efforts to assist it, has had financial difficulties owing to a lack of liquidity. Therefore, raw resources are being lost, and sugar output has decreased significantly due to the company's inability to pay farmers' debts. Industrial firms listed on the NSE, such as Eveready East Africa Ltd and Unga Group, have also had financial difficulties (Njagi, 2016). A thorough evaluation of the effect of FCF on the profitability of NSE-listed manufacturing and allied firms is thus required.

To improve their profitability, NSE-listed manufacturing companies should build systems for controlling FCF in order to reduce expenses and maximize earnings. Free cash flow decisions are critical to the organization's overall strategy if it is to optimize shareholder value (Siddiquee, Khan, Shaem & Mahmud, 2009). A number of publicly listed firms have recently had financial problems that have led in suspensions from trading, shutdowns of specific operations, or receivership. It has been suggested that one factor is their failure to pay their suppliers of products and bank obligations. Firms like Mumias Sugar Co. Ltd and Unga Group Ltd.

#### **1.2 Research Problem**

A firm's capacity to remain viable is believed to be strongly connected to working capital. Notable, however, is the fact that despite the key company features described here being factors that drive a business into financial distress, previous empirical investigations have been unable to establish this as fact. Working capital and financial distress have been the subject of several studies. According to these investigations,

there is conflicting empirical data. Falope and Ajilore (2009) and Kaddumi and Ramadan (2012) are two examples of recent research in this area. Even while indications of financial distress including liquidity and FCF were studied and used in various research, they failed to reach a consensus.

According to context, a number of publicly traded firms such as Mumias and Eveready have suffered financial difficulties that have prompted this research to concentrate on financial hardship in this sector. Prior studies on working capital and financial distress have mainly been done in developed markets: western nations and Asia Pacific nations with limited studies being done in frontier markets (Madan, 2015). Therefore, it is necessary to analyse if working capital affects the financial hardship of NSE-listed manufacturing companies.

Local authorities (Ntoiti, 2013; Ouma, 2011) and insurance firms (Kosikoh, 2014) have been the subject of research in Kenya on financial hardship (Kosikoh, 2014). (Memba & Abuga, 2013). The financial performance of manufacturing companies has been the primary focus of research on these companies. Following these research, it was discovered that a company's financial performance is affected by different components of micro and macroeconomics as well as financial considerations. Among these studies are: (Kamau & Oluoch, 2016; Karagu & Okibo, 2014; Kariuki, 2013; Al-tamimi, 2010; Malik, 2011 among others). This is not to say that the conclusions of these research cannot be applied to the NSE-listed industrial companies. Local study could not find any indication that working capital had an influence on listed industrial businesses' financial distress. The present study is based on these gaps and aims to address the research question: How does working capital effect financial distress among NSE listed manufacturing firms?

### **1.3 Research Objective**

The purpose of this study was to determine the impact of working capital on financial distress among NSE-listed manufacturing enterprises.

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

New insights into the link between working capital and financial problems will be gained by NSE-listed industrial enterprises using the data. Management and administration tactics are likely to be improved if companies adopt defined plans. The

companies can utilize the information in order to enhance their characteristics such as liquidity and leverage to strengthen their resilience against financial distress.

The study's findings likewise help the structuring and legislature of Kenyan policies and regulations that help companies to advance their administration conveyance via improved and progressively effective procedures. This is helpful in making reasonable changes and improves the industry with a general point of advancement of the economy.

Scholars as well as academicians can even use the outcomes of the research to further investigate and undertake research in this area in order to extrapolate the issues raised. The conclusions will back the body of knowledge in existence related to the aspects of working capital and be able to link their relationship with financial distress among non-financial publicly traded companies. As a result, future academics and academicians could use this research as a reference point in their research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter aims to provide light on the link between working capital and financial difficulties. It further discusses the previous empirical studies; knowledge gaps identified and summarizes with a conceptual framework and hypotheses displaying the expected study variable relationship.

#### **2.2 Theoretical Framework**

The ideas that support the study of working capital and financial hardship are examined in this part. Operating cycle, Trade-off theory and free cash flow theory are all dealt with in theoretical reviews.

##### **2.2.1 Trade-off Theory**

This study is anchored by this theory proposed by Myers (1977). A fundamental assumption of structure of firm's capital is its optimum financing mix consists of finding the best trade-off between debt financing and losses or profits that may be obtained by this financing. The criticism raised against Modigliani and Miller (1963) for their perfect market assumptions led to the development of this theory. The authors proved that capital structure does impact market value by agreeing that taxes really exist in the actual world. Because interest on debt, which is tax deductible, sends extra cash flows to the levered company in the form of interest tax savings, they determined that the value of the firm was enhanced in the process. According to this theory, where there is permanent debt, a constant cost of debt, and a steady marginal tax rate, leveraged organizations have a greater market value than unlevered corporations. This is because of the existing value of interest tax shelters linked with debt financing.

Deductibility of interest costs, according to Modigliani and Miller (1963), is the primary benefit of debt in terms of tax mitigation. When it comes to determining how much debt inflates the cost of distress, the Theory uses the models of Scott (1976), Kraus and Litzenberger (1973), and combined with Litzenberger and Scott's (1976) cost framework to estimate how much debt affects bankruptcy costs..

These factors include legal and administrative expenses as well as subtler expenses such as the loss of consumer confidence and trust as a consequence of market uncertainty. A cost-benefit analysis of debt must take into account several other factors, and hence it is hard to determine the exact costs of bankruptcy in isolation (Ju, Parrino, Poteshman, & Weisbach, 2005). For this reason, the Jensen and Meckling (1976) framework for determining the cost of an agency is also included into the trade-off model. This theory offers clarity for understanding how debt financing influences company value by allowing for the deductibility of debt interest.

The theory also presents the idea of agency costs and how capital structure may increase the financial hardship on the company due to the fact that it adds to agency costs.

### **2.2.2 Free Cash Flow Theory**

As defined by Jensen (1986), "free cash flow" is net cash flow that has been reduced to zero by subtracting all of the needs of positive NPV investments. According to Jensen (1986), shareholder-manager conflict is exacerbated when a corporation has an abundance of free cash flow. To put it another way, management doesn't have to turn to the capital markets when the firm has excess cash. The company's management has greater freedom to spend and invest without being constrained by capital sources, as would be the case if such money were acquired via the financial markets.

When a company's development choices are limited and funds cannot be securely invested elsewhere, shareholders want to have excess money returned to them through share repurchase or dividend schemes. Rather of investing the increased funds wisely, management would spend it on pointless investments, administrative waste, and bonuses. Managers are more likely to misuse FCF if the company has a high amount of FCF but no potential investment opportunity, according to a notion known as the FCF Theory. According to some who are opposed to the FCF hypothesis, it promotes short-termism by discouraging long-term investment (Cornett, Hovakimian, Palia & Tehranian, 2009).

Brush et al. (2000), managers' self-interest promotes wastefulness when there is extra FCF. As a result, there is a connection between this study and the FCF hypothesis. The profitability of an agency is affected by free cash flow (FCF) since it raises

agency costs, which in turn impacts profitability. It is assumed that a company's capacity to pay its debts would be negatively affected by a lack of working capital.

### **2.2.3 Operating Cycle Theory**

Work of John Weston and Richard Brigham gave rise to operational cycle theory (1979). This idea is based on the company's operating cycles. It's advocating that an increase in the firm's capacity to liquidate is created by increasing the amount of stability in its ability to get liquidation value in order to incorporate compensation measures related to the firm's operational operations. Information on liquidity provided by including records receivables and stock turnover in the operational cycle is more relevant than just using the present as well as looking at dissolvability indicators (Weston & Brigham, 1979). The number of times that the typical receivables venture of a company is turned into money is calculated by calculating the total number of records receivable generated. Normal and extraordinary debtors experience some adjustments with respect to yearly deals when there are alterations to credit as well as when there is an accumulation strategy.

Adding the stock exceptional period from the current day to the total number of outstanding days results in the operating cycle. For the company's annual sales, the average outstanding accounts receivable amount is impacted by changes in credit and collection policies. With more credit sales, the receivables will increase, resulting in a longer receivable collection time. This will lead to less liquidity in the receivables turnover. An inescapable option that shows the higher percentage of basic and present analysis is created in the event of results from a business that opts for having higher typical receivable exposure over a drawn out time period (Richards & Laughlin 1980).

One researcher counters the operational cycle theory of Richards and Laughlin (1980) by alleging that it ignores liquidity requirements that are imposed on a business. However, this theory applies to our research since it proposes that well-planned liquidity management would minimize financial hardship and therefore increase overall company value.



## **2.3 Determinants of Financial Distress**

Internal and external causes may also contribute to a business's financial troubles. Firm-specific internal factors might be influenced within the company. They are working capital such as firm size, leverage, age, efficiency of management, profitability and liquidity. Factors outside a firm that influence financial distress include; regulatory environment, tax rates, political stability, corruption amongst others (Athanasoglou et al., 2005).

### **2.3.1 Working Capital**

Cheluget, Gekara, Orwa, and Keraro (2014) argued that a link exist between insurance companies' financial distress and their liquidity and found that financial distress is substantially determined by liquidity. Firm liquidity and solvency indicators had a substantial influence on increasing cost efficiency; businesses with higher bought input expenditures comparable to capital have less chance to become efficient when solvency and liquidity are taken into account (Arif, 2012).

According to the solvency and solvency indicators, businesses that spend more money on acquired inputs than on capital are less likely to enhance their efficiency (Levi, Russell, & Langemeier, 2013). Balance sheet liquidity, another word for firm liquidity, refers to the total quantity of liquid assets that are recorded in the financial statements. When dealing with companies with liquidity risk, the corporate investment behavior of family firms has a reduced financial distress risk tolerance, as shown by their much greater degree of corporate liquidity (Liang Fu, 2016).

### **2.3.2 Financial Leverage**

This intuition makes it quite easy to determine the presence of an optimum capital structure. Inadequate debt capacity exists because companies take into consideration both the benefits received in the form of reduced taxes as well as the overall expenses that would be paid in the case of bankruptcy (Kraus & Litzenberger, 1973). If corporate bankruptcy was expensive, Senbet (2012) said, then it fulfilled a key gap between the Modigliani-Miller tax-adjusted model and the known fact that financial debt financing is only used a small percentage of the time (Senbet et al., 2012). Using debt offers tax advantages for a company, which is part of the trade-off hypothesis. This is one of two sets of findings, with findings from other research demonstrating that greater leverage results in increased volatility in share prices with regard to

private information; a company's final destiny relies on problems that remain undisclosed to the broader public (Nyamboga, Omwario & Muriuki, 2014).

This (possible) scenario was developed by Eckbo (2008) and described as a rise in the price of default results to a reduction in the amount of debt that's optimal. It's in line with previous theories on debt that reference increases in non-debt taxes, which protect against higher levels of debt, and taxes on personal equity, which increase the optimal debt level. As a marginal rise in the tax on bondholder returns is equated with a lower optimum level of debt, an increase in this tax tends to have an optimum capital structure, decrease the quantity of debt (Eckbo, 2008). Even though risk may be unclear, even if uncertainty is considered to be regularly distributed, the impact of risk is equivocal. Cohn (2008) explained that the debt ratio and volatility typically go hand in hand in a negative manner.

### **2.3.3 Firm Size**

The amount and diversity of a company's productive ability and capacity, or the variety and volume of services a company should be able to supply simultaneously to clients, are two ways in which business size is expressed in financial literature (Mule, Mukras, & Nzioka, 2015). Is one of the most crucial indicators of an organization's financial strength and indicates how little or large it is (Surajit & Saxena, 2009). Firm size has been operationalized using a variety of methods in empirical research. The logarithmic of total revenues, the logarithmic expression of total assets, and the natural logarithm of total employees have been employed in empirical study to indicate the scale of a corporation (Kodongo et al., 2014; Mwangi et al., 2014).

Using the neoclassical model of corporations and the concept of economies of scale, the premise that business size is linked to financial distress is based on the theory. It is possible for a variety of reasons, such as financial (due to a high number of purchases), to result in economies of scale. One of the two key ways large corporations can obtain better interest and discount rates is organizational: using specialization and division of labor to cut down on costs. The other method is technical: the large corporation divides high expenses among a large cluster, thereby lowering the overall cost (Papadogonas, 2006).

### **2.3.4 Firm Profitability**

According to Maditinos (2011), a company's profitability may be gauged by its rise in sales, which will also reflect its expansion. We will also be using the ROE metric, which shows how profitable a business is based on how much profit shareholders are making with the money they invested. "ROA" (also known as the "financial distress") is a profitability measure that reveals how well management manages assets to produce profits, and it depicts how efficient they are at allocating assets. Sangmi (2010) argued that the earnings ratio, which is calculated by dividing earnings by profits, is a common way to gauge a company's profitability.

According to Sangmi (2010), greater income levels would be anticipated to lower the probability of failure in businesses since businesses with plenty of funds and liquidity often succeeds. When looking at the Z-score model, use the Altman method According to Shaukat and Hina (2015), businesses in Pakistan have a positive correlation between profitability and reduction in financial hardship...

## **2.4 Empirical Review**

Studying the relationship between a lack of working capital and financial distress on a local and global scale has yielded a number of interesting results, which we'll review in this section.

### **2.4.1 Global Studies**

An extensive investigation of financial hardship and business performance data from the Asian financial crisis by Tan (2012) was conducted. A test was conducted on the connection that linked business performance and financial distress by examining the sample of 277 companies from eight East Asian countries. As a result, there were decreased endogeneity problems due of the crisis, which gave rise to a non-endogenous shock. Organizations owing minimal financial leverage exhibited superior performance as compared to firms having high leverage as a consequence of the study's findings. It was also shown that financial hardship led to higher levels of company performance after the Asian Financial Crisis of 1997-1998. According to research, leveraged businesses have poorer financial results amid a crisis. Results from this research cannot be extended to the Kenyan economy, since it is based on the Asian financial crisis.

In another research, Gupta et al. (2014) looked over the five-year period between 2006 and 2010 in India National Stock Exchange to see how financial hardship of the 100 listed companies affected financial distress. ROA was used as a proxy for leverage to calculate the degree of financial hardship based on market and book value of debt and equity. There was a strong negative association between debt financing and financial problems, but equity capital showed a considerable positive correlation. High-debt companies became less financially fragile, while high-equity companies became more financially stable.

Kiesewetter and Manthey (2017) surveyed the connection between tax avoidance and corporate governance. At the cutoff, the analysis discovered a major divergence in the corporate governance level of practices. When compared to the smaller companies, the larger companies have better corporate governance. Good corporate governance features lower the effective rate of tax for the companies, according to the report. Governance and taxation are inextricably linked, the paper adds to established studies. Contextual differences exist since this research was carried out outside of Kenya, in a nation with a distinct social and economic climate.

Firm size and profit were examined by Amato and Burson (2017) in the UK financial services industry. Regardless of whether the relationship was regarded as a linear or cubic function, business size had a negative effect on profitability. As businesses grew, they often increased debt in the firm's capital structure rather than their small-sized counterparts. Reduction in efficiency and profitability ensued as a consequence of this.

Publicly traded firms in the United States are more profitable the larger they are, according to Lee (2019). Using fixed effect dynamic panel data and a sample of more than 7000 entities, the researchers were able to validate their findings and the correctness of their conclusions. Profitability metrics demonstrated a substantial nonlinear connection with the size of the business (total assets), and the rate of increase in profitability was lower for bigger companies. The findings showed that larger organizations funded their assets with more borrowed capital since they had a better capacity to borrow money.

### **2.4.2 Local Studies**

Kariuki (2013) discovered how stress in the financial sector impacted the ability of commercial banks to function. A population of forty-four banks was sampled to arrive at a total of twenty-two banks. Eleven NSE-listed financial institutions were included, while eleven NSE-unlisted institutions were included. The financial statements of the Central Bank of Kenya were utilized to gather information. Financial performance was measured using the financial distress ratio, and financial distress was determined using Altman's Z-score model. Banks which did not go public, which experienced more financial distress, as opposed to those who went public and did well, showed up in the research. Kariuki (2013) also found that low financial performance correlated with financial hardship, such that poor performance outcomes may be attributed to low financial performance. The Altman Z-score model, developed for manufacturing companies with assets above \$1 million, was used in this research.

For non-financial companies registered on the Nairobi Securities Exchange, Baimwera and Muriuki (2014) examined the Altman (1968) factors of financial distress, namely liquidity, leverage, growth, and profitability, in connection to financial hardship. A descriptive research methodology was used for a three-year time period, spanning 2007 to 2010, which collected financial data from financial statements. It used multivariate and univariate methods to predict financial stress. Pearson product moment correlation and regression analysis were used to investigate the link between financial distress drivers and company financial hardship. Corporate financial hardship has no substantial impact on liquidity and leverage. To this end, both growth and profitability had a major impact. Insurance executives in Kenya sought to learn about the financial hardships in the insurance business, including profitability, liquidity, efficiency leverage, and the size of the organization. Investigating Kenya's insurance companies as of December 31, 2013 required a descriptive research strategy. Companies were selected for inclusion in the sample via purposive sampling. The research claims that insurance firms in Kenya experience financial hardship as a result of factors related to independence. A research on financial hardship in Kenya revealed that efficiency and liquidity are the most significant factors.

Meeme (2015) set out to discover whether Kenyan commercial banks' adherence to the Basel III agreement was associated with their level of financial stress. Secondary data was gathered via a two-year census of all commercial banks using a descriptive research strategy. Financial hardship was first shown to be strongly associated with the Basel III agreement using a multiple regression model. It was discovered that criteria such as capital and leverage restrictions, as well as liquidity requirements, are positively correlated with commercial bank financial hardship. Findings from the study show that base III has a major influence on financial distress in Kenyan commercial banks, and that to implement Basel, banks must design methods to help them implement the measures stipulated by the Basel accord.

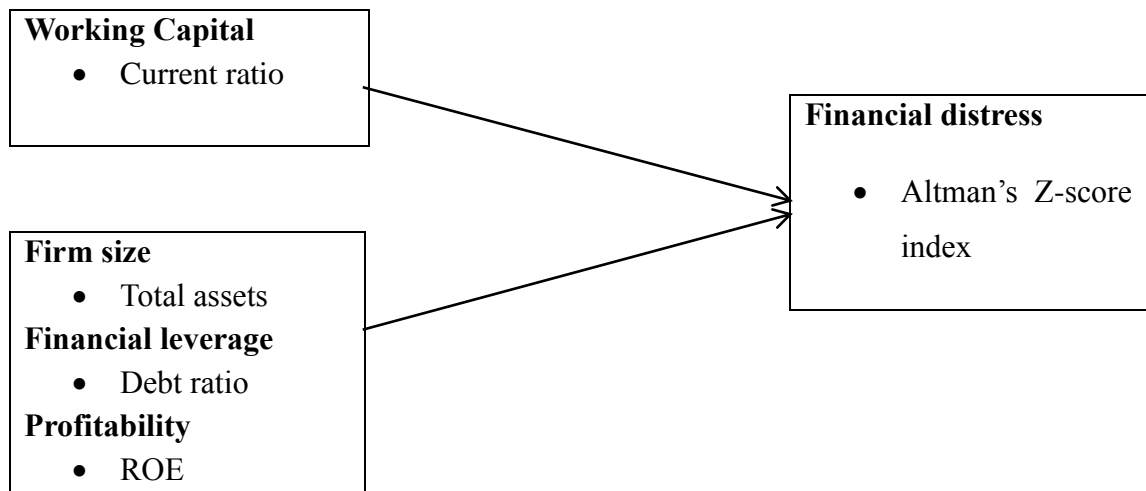
Muigai (2016) studied non-financial enterprises listed on the NSE to see whether capital structure influences financial hardship. Companies' financial hardship was explored as a result of a combination of independent variables, including debt maturity, equity structure, and asset structure. Company size was predicted to impact the interaction between these variables. A decade's worth of audited financial accounts, dating from 2004 to 2013, served as secondary data in this study. Using a census from 41 of the Fortune 500 firms, together with a quantitative research methodology, the study investigated this topic. According to Muigai (2016), asset tangibility, external equity, and financial leverage do not aid in the recovery of non-financial businesses during financial crisis. As vital as it is for nonfinancial businesses to have internal equity and long-term debt to help them weather the financial crisis, the size and industry in which a firm is listed had only a tiny influence on this relationship, according to the research.

## **2.5 Conceptual Framework**

Figure 2.1 shows how the variables are projected to be linked. Working capital being the predictor variable will be characterized by financial leverage, firm size, firm liquidity, management efficiency and profitability. Financial distress is the response variable given by Altman's Z-score index.

**Independent variable**

**dependent variable**



**Control Variables**

**Source: Researcher (2021)**

**2.6 Summary of the Literature Review and Research Gaps**

Reviewing the literature, it became clear that the hypothesized link between low working capital and financial distress existed. Many important factors that contribute to financial distress have been examined. According to the examined research, there is a lack of information. Working capital and financial hardship seem to be linked in a variety of ways in the research evaluated. Different scholars' operationalization of working capital may account for the discrepancies in their findings. There was a void left in the current research due to previous studies focusing on how working capital affected performance rather than on financial hardship.

Additionally, many studies done employed different designs for which some relied on empirical review to conclude while others relied on existing literature in measuring how the variables relate. There is a need for more studies to reduce the gap through understanding the relationship between working capital and financial hardship.

**CHAPTER THREE  
RESEARCH METHODOLOGY**

**3.1 Introduction**

This chapter describes the research methodologies used to determine the impact of working capital on a company's financial distress. The chapter focuses on the design, diagnostic tests, data collection, and analysis of the study in particular.

### **3.2 Research Design**

To determine how non-financial working capital and financial distress are related, a descriptive approach was used. A descriptive approach was used to examine the relationship between NSE-listed manufacturing businesses' operating capital and financial hardship. Because the researcher is interested in the nature of the phenomenon, this design was judged acceptable (Khan, 2008). It was also sufficient in defining the interrelationships of the phenomena. This design also validly and accurately represented the variables thereby giving sufficient responses to the study queries.

### **3.3 Population**

Research enquiries, for example, are part of a population since they are part of a series of occurrences that have been observed (Burns & Burns, 2008). All the 9 NSE listed manufacturing firms as of December 2020 formed the current study's population (see appendix I).

### **3.4 Data Collection**

Secondary data was acquired and recorded in a secondary data collection strategy for this inquiry from the publicly available financial statements of the listed non-financial companies from 2016 to 2020. Using CMA publishing records for each of the studied companies, the articles were compiled. A wide range of information was obtained throughout the research: total assets, current assets, debt, and profits before interest and taxes.

### **3.5 Diagnostic Tests**

To ascertain the model feasibility, a number of diagnostic tests were done, like normality, stationarity, Hausman test, multicollinearity, homogeneity and autocorrelation. The assumption of normality is that the dependent variable's residual would be normally distributed and closer to the mean. This was accomplished by use of the Kolmogorov-Smirnov test or Shapiro-wilk test. In the event that one of the variables has no normal distribution, it was adjusted using the logarithmic adjustment methodology. Stationarity test was utilized in determining if the statistical characteristics such as variance, mean, as well as autocorrelation change with the passage of time. This property was ascertained by testing augmented Dickey Fuller. In



case the distribution does not meet this property, the robust standard errors were utilized (Khan, 2008).

The Hausman hypothesis test was used to determine if the chosen model was random effect (randomly distributed) or fixed effect (stochastically distributed). The Hausman test examines whether  $\mu_{it}$  is correlated with the regressor set's disturbance residuals under the assumption that there is no connection between the two. Durbin–Wu–Hausman test must be used to conduct the exam. The null hypothesis is not supported if the value of P is below 0.05.

Autocorrelation is a measure of how similar one time series is when compared to its lagged value across successive timings. The measure of this test was done using the Durbin-Watson statistic and in the event that the presumption is breached the robust standard errors was used by the model. Multicollinearity exists when a perfect or near perfect linear relation is made between a number of independent variables. The study made use of tolerance levels as well as Variance Inflation Factors (VIF). Any multicollinear variable was eliminated and a new measurement used in place of the variable having co-linearity. Heteroskedasticity confirms if the errors variance in a regression lies among the independent variables. This was tested using the Levene test and if data does not meet the homogeneity of variances assumption, robust standard errors were employed.

### **3.6 Data Analysis**

Version 24 of the SPSS software will be utilized for data analysis. Quantitatively, the tables present the results. In calculating central tendency and dispersion measurements, including a standard deviation and mean for each variable, descriptive statistics were used. Regression and correlation are the basis of inferential statistics. Inferential statistics are based on correlation and regression. Relationships between research variables may be defined by correlations, and their cause and effect can be evaluated using regression. The relationship between independent and dependent variables is determined linearly by a multivariate regression.

#### **3.6.1 Analytical Model**

The following equation was applicable:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where: Y = Financial distress for each firm as given by Altman's Z-score index of financial distress.

$\beta_0$  = the slope of the regression equation's y intercept.

$\beta_1 \dots \beta_5$  = coefficients of regression

$X_1$  = Inventory Turnover Days

$X_2$  = Average Payment Period

$X_3$  = Cash Conversion Period

$X_4$  = average Collection Period

$X_5$  = Current Ratio

$X_6$  = Company Size

$\varepsilon$  =error term

The multiple discriminant analysis model below was used to compute financial distress. The model has been used before in establishing financial distress of publicly listed firms by Wen (2010) and Almansour (2015).

$$Z = 1.2(X_1) + 1.4(X_2) + 3.3(X_3) + 0.6(X_4) + 1.0(X_5)$$

Where;

**Z** = The Z-Score of the discriminant equation,

**$X_1$**  = Working Capital (Current Assets – Current Liability)/Total Assets

**$X_2$**  = Retained Earnings/Total Assets

**$X_3$**  = Earnings Before Interest and Taxes/Total Assets

**$X_4$**  = Market Value of Equity/Book Value of Total Liabilities

**$X_5$**  = Sales/Total Assets.

Based on the Z-score calculated in the model above, the below criteria will be used to establish the classification of firms into the various zones of discrimination to define each of the firms as either being in safe zone, in grey zone or distressed. Safe zone will represent financially sound firms whereas firms whose Z score will lie in the distress zone will be indicative of failing firms. Firms in the grey zone have their scores lying between 1.81 and 2.99. This is summarized below;

Z – Score > **2.99** - “Safe” Zone

**1.81** < Z < **2.99** - “Grey” Zone

$Z < 1.81$  – Distress Zone

### **3.6.2 Tests of Significance**

Parametric tests were used to establish the general model's relevance as well as the significance of specific coefficients. The F-test determines the meaning of the overall model and this is done with ANOVA. A t-test assesses the importance of each variable

## CHAPTER FOUR

### DATA PRESENTATION, RESULTS AND DISCUSSION

#### 4.1 Introduction

An empirical study relies on data gathered in accordance with established protocols and processes in order to draw meaningful and trustworthy findings about the phenomena being studied. To achieve the study goals, this chapter displays the data collected. The conclusions, as well as the research data, correlations, and regression results, are all provided in the summary.

#### 4.2 Descriptive Statistics

The following table 4.1 shows the summary descriptive statistics of the research data.

**Table 4.1: Study Variables Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
1. Z-Score	45	-.18	0.26	0.0363	0.14162
2. Inventory Turnover Days	45	22.52	88.54	45.12	6.70
3. Average Payment Period	45	78.04	216.11	113.41	104.07
4. Cash Conversion Period	45	-119.46	47.69	-77.39	121.33
5. Average Collection Period	45	19.28	74.34	32.68	14.84
6. Current Ratio	45	.05	3.31	1.06	0.57
7. Company Size	45	12.05	15.47	13.6463	0.85004
Valid N (listwise)	45				

The inventory turnover period of the listed manufacturing companies averaged 45 days, with the standard deviation standing at about 6 days. Some firms had a considerably high inventory turnover period, considering that the maximum value observed in the data set was 88 days. The findings also suggest that some firms were very efficient in the management of inventory, with the inventory turnover period standing at 22 days. A low inventory turnover period minimizes the costs associated with inventory, such as storage and warehousing expenses (Raheman and Nasr, 2007).

Efficient inventory management is especially important for the firm's bottom line if the annual ordering costs do not exceed the inventory costs.

The average payment period for the payables over the period covered by the study stood at 113 days, with a very high standard deviation of 104 days. Some firms' average payment period substantively exceeded the average; the maximum value in the data set was 216 days. The minimum payment duration, according to the data, is 78 days, approximately half the average for all the companies studied over the time period covered by the research. However, certain enterprises were highly efficient in managing credit purchase payments. The five-year analysis found that the average collection time for the listed manufacturing companies was 32 days, with a standard variation of 14 days.

Some firms had a higher collection period than others did, considering the maximum value of 74 days, which is more than twice the average for all the firms. Working capital management seems to be a success for the indicated manufacturing enterprises, based on their average payment period exceeding their average collection time. When a firm delays the payments for supplies acquired on credit, it effectively acquires low-cost working capital (Afza and Nazir, 2009). With the average period for collecting receivables falling below that of making the payments for credit purchases, a firm effectively minimizes the opportunity cost of the funds invested in the merchandise that it sold on credit (Gill, Biger and Mathur, 2010). From the findings, the financial distress of the listed manufacturing firms averaged 3.63%, whereas the natural logarithm of the companies' total assets averaged 13.65.

#### **4.3 Diagnostic tests**

Some parametric procedures require a data set to conform to certain features, including, among others, normality and heteroscedasticity (Cooper and Schindler, 2010). Correlation and regression analysis are among the parametric processes that need normal and heteroscedastic data in order to give appropriate findings. According to the central limit theorem, as a data set grows in size, it tends to be normally distributed (Levine et.al, 2011). Particularly, data sets comprising at least 30 observations have an approximately normal distribution. The data set used for this study had 45 observations, which is way above the minimum number of observations

that result in an approximately normal distribution. Thus, the data for this study met the requirement of a normal distribution.

Cooper and Schindler (2010) argue that regression analysis falls in the class of statistical techniques that are robust to deviations from heteroscedasticity; the ANOVA technique will yield valid conclusions even when the data is not heteroscedastic in the strictest sense, something that is especially true when the data set is very large. By implication, therefore, this study's data set comprising 45 observations had adequate safeguards against homoscedasticity.

#### **4.4 Correlation Analysis**

In the study, the Pearson correlation coefficient was used to establish the kind and extent of the relationship between the variables. The correlation matrix is shown in the following table. Table 4.2 shows that the financial hardship of the listed manufacturing enterprises throughout the study period is positively and significantly correlated with their inventory turnover time. The financial distress of the companies intensifies as the inventory turnover time lengthens. Inventory turnover is a good indicator of how quickly a company's goods can be sold. As inventory costs fall, so do the operational expenses of these firms, which benefit from decreased inventory costs. In turn, this leads to a rise in financial hardship as a consequence of increased inventory turnover over the course of a fiscal year.

There seems to be an inverse association between the financial hardship and the average payment term for payables in Table 4.2 below. A company's suppliers may impose strict credit conditions as a consequence of a prolonged payment period, resulting in the loss of a low-cost source of credit (Howarth & Westhead, 2003). When a company's primary source of low-cost short-term credit disappears, the company is forced to seek out more expensive other sources of short-term credit, which lowers its overall profitability by raising its operational costs (Ricci and Vito, 2000). The financial distress of listed manufacturing companies is positively correlated with the average collection duration: as the collection period grows, so does the financial hardship.

#### **Table 4.2: Correlation Matrix**

	Z Score	Inventory turnover period	Average payment period	Average collection period	Cash conversion cycle	Size	
Z Score	Pearson Correlation	1	.307**	-.232**	.268**	-.087	0.618
	Sig. (2-tailed)		.000	.000	.000	.215	.000
	N	45	45	45	45	45	45
Inventory turnover period	Pearson Correlation		1	.278**	-.163*	-.147*	.431*
	Sig. (2-tailed)			.000	.019	.035	.001
	N		45	45	45	45	45
Average payment period	Pearson Correlation			1	.079	-.140*	.759**
	Sig. (2-tailed)				.256	.044	.000
	N			45	45	45	45
Average collection period	Pearson Correlation				1	.194**	.538**
	Sig. (2-tailed)					.005	.000
	N				45	45	45
Cash conversion cycle	Pearson Correlation					1	.466**
	Sig. (2-tailed)						.001
	N					45	45
Size	Pearson Correlation						1.000
	Sig. (2-tailed)						
	N						45

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

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

A long collection period implies that the firm has favorable credit terms, which results in higher sales and profit margin. It has been shown that the cash conversion cycle has a negative correlation with financial stress. To ensure the long-term health and profitability of a firm, short-term operating needs must be satisfied through a swift cash conversion cycle (Akoto, Awunyo and Angwor, 2013).

The study's control variable, firm size, had a positive correlation with all of the other variables. Large firms command a high market share, which implies high demand for their products: this leads to a high inventory turnover (Gill, Biger and Mathur, 2010).

The large market share of big firms also implies that they can negotiate favorable credit terms with their suppliers, which results in a long average payment period. Big firms can also allow favorable credit terms to their customers without undermining their capacity to generate adequate short-term cash flow to finance operations, which results in a long average collection period.

#### 4.5 Regression Analysis

The research data was analyzed using a regression model to see how well the study's independent factors predicted the financial distress of listed manufacturing businesses. The following table summarizes the regression model.

**Table 4.3: Model summary**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.485 <sup>a</sup>	.235	.340	.03685

a. Predictors: (Constant), company size, cash conversion cycle, average collection period, average payment period, Inventory turnover period

There is a substantial association between listed manufacturing businesses' actual financial distress and the return forecast by the regression model: the multiple correlation coefficient, multiple R, is 0.485. R Square is 0.235, which suggests that 23.5 percent of listed manufacturing enterprises' financial difficulties can be explained by the study's independent variables across the study's time period. The relevance of the regression model was examined by the researcher. The following table illustrates the results obtained.

Table 4.4: Model significance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.055	5	.011	11.001	.000 <sup>b</sup>
	Residual	.324	324	.001		
	Total	.379	329			

a. Dependent Variable: Financial distress

b. Predictors: (Constant), company size, cash conversion cycle, average collection period, average payment period, Inventory turnover period



The large test statistic is due to the fact that the mean regression sum of squares is greater than the mean residual sum of squares, as seen in the table. At the 0.05 significance level, the model failed to pass the test since its test statistic has a significance value of 0.000, making it insignificant. Because of this, the regression model accurately forecasts the financial hardship of the listed manufacturing companies that comprised the research population. The relevance of the regression model's coefficients was further tested. The results are shown in the following table.

**Table 4.5: Regression coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.024	.007		2.161	.032
	Inventory turnover period	.089	.014	.381	5.857	.000
	average payment period	-.089	.015	-.342	-5.289	.000
	average collection period	-.082	.014	-.149	-2.348	.020
	cash conversion cycle	.050	.000	-.050	-.784	.434
	company size	1.288	.445	.525	2.896	.006

a. Dependent Variable: Financial distress

From the preceding table, all of the regression coefficients, except the cash conversion cycle, are significant predictors of the dependent variable. The largest changes in the financial distress result from the changes in the inventory turnover period and the cash collection cycle, which have larger coefficients than other dependent variables do. A unit change in the independent variables has an effect on the financial distress of the listed manufacturing enterprises, as shown by the coefficients' values. Consistent with previous results, regression coefficients are important because they show that a model is a substantial predictor of the dependent variable.

#### **4.6 Discussion of Findings**

It's clear from the data that there is a positive link between listed industrial businesses' financial difficulties and multiple correlation coefficients of 0.485. There was 23.5 percent variation in listed industrial businesses' financial hardship that could be explained by the regression model. There's a strong correlation between the model's

coefficients and their 0.05 significance level, which is consistent with previous studies. Similar findings were discovered by Omesa et al. (2013), who evaluated the relationship between WCM and NSE-listed firm performance.

Work in progress and company success, as evaluated by return on equity, were shown to be closely linked, according to the findings. The influence of working capital management variables on Sugar Manufacturing companies' net operating profitability in Kenya was also studied by Chemis (2015), who discovered a significant impact on net operational profitability. The following are some examples of working capital management aspects: If a company's inventory turnover is high, it means that the company sells all of its unsold goods quickly. As such, they do not incur high costs of inventory, and when the inventory costs and expenses decline, the overall operating costs are likely to decline.

In addition, high inventory turnover during a financial year ultimately translates into a high sales turnover, and therefore high sales revenue, which boosts the financial distress. It's also important to think about the effect that a lengthy repayment period may have on a company's suppliers, which might lead to the loss of a low-cost source of credit (Raheman & Nasr, 2007). When a company's suppliers no longer provide low-cost credit, it will have to resort to other sources of short-term financing, which raises its total operating costs and, as a consequence, its bottom-line performance (Afza and Nazir, 2009).

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

According to the study's research subject, a lot of new concepts were discovered in the preceding chapter. The study's results are summarized in this chapter. A wide range of stakeholders in Kenya's publicly traded industrial enterprises would be impacted by the conclusions of this study. As a result, the researcher offers suggestions that, if implemented, may have a significant impact on Kenya's manufacturing industry. Managing working capital is critical in Kenya, because manufacturing is one of the country's most important job-creation industries. As well as pointing out the study's shortcomings, the chapter offers some ideas for further research.

#### 5.2 Summary of Findings

Financial distress in the listed manufacturing enterprises was shown to be correlated with their inventory turnover time during the research period, according to the results. The financial distress of the companies intensifies as the inventory turnover time lengthens. Inventory turnover is high when it takes a lengthy time for companies to convert their stock into sales. As such, they do incur high costs of inventory, and when the inventory costs and expenses increase, the overall operating costs are likely to increase. In addition, high inventory turnover during a financial year ultimately translates into lower sales turnover, and therefore low sales revenue, which boosts the financial distress.

Financial distress has a negative link with the average payment duration for payables: as the payment period grows, the financial anguish increases as well. A lengthy payment time is likely to result in strict credit conditions being imposed on a business by its suppliers, resulting in the loss of a low-cost source of credit (Howarth & Westhead, 2003). The loss of low-cost credit from a business's suppliers almost certainly leads to increased finance charges as the firm seeks new sources of short-term credit, resulting in a reduction in bottom-line performance as total operational costs rise (Ricci and Vito, 2000). Financial hardship has a positive link with the

average collection duration of listed manufacturing firms: as the collection period grows, financial misery increases as well.

Multiple R, the coefficient of multiple correlation, comes at 0.485, indicating a positive relationship between the actual financial difficulties experienced by the listed manufacturing companies and their expected return during the research period. An R Square of 0.235 indicates that 23.5 percent of listed manufacturing enterprises' financial difficulties can be explained by the study's independent variables throughout the time period covered by the study. The regression model can be used to reliably anticipate the financial difficulties of publicly traded industrial companies. The cash conversion cycle is not a significant predictor of the dependent variable in the regression model. Working capital management seems to have a significant impact on the financial distress of listed Kenyan manufacturing businesses during the course of the five-year study.

### **5.3 Conclusions**

In light of the findings, working capital management has a significant impact on the financial performance of listed manufacturing businesses in Kenya since the regression model substantially predicts the financial hardship of this group. Working capital management decisions have profound effects on a firm's liquidity, which ultimately influences profitability. If the management of a firm decides to maintain a high inventory turnover, the investment in inventory decreases. Consequently, the firm is less likely to experience liquidity problems, which helps prevent operational breakdown that can possibly lead to higher production expenses.

There must be caution when increasing the inventory turnover because high ordering costs can erode the gains made from the savings on the opportunity costs of investing in inventory. Ultimately, the manufacturing sector firms must weigh the benefits of reduced inventory costs against the possible increase in inventory expenses. Due consideration must also be given to the decisions on the accounts payable period and the receivables conversion period. A long accounts payable period provides the firm with a low-cost source of funding for short-term operational needs, although it has the potential to undermine the credit rating of a firm, which creates difficulties in securing funds for development in the long-term. Similarly, inappropriate decisions affecting

the receivables collection period, while beneficial in terms of lifting the sales turnover and revenue, may result in shortfalls in the short-term cash flow.

#### **5.4 Recommendations**

The managers of the listed manufacturing firms should keep the inventory turnover period as low as possible. The regression model's results demonstrate that inventory turnover has a positive coefficient. Reducing the inventory turnover period will help the manufacturing firms incur reduced costs associated with inventory, such as the storage and warehousing expenses. With low inventory costs, there is no doubt that there will be a decrease in the overall cost of operations, which ultimately enhances a firm's bottom line performance. Low operating costs are particularly important for the manufacturing sector where export competitiveness increasingly hinges on the efficient utilization of production resources.

Coordination between the regulations for sales settlement and the collection of cash from receivables in publicly listed manufacturing businesses is essential for optimal working capital management performance. Manufacturing firms will benefit if they do not settle the obligations arising from credit purchases in a short time, and if they collect cash from credit sales within a very short time. The ultimate objective should be maximizing liquidity while ensuring that the firm's profitability is not affected.

#### **5.5 Limitations of the study**

Organizational performance may not be fully captured by this study's use of a single performance measure, financial distress; this may not sufficiently capture all essential components. Working capital management decisions can affect other dimensions as well. For instance, inappropriate decisions on the inventory turnover period can result in inadequate supplies for the production process, which causes delays in fulfilling customer orders. Delays in fielding customer orders can cause customer dissatisfaction, which may result in the loss of competitiveness.

The study did not consider how working capital management decisions interact with a firm's strategic direction in influencing financial performance, an aspect that is essential in understanding how working capital management influences organizational

performance. For instance, a firm that aims to be a cost leader will manage its working capital in a way that reduces the overall operating costs, which may not be the case for a firm pursuing a differentiation strategy.

### **5.6 Suggestions for Further Research**

Organizational performance should be included as the dependent variable for future study. An example would be the measurement of performance using a composite index that incorporates qualitative and quantitative measures of performance. This will help us better understand how working capital management affects a company's success.

Future study should explore the link between a company's strategic decisions and its working capital management alternatives. Tactical and operational choices on working capital management should be examined to see whether their efficacy in aiding the company in achieving specific goals is influenced by those made at the strategic level.

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## APPENDICES

### Appendix I: Manufacturing Firms Listed at the NSE

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

**Source: NSE (2020)**

## Appendix II: Data Collection Instrument

Year	Net income	Total revenue	Age of the firm	Total debt	Total assets	Current assets	Current liabilities	Retained earnings	EBIT
2016									
2017									
2018									
2019									
2020									